# Work Package Plan

## P1023 Manchester Oxford Rd CCTV Upgrade

Prepared by:

**Ray Shepley** …30-08-23……..Date
(Print Name)

(Signature)

**Construction Manager**
(Job Title)

Approved by:

**David Separovich** ……30-08-23…..Date
(Print Name)



(Signature)

**Project Manager**

(Job Title)

**Accepted on behalf of Northern Railways**

…… ……Date
(Print Name)

…… (Signature)

……
(Job Title)

**Start Date:** 01-10-23

**Finish Date:** 31-03-24

**Work Package Plan Number:**
P1055-PWM-NTL-WPP-01

**Controlled Copy Number**
**Add Unique No:**

**Construction Phase Plan Reference Number**
P1055-PWM-NTL-CPP-01

This document is the property of PWM UK LTD, the Principal Contractor on the project.

Controlled copies will have a controlled copy number shown in RED. Any variation will be regarded as uncontrolled for information only.

The responsibility for the health, safety and environmental management of the Works rests fully and unreservedly with the Principal Contractor. The acceptance of a Work Package Plan on behalf of Network Rail and involvement in Studies or Audits does not in any way absolve the Principal Contractor from that accountability and responsibility, nor is it intended to confirm or suggest that the Principal Contractor fully meets the statutory requirements.

## DISTRIBUTION LIST

| ISSUED TO: | JOB TITLE | ORGANISATION | VERSION |
|---|---|---|---|
| Document Control Master | | | 1.0 |
| Phillip Marsden | NTL Senior Project Manager | Northern Trains | 1.0 |
| Jonathan Mooney | Project Manager | Northern Trains | 1.0 |
| Paul Vickers | CDM Consultant - Principal Designer | Vetrix | 1.0 |
| Alex Murphy | Managing Director | PM UK Ltd | 1.0 |
| Stacy Benson | Operations Director | PM UK Ltd | 1.0 |
| Martin Oates | Head of Design | PM UK Ltd | 1.0 |
| David Separovich | Project Manager | PM UK Ltd | 1.0 |
| Gary Cunningham | Construction Manager | PM UK Ltd | 1.0 |
| Ray Shepley | Construction Manager | PM UK Ltd | 1.0 |
| Kevin Popowycz | Installation Manager | Macs Electrical Ltd | 1.0 |

## VERSION CONTROL

| VERSION NUMBER | SUMMARY OF CHANGES |
|---|---|
| **Draft** | |
| **1.0** | Issued For Acceptance |
| | |

**CONTENTS**

**1 Introduction 6**
1.1 Brief outline of work methodology 6
1.1.1 Worksite Setup 6
1.1.2 CCTV & Lighting Column Lowering 6
1.1.3 Camera Replacement 6
1.1.4 NVR Installation 7
1.1.5 CCTV Commissioning 7
1.1.6 Cabling in trunking, conduit and underground ducts 7
1.1.7 CMS installation and alterations 7
1.1.8 Installation of Trenches, Access Chambers & Manholes 7
1.1.9 Installation of concrete plinths 7
1.2 Principal Contractor's delivery organisation 9
1.3 Principal Contractor's Sub-Contractors 9
1.4 Resources 9
1.4.1 Documentation 9
1.4.2 Programme 10
1.4.3 People 10
1.4.4 Plant, Equipment and Tools 10
1.4.5 Materials 11
**2 Working Together 12**
2.1 At site communication 12
2.1.1 Site Communication 12
2.2 Contact details 12
2.3 Other parties involved with the package of work (interfaces details) 13
**3 Hazard Management 15**
3.1 Work Involving Particular Risks 15
3.2 Significant railway and construction risks 16
3.3 Working at Height 19
3.4 COVID-19 (Coronavirus) Measures 20
3.5 Hand Arm Vibration Syndrome (HAVS) 21
3.6 Pre-Work Assessment 23
3.7 Lifesaving rules 24
3.8 Personal Protective Equipment 25
3.9 Competencies 25
**4 Environmental and Waste Management Arrangements 26**
4.1 Environmental Management Arrangements 26
4.2 Heritage Building (Listed) 26
4.3 Waste management arrangements 26
**5 Emergency Arrangements 28**
5.1 Site Emergency Arrangements 28
5.1.1 In the event of an emergency - non railway 28
5.1.2 In the event of an emergency - railway 29
5.1.3 Accident and Incident reporting 29
5.1.4 First aid arrangements 30
5.1.5 Evacuation arrangements 30
5.1.6 Fire safety arrangements 30
5.1.7 Security arrangements 31
5.1.8 Summoning emergency services 31
5.1.9 Asbestos 32
5.1.10 Utilities 33
5.1.11 Spill Kits 33
**6 Work Package Arrangements 34**
6.1 Site Layout 34
6.2 Access and Egress 34
6.2.1 Access Permits 34

6.2.2 Signing In At Station 34
6.2.3 Staffed Station Access 35
6.2.4 Non-Staffed Station & Part Time Station Access 35
6.2.5 Denied Access to Station 35
6.2.6 Working Alone 35
6.3 Welfare 35
6.4 Rail Traffic Management 35
6.5 Road Traffic Management 35
6.6 Interfacing with the public 36
6.7 Public & Data Protection Statement 37
6.8 WPP / TBS Briefing Arrangements 37
**7 Hand Over and Hand Back Arrangements 39**
7.1 Hand over and hand back arrangements 39
**8 APPENDICES – Supporting information 40**
8.1 Appendix A – CCTV Installation Instructions 41
8.2 Appendix B – Hospital Maps 42
8.3 Appendix C – Asbestos Management Survey Report (ARMS) 43
8.4 Appendix D – Refurbishment & Demolition Survey Report (R&D) 44
8.5 Appendix E – Listed Building 45
8.6 Appendix F – Utilities Layout Drawings 46
8.7 Appendix G – Site Setup & Arrangements 47
8.8 Appendix H – COSHH Assessments 48
8.9 Appendix I – Risk Assessments 49

| Abbreviation | Description |
|---|---|
| C.A.T | Cable Avoidance Tool |
| CCTV | Closed Circuit Television |
| CPP | Construction Phase Plan |
| CIS | Customer Information System |
| CR-T | Contract Requirements – Technical |
| DOO | Driver Only Operation |
| DVR | Digital Video Recorder |
| M&E | Mechanical & Electrical |
| NVR | Network Video Recorder |
| OPO | One Person Operation |
| PA | Public Announcement |
| PA/VA | Public Announcement / Voice Alarm |
| PHP | Public Help Point |
| POE | Power Over Ethernet |
| PVAL | Platform Ticket Validator |
| RVP | Rendezvous Point |
| SAP | Staff Assembly Point |
| S&T | Signalling & Telecoms |
| SISS | Station Information and Security Systems |
| SPL | Sound Pressure Level |
| SPT | Signal Post Telephone |
| TBS | Task Briefing Sheet |
| TOR | Top Of Ramp |
| TRTS | Train Ready To Send |
| TVM | Ticket Vending Machine |
| WPP | Work Package Plan |

# 1 Introduction

## 1.1 Brief outline of work methodology

PWM UK Ltd have been commissioned by Northern Trains Limited to carry out CCTV upgrades to Manchester Oxford Road. This document has been produced from the overarching Construction Phase Plan, to ensure all aspect of H&S are current and relevant.

The works will consist of replacing all the station cameras across the station grounds, including platform and car parks. All works are to be carried out as described within this WPP, with the site manager ensuring that the installation works are carried out to the correct standards.
The WPP will form part of the site pack which will include the associated Task Briefing Sheets, relevant drawing, datasheets and manuals.

### 1.1.1 Worksite Setup

Around each camera location, there will be a requirement to setup an exclusion zone using chapter 8 barriers to prevent public and other operative entering the worksite. This exclusion zone may be around the access equipment or if lighting/CCTV columns have been lowered around the length of the column to prevent people or vehicles either walking or driving into it.

**NOTE:** Blue Chapter 8 barriers are to be used on platforms and locations which are visible by oncoming train, this is to mitigate the risk of train operators confusing configure the usual red barriers with red signals.

Where the access is required to CCTV Camera columns that do not lower, a mobile tower is to be erected to allow safe WaH for the replacement works. The tower must be erected by a PASMA trained operative.

### 1.1.2 CCTV & Lighting Column Lowering

Where lighting and CCTV Camera Columns are lowered to reduce WaH associated risks, the propriety lowering units must be used to suit the specific type of column. This must be carried out following the manufacturer's instructions. Column type and which model required must be listed on the H&S documentation.

### 1.1.3 Camera Replacement

When replacing CCTV cameras, the existing camera will remain active until the new camera is ready to be installed, cabling is tested and complete and the new camera ready to start live viewing and recording.
The new camera must be installed as per manufacturer's instructions and ensuring the IP rating of the camera and/or enclosure is maintained. In some cases, media converters will be required to convert the IP protocol to analogue for coax cable transmission, this is typically limited to Lift car cameras where the umbilical coax will not be upgraded.

### 1.1.4 NVR Installation

Where possible existing CCTV cabinets will be reused, otherwise new cabinets will be installed. All existing equipment is to be removed ensuring all cable have permanent labels or temporary labels added to ensure correct configuration when the new system is connected to the Cisco switch.

### 1.1.5 CCTV Commissioning

The Commissioning Engineer must utilise the VSS Cone Coverage design to ensure the CCTV camera positioning is correct to achieve the Operational Requirements of the station.
The NVR setup for live, record and remote settings must be set with the profies provided by NTL CCTV Asset Manager.

### 1.1.6 Cabling in trunking, conduit and underground ducts

The current CCTV system is cabled in coax and under a previous project the original CCTV comms cabinet was relocated with the coax cables being extended with Cat 5e cabling and baluns. Therefore, a full cable replacement of the station is required for this station even if it appears new cables have been installed at the CCTV cabinet.
Cable installation methods across the stations may comprise of trunking, cable tray/basket, conduit and/or underground ducting. All new cables will be tested to cat6 performance standard and the report issued as part of the handover documentation.

### 1.1.7 CMS installation and alterations

Where CMS installation is of poor condition or poorly installed and may adversely affect the new camera installation ie water ingress or unsupported cable routes, this must be replaced. The design details new and modified existing trunking systems. Before and after photos of the CMS alterations are to be taken to included as part of the handover documentation.
For complex alterations or new planned routes which differ from the design, a design sketch must be produced and approved by NTL prior to starting the work onsite.

### 1.1.8 Installation of Trenches, Access Chambers & Manholes

There are various underground ducting routes required for the station to connect the main communications cabinet to intermediate cabinets located around the station to ensure CCTV camera lengths remain under the 90m performance limits of Cat 6 cable.
In addition, additional duct routes are used to connect existing access chambers to new assets such as CCTV columns or trunking systems. Trenches will be cut and filled following the typical detail design, showing trench depths, backfilling materials, trench marker tapes and access chamber entries.

### 1.1.9 Installation of concrete plinths

Installation of external cabinets require mounting and fixing to a concrete plinths in which the underground ducts will enter the cabinet. Concrete plinths will poured into site made formwork,

using rebar mesh and a C40 concrete mix. All edges to be chamfered with a brush finish and smooth edge. Concrete plinth to be level and plumb to existing surrounding structures.

**The following tasks support this Work Package Plan:**

| Reference & Prepared by: | Task Briefing Sheet Title | Activity Start Date |
|---|---|---|
| *TBS0001; David Separovich* | *Worksite Setup* | *30-08-23* |
| *TBS0002; David Separovich* | *Camera /Lighting Column Lowering* | *30-08-23* |
| *TBS0003; David Separovich* | Camera Replacement | *30-08-23* |
| *TBS0004; David Separovich* | Cabinet & NVR Installation | *30-08-23* |
| *TBS0005; David Separovich* | CCTV Commissioning (Partial & Complete) | *30-08-23* |
| *TBS0006; David Separovich* | Cabling in trunking, conduit and underground ducts | *30-08-23* |
| *TBS0007; David Separovich* | CMS installation and alterations | *30-08-23* |
| *TBS0008; David Separovich* | Civil Works – Trenches and Manholes | *30-08-23* |
| *TBS0009; David Separovich* | Civil Works – Concrete Bases | *30-08-23* |

## 1.2 Principal Contractor's delivery organisation

The following individuals from the Principal Contractor's organisation will be involved during this work package:

| Role | Name | Contact Details |
|---|---|---|
| CEO PWM UK Ltd | Robert Cullen | 07894 546883<br>rob.cullen@pwmukltd.com |
| Managing Director PWM UK Ltd | Alex Murphy | 07500 027 133<br>Alex.murphy@pwmukltd.com |
| Head of Design PWM UK Ltd | Martin Oates | 07595 291484<br>martin.oates@pwmukltd.com |
| Operations Director | Stacy Benson | 07718135580<br>Stacy.benson@pwmukltd.com |
| Project Manager | David Separovich | 07976199060<br>david.separovich@pwmukltd.com |
| Construction Manager | Richard McKenna | 07968 965376<br>richard.mckenna@pwmukltd.com |
| Construction Manager | Ray Shepley | 07855408233<br>ray.shepley@pwmukltd.com |
| H&S Manager | Richard Sharp | 07736 727997<br>Richard.sharp@pwmukltd.com |

## 1.3 Principal Contractor's Sub-Contractors

The following companies, specialist contractors and/or individuals will be involved during this work package:

| Name and address of company, specialist contractor or individual, etc. | Work activity / Specialism | Point of contact details (name and telephone number |
|---|---|---|
| Macs Electrical Ltd - Installation Manager. | *Installation & Testing* | Kevin Popowycz<br>07774 171130<br>kevin@macselectrical.co.*uk* |

## 1.4 Resources

The following resources will be used for this work package:

### 1.4.1 Documentation

The CCTV installation detail are contained within design report will be included in the site pack and WPP appendices.

- Manchester Oxford Rd Station CCTV Fibre CMS Design - S02002.ENGR.DRGS.627660
- VSS Cone Coverage - S02002.ENGR.DRGS.627663
- Manchester Oxford Rd Station CCTV Station Plan - S02002.ENGR.DRGS.627356

- Manchester Oxford Rd Station CCTV Recoveries Sation Plan - S02002.ENGR.DRGS.6273605
- Manchester Oxford Rd Station Audio Recording - S02002.ENGR.DRGS.627266
- Manchester Oxford Rd Station CCTV Fibre CMS Design - S02002.ENGR.DRGS.627660
- Manchester Oxford Rd Station CCTV Copper CMS Design - S02002.ENGR.DRGS.627659

### 1.4.2 Programme

Works are shown on the PWM Programme of Works for the Manchester Oxford Rd CCTV project and will be detailed weekly on the PWM / NTL Flash Report.

### 1.4.3 People

| Number of People and their competence | Task |
|---|---|
| 1No Site Person In Charge in First aid | *All Activities* |
| 1No. Comms Engineer | *All Activities* |
| 1No. Comms Engineer | *All Activities* |
| 1No Multiskilled (PASMA) | *All Activities* |
| 2No Electrician | *TBS007* |
| 1No Civil Team – Civil Supervisor | *TBS008 & 009* |
| 2No Civil Team – Ground Workers | *TBS008 & 009* |

### 1.4.4 Plant, Equipment and Tools

| Quantity of Plant, Equipment and Tools | Task |
|---|---|
| *Hand tools* | *TBS0003* |
| *SDS Drills* | *TBS0003* |
| *Cordless Drill* | *TBS0003* |
| *Cordless Grinder* | *TBS0003* |
| *6M Mobile Tower GRP & Aluminium* | *TBS0003* |
| *GRP Step Ladders* | *TBS0003* |
| *CCTV Test Kit and Hand held monitor* | *TBS0003* |
| *Hinged Column Counter-balance Units or Winch* | *TBS0002* |
| *Cat 5 & 6 Test Kit (Report Downloadable)* | *TBS0006* |
| *Conduit Bender* | *TBS0007* |
| *Petrol Stihl Saw* | *TBS0008 & 0009* |
| *Whacker Plate* | *TBS0008 & 0009* |
| *110v Petrol Generator* | *TBS0008 & 0009* |

### 1.4.5 Materials

| Quantity of Materials | Task |
|---|---|
| *Dome Cameras* | *TBS0003* |
| *Camera Housing* | *TBS0003* |
| *IP Camera* | *TBS0003* |
| *Media Convertors* | *TBS0003* |
| *Fixing Sundries (Nuts& Bolts)* | *TBS0003* |
| *Sealant* | *TBS0003* |
| *Cat6 Cable Internal & External Grade* | *TBS0006* |
| *Composite (Hybrid) fibre* | *TBS0006* |
| *25mm Conduit and accessories* | *TBS0007* |
| *Medium Duty Cable Tray and Trunking* | *TBS0007* |
| *Twin Wall duct* | *TBS0008* |
| *Engineering Bricks* | *TBS0008* |
| *Cement* | *TBS0009* |
| *Building Sand* | *TBS0009* |
| *Sharp Sand* | *TBS0008* |
| *C40 C45 concrete* | *TBS0008* |
| *Type 1 ballast* | *TBS0008* |
| *Plywood* | *TBS0009* |
| *Chemical Fix* | *TBS0009* |
| *Reinforcement bars / grids* | *TBS0009* |
| *Engineering Blocks* | *TBS0008* |

# 2 Working Together

## 2.1 At site communication

### 2.1.1 Site Communication

The site team will be working on the station grounds and adjacent carparking areas. The site supervisor will have line of site for all local worksites under his control with verbal communication being the primary source of communication. Any issues with mobile coverage must be reported immediately to the site supervisor to evaluate any the potential risks involved.

## 2.2 Contact details

The following are the main contacts for this work package:

| Name | Role | Organisation | Contact details |
|---|---|---|---|
| Phillip Marsden | Snr Project Manager | Northern Railways | 07919 424746<br>Phillip.marsden@northernrailways.co.uk |
| Jonathan Mooney | Project Manager | Northern Railways | 07568 553407<br>Jonathan.mooney@northernrailways.co.uk |
| Alex Murphy | Manager Director | PWM UK Ltd | 07500 027 133<br>Alex.Murphy@pwmukltd.com |
| Stacy Benson | Operations Director | PWM UK Ltd | 07718135580<br>Stacy.benson@pwmukltd.com |
| David Separovich | Project Manager | PWM UK Ltd | 07976199060<br>david.separovich@pwmukltd.com |
| Martin Oates | Head of Design | PWM UK Ltd | 07595 291484<br>martin.oates@pwmukltd.com |
| Richard McKenna | Construction Manager | PWM UK Ltd | 07968 965376<br>richard.mckenna@pwmukltd.com |
| Richard Sharp | H&S Manager | PWM UK Ltd | 07736 727997<br>Richard.sharp@pwmukltd.com |
| Ray Shepley | Construction Manager | PWM UK Ltd | 07855408233<br>Ray.shepley@pwmukltd.com |
| Kevin Popowycz | Installation Manager | MACS Electrical Ltd | 07774 171130<br>kevin@macselectrical.co.uk |

## 2.3 Other parties involved with the package of work (interfaces details)

The following working arrangements will apply with all parties / organisations that have been identified with this work package:

| Name | Service | Phone Number | Emergency |
|---|---|---|---|
| BT | Telecoms | 0800 023 2023 | |
| Electricity North West Limited | Electricity Supplier | 08001954141 | 08001954141 |
| Northern Powergrid | Electricity Supplier | 105 | |
| SP Energy Networks | Electricity Supplier | 105 | |
| GTC | Gas & Electricity Supplier | 0800 032 6990 | |
| Gas Emergency Contact Number | British Gas | 0800 111 999 | |
| Electric Emergency Contact Number | UKPN | 08003163105 | |
| Northern Gas Network | Gas Supplier | 0800 111 999 | |
| Cadent | Gas Supplier | 08001954141 | 0800 111 999 |
| Severn Trent | Water Supplier | 0800 783 4444 | |
| United Utilities | Water Supplier | 0345 672 3723 | |
| Yorkshire Water | Water Supplier | 0800 573 553 | |
| Scottish and Southern Electricity Networks | Electricity Supplier | 08000483516 | 08000727282 |
| EU Networks Fiber UK Limited | Fibre Network | 02031788003 | 02031788003 |
| Zayo Group UK Ltd c/o JSM Group Ltd | Fibre Infrastructure ducts and equipment | 01992 655 919 | 0800 169 1646 |
| Last Mile | Utility Network and Infrastructure | plantenquiries@lastmile-uk.com | 0800111999 |

In Addition, to the above emergency number(s) being contacted, the following PWM UK Ltd contacts should be notified as a minimum after making contact with the above emergency numbers,

| Name | Company & Role | Phone Number |
|---|---|---|
| David Separovich | PWM UK Ltd – Project Manager | 07976 199060 |
| Ray Shepley | PWM UK Ltd – Construction Manager | 07855408233 |
| Stacy Benson | PWM UK Ltd – Operations Director | 07718135580 |
| Robert Cullen | PWM UK Ltd - CEO | 07894 546883 |

Under these work scope there are no planned interface with others. If there are location clashes with third parties on the station, the first step will be for the site manager to try to rearrange the worksite to allow both work parties to continue with the scope of works. If the situation is evaluated and there is no other work suitable work around, the PWM UK management team must be notified to provide guidance. Work party is not to be stood down until approval has been given by the PWM UK management.

| Interfacing Organisation | Interface Point for: | Point of Contact and contact details | Interface arrangements |
|---|---|---|---|
| ***Not Applicable*** | | | |
| | | | |

# 3 Hazard Management

## 3.1 Work Involving Particular Risks

Regulation 12 (2) of the CDM Regulations 2015 requires the client to provide the principal designer with information about any risks associated with the project. Part 2 of Schedule 3 of the CDM Regulations lists the types of risks that are considered to be "**Particular**" and must be identified by the client.

Under Part 2 of Schedule 3, The full list of risks include (Applicable to this site):

- Work at height
- Excavation work
- Demolition work
- Work in confined spaces
- Work near water
- Work with asbestos
- Work with explosives
- Work with electricity
- Work with biological agents
- Work with chemical agents

The particular risks associated to this project's scope of works are detailed below

| Risk | Permits Required | How will this risk be controlled? |
|---|---|---|
| **Working at Height**<br>Risk falling from a height. | *Ladder Permit*<br>*Scaff Tag* | Working at Height will be controlled by the use of podium steps/ GRP mobile scaffold being used.<br>These will be inspected daily before use and the tag signed and placed on the equipment, as fit for use.<br>No equipment or operative will be within 3m of any Overhead Power lines, or within 1.75m of the platform edge.<br>A PASMA trained operative will sign the equipment off as built correctly and is safe to use. Using the manufacturers assembly instructions. |
| **Excavation work**<br>Burial under earthfalls, or falling from a height into trench<br><br>Buried Services strike gas, water, electricity | *Permit To Dig* | Location of trench to be surveyed and marked out<br>Location to be checked against buried services/utility drawings and any potential clashed identified.<br>Cat Scan using Cable Avoidance Tool of the area to detect pipes, electrical cabling etc.<br>Hand dig 150mm depth for each pass and repeat the CAT scan of the trench. |

| Risk | Permits Required | How will this risk be controlled? |
|---|---|---|
| **Work near high voltage power lines.**<br>Electrocution | Line block or Possession | No works within 3m off any high voltage power lines, GRP equipment utilised.<br>If works is required within 3m works will stop and an isolation will be requested and approved prior to starting works<br>Staff will wear fire retardant overalls all correct PPE at all times.<br>The work area will be segregated with barriers and signage.<br>Possessions will be utilised where required. |

## 3.2 Significant railway and construction risks

The following are the significant railway and construction safety and health risks that apply during this work package:

| Location/ Installation | Hazard | Hazard Rating (RAG) | How can the risk be reduced? |
|---|---|---|---|
| Manchester Oxford Rd | OHLE- electrocution and fatality | R | No work to be carried out within 2.75m of the over head lines.<br>Isolation may be required. |
| Manchester Oxford Rd | Buried services - striking of live services, material damage, electrocution, explosion, fatality. | R | Buried services records to be made available to everyone onsite.<br>Ground penetrating radar might be required. CAT scan to be performed before any platform excavations. |
| Manchester Oxford Rd | Narrow platforms - members of the public sustaining injuries as a result of obstructive hoarding and equipment. | R | Work area to be suitably cordoned off. If2.5 metres safe passing space cannot be provided, access tobe restricted. |
| Manchester Oxford Rd | Narrow platforms/adding additional columns/risk of narrowing the passing space. | R | Designers to consider placing CCTV columns away from platforms or mounting CCTV on existing infrastructure where the risk of space restriction is high. |
| Manchester Oxford Rd | Asbestos - inhalation of Asbestos fibres. Risk of developing a lung disease | R | If any intrusive works are to be undertaken, a R&D report is required prior to the start of works. If at any point any ACMs are suspected on site, work must stop immediately, site manager must be informed and operatives are to leave the area of works. |

| Location/ Installation | Hazard | Hazard Rating (RAG) | How can the risk be reduced? |
|---|---|---|---|
| Manchester Oxford Rd | Work at Height during CCTV installations- falls, fractures, fatalities | R | Working at Height will be controlled by the site manager.<br>Use of podium steps/ GRP mobile scaffold being used. These will be inspected daily before use and the tag signed and placed on the equipment.<br>A PASMA trained operative will sign the equipment off as built correctly and is safe to use. Using the manufacturers assembly instructions |
| Manchester Oxford Rd | New installations being heavier than existing installations, or walls and/or waiting shelters being unable to take the load of new installations - structural instability, injury to workers and members of the public | R | Where existing equipment is replaced with new equipment and existing bracketry is used, a structural engineer to confirm that the existing bracketry can hold the weight of the new installation. Where new installations are made on walls or waiting shelters, a structural engineer needs to confirm that those can take the load of the new installations. |
| Manchester Oxford Rd | Suspended platform- structural instability and platform collapse - potential fatalities | R | No new installation prior to suitably qualified structural engineer checks |
| Manchester Oxford Rd | Exposure to contaminants in the soil/platform make- up | R | Prior to any excavations, a contaminated land report to be reviewed by management on alongside installation design detailing excavation locations. Copy included in the site file for site team verification. |
| Manchester Oxford Rd | Transportation & handling of materials - members of the public being struck | R | Work to be undertaken outside of station operational hours where possible.<br>Storage of materials not permitted onsite. Area of works to be adequately segregated from the public. |
| Manchester Oxford Rd | Contractors equipment/ barriers falling onto platforms - delays, injuries, fatalities | R | All equipment/barriers to be secured to the existing structures or the ground |
| Manchester Oxford Rd | Non-compliance with minimum distances from the platform edge during construction- Fatalities from falling onto the track | R | No work to be undertaken within1.25m of the edge of the platform. Where work within 1.25m is required possession or line block to be arranged for. |

| Location/ Installation | Hazard | Hazard Rating (RAG) | How can the risk be reduced? |
|---|---|---|---|
| Manchester Oxford Rd | Single entry/access point to the island platform - members of the public/workers colliding. | R | Area of works and access routes to the island platform to be adequately segregated from the public.<br>PWM UK to provide temporary access plans for customers or plan all works for nights when station closed. |
| Manchester Oxford Rd | Residential houses close by to station- disturbance of residents- Leading to complaints, noise nuisance, dust generation, vibration. | R | PC to consider local residents when undertaking any noisy/ dusty/ vibrating activities. As per the Control of Pollution Act 1974, PC should comply with the restrictions set out by the local authorities.<br>PC should supress dust at the source. |
| Manchester Oxford Rd | Maintenance and access- injuries because CCTV cannot be accessed for maintenance | R | Positioning of CCTV needs to consider future access and maintenance by design team. |
| Manchester Oxford Rd | Stair access to platform 1 restricts equipment, manual handling injuries | R | PWM UK to consider the equipment required for the job with limited access and manual handling required. |
| Manchester Oxford Rd | signals being blocked by CCTV and construction- Restricting visibility to train drivers leading to major incidents and fatalities | R | Designer to confirm location of CCTV does not block the view of signals.<br>PWM UK Site Manager to ensure sure that they do not block the signal sighting when carrying out the work. For stationary and approaching trains |
| Manchester Oxford Rd | Gas pipes buried in the ground-Rupturing gas pipes-Fatalities. | R | PWM UK to liaise with Utilities Gas to ensure the gas pipes are not affected. |
| Manchester Oxford Rd | Public Interface | A | All worksites will be segregated from the public, utilising physical barriers in the form off Chapter 8 barriers,<br>Signage will be clearly placed warning the public off the worksite, and arrows displayed showing the safe route.<br>Signage will also be displayed of the contractor carrying out the works and all relevant contact information |
| Manchester Oxford Rd | Lone Working (Surveys only) | A | If lone working is required for surveys, the buddy system will be utilised, the lone worker will ring his buddy at the start of works when works are complete and when he is home safely |

| Location/ Installation | Hazard | Hazard Rating (RAG) | How can the risk be reduced? |
|---|---|---|---|
| Manchester Oxford Rd | Excavating Bases and installing underground ducts Buried Services | R | Refer to existing Buried Services Log,<br>CAT scan to be carried out before excavation starts.<br>Soft dig procedure to be utilised. |
| Manchester Oxford Rd | Accessing the Station Entry to the Worksite<br><br>Unfamiliar with surroundings<br>Denied Access to station | A | For access to stations; site operatives will follow the signing in procedure for the specific stations detailed in the WPP,<br>This may include signing in with a Service Control Room either physically or via phone and collecting keys from a dedicated location specified with in the WPP.<br>If a specific station is listed as a manned station and there is no station staff present, refer to section in the WPP covering this process.<br>No persons will be allowed on to the worksite if they have not received a site induction and safety briefing.<br>Any visitor's can be escorted by the site manager for a short-term visit. |
| Manchester Oxford Rd | Finding Sharps (Needles) Needle stick injuries | R | Inform station staff of sharp, make safe where possible. Do not touch.<br>All boots to have mid-sole protection |
| All activities & driving to and from site | Risk of injury or accident due to fatigue | R | Network Rail mandatory travel & shift working rules to be applied. |
| Manchester Oxford Rd | During manual Handling activities<br><br>During all tasks when equipment deployed on platform | R | All persons to adhere with the Manual Handling Regulations |

### 3.3 Working at Height

Safely managing work at height successfully required operative to follow the hierarchy of controls – **Avoid, Prevent, Arrest**.

Prior to planning works, the following controls must be considered.

- Can the work be done safely from the ground?
- Can a Podium or mobile tower be used to provide platform to stand on.
- Select the right podium/ mobile tower for the job. Consider working height, space around access equipment and durations
- Would powered access be a safer and more efficient option.

- Fall restraints and should only be considered as a last resort if other safety equipment cannot be used.
- Ladders are to be used as a last resort either when there are space constraints or for short duration works (less 10mins)

For working at height activities use of podium step (Sherpascopic) or mobiles towers are to be used. The mobile towers can only be built to the by a suitably trained (PASMA) operative. Where these towers are on platforms and could risk fouling the track or breach the minimum distance for overhead lines, works must be carried out in Line Block or Possessions. GRP mobile towers are to be used on platforms or in the vicinity of Over Head Lines.

The site team may require the use step ladders, each time these are used then the Site Person in Charge must approve a ladder permit and the works must be shorter in duration than 10 minutes.

A Dynamic Risk Assessment forms part of the ladder permit and must be complete each time the step ladders are used, to ensure that the step ladders are used safely and correctly.

Typical risk which must be considered

- Ground condition of where the step ladders will be placed
- Proximity of other works.
- General public

As a guide the following diagram will assist the Lead Engineer on site make their decision:

| | | |
|---|---|---|
| **LADDERS / STEPS - Short duration one man jobs min tools/ material**<br>Should be considered a 'last resort'.<br>Must be covered by issue of a ladder permit / Tag / checklist<br>Must be "Class 1" for industrial use, and under inspection / Checks<br>Work must be short term (no more than 10 minutes for a full activity **NOT TASK**)<br>No tools or materials exceeding 10kg.<br>Think orientation and height, often steps can't be positioned safely! |  | |

## 3.4 COVID-19 (Coronavirus) Measures

Site Operatives will not attend site if they show symptoms of coronavirus. As per the NHS guidelines, coronavirus symptoms include:

- A high temperature – this means you feel hot to touch on your chest or back (you do not need to measure your temperature);
- A new, continuous cough – this means coughing a lot for more than an hour, or 3 or more coughing episodes in 24 hours (if you usually have a cough, it may be worse than usual);
- A loss or change to your sense of smell or taste – this means you've noticed you cannot smell or taste anything, or things smell or taste different to normal.

If any of the site operatives or staff involved in the delivery of these work suspects they have caught the coronavirus, they will follow government advice along with contacting the PWM office and seeking further guidance.

### 3.5 Hand Arm Vibration Syndrome (HAVS)

The Control of Vibration at Work Regulations require employers to prevent or reduce risks to health and safety from exposure to vibration at work, in addition, Employees have duties under the regulations too.

The Control of Vibration at Work Regulations require the employer to:

- Assess the vibration risk to your employees;
- Take action to reduce vibration exposure that produces those risks
- Daily exposure limit value (ELV)
- take immediate action to reduce their exposure below the limit value;
- Make sure the legal limits on vibration exposure are not exceeded;
- Provide information and training to employees on health risks and the actions you are taking to control those risks;

**EAV (Exposure Action Value)**

The daily amount of vibration exposure which employers are required to take action to control exposure to the operative. The greater the exposure level, the greater the risk and the more action employers will need to take to reduce the risk.

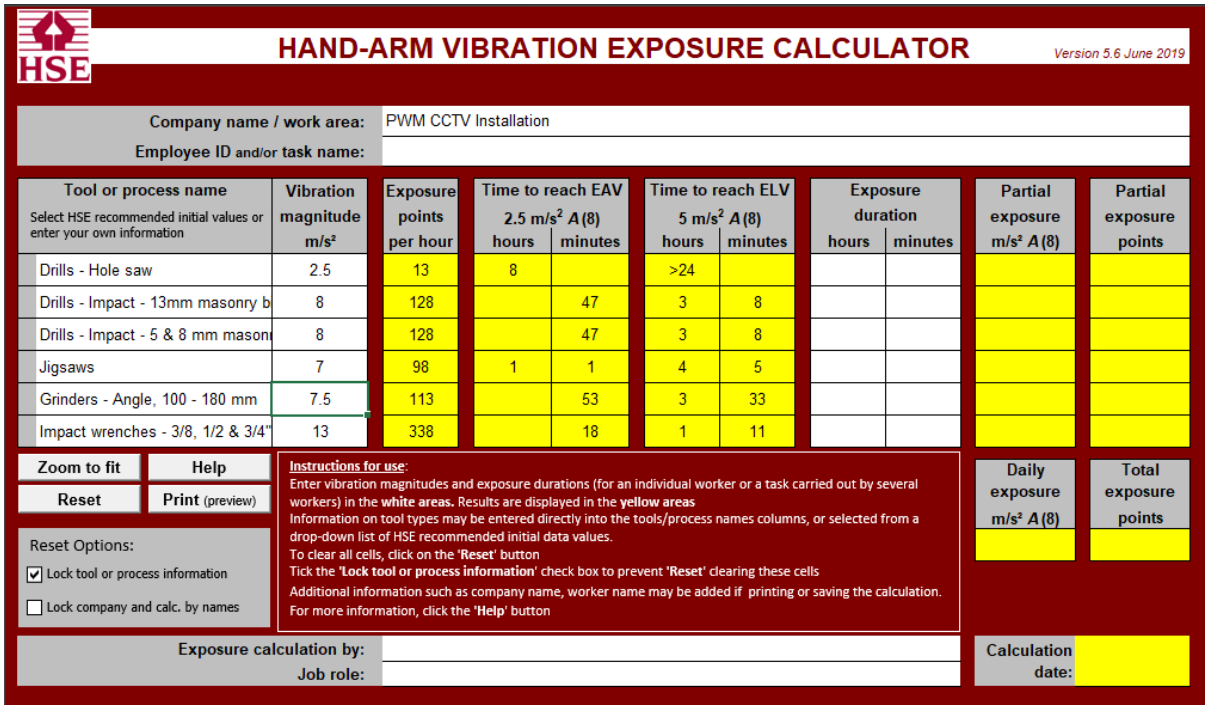
For hand-arm vibration the EAV is a daily exposure of 2.5 m/s2

**ELV (Exposure Limit Value)**

The 'HAVS Exposure Limit' is the abbsolute limit you are legally not allowed to exceed. It is the maximum amount of vibration an employee may be exposed to on any single day.

For hand-arm vibration the ELV is a daily exposure of 5 m/s2

The below tables details the equipment and the Exposure Action And Limit Values (EAV/ELV).



## HAND-ARM VIBRATION EXPOSURE CALCULATOR

Version 5.6 June 2019

**Company name / work area:** PWM CCTV Installation
**Employee ID and/or task name:**

| Tool or process name<br>Select HSE recommended initial values or enter your own information | Vibration magnitude m/s² | Exposure points per hour | Time to reach EAV 2.5 m/s² A(8) hours | Time to reach EAV 2.5 m/s² A(8) minutes | Time to reach ELV 5 m/s² A(8) hours | Time to reach ELV 5 m/s² A(8) minutes | Exposure duration hours | Exposure duration minutes | Partial exposure m/s² A(8) | Partial exposure points |
|---|---|---|---|---|---|---|---|---|---|---|
| Drills - Hole saw | 2.5 | 13 | 8 | | >24 | | | | | |
| Drills - Impact - 13mm masonry b | 8 | 128 | | 47 | 3 | 8 | | | | |
| Drills - Impact - 5 & 8 mm mason | 8 | 128 | | 47 | 3 | 8 | | | | |
| Jigsaws | 7 | 98 | 1 | 1 | 4 | 5 | | | | |
| Grinders - Angle, 100 - 180 mm | 7.5 | 113 | | 53 | 3 | 33 | | | | |
| Impact wrenches - 3/8, 1/2 & 3/4" | 13 | 338 | | 18 | 1 | 11 | | | | |

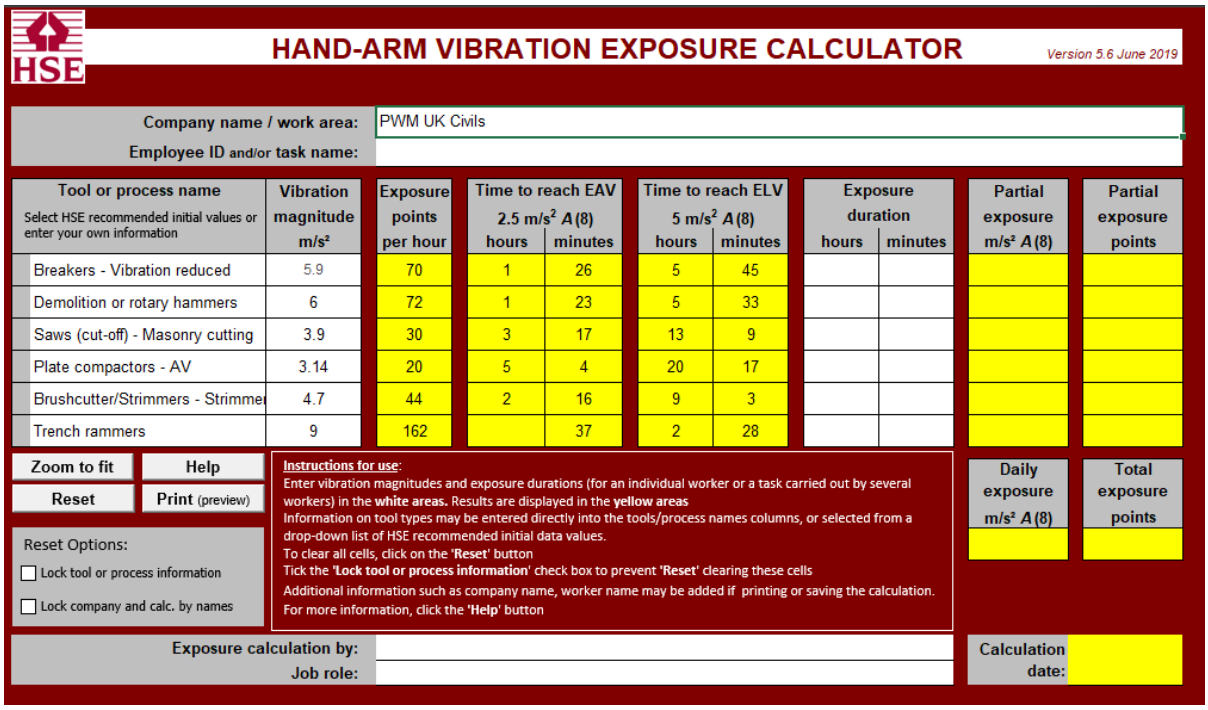
Zoom to fit | Help | Reset | Print (preview)

Reset Options:
☑ Lock tool or process information
☐ Lock company and calc. by names

**Instructions for use**:
Enter vibration magnitudes and exposure durations (for an individual worker or a task carried out by several workers) in the **white areas.** Results are displayed in the **yellow areas**
Information on tool types may be entered directly into the tools/process names columns, or selected from a drop-down list of HSE recommended initial data values.
To clear all cells, click on the **'Reset'** button
Tick the **'Lock tool or process information'** check box to prevent **'Reset'** clearing these cells
Additional information such as company name, worker name may be added if printing or saving the calculation.
For more information, click the **'Help'** button

Daily exposure m/s² A(8) | Total exposure points

**Exposure calculation by:**
**Job role:**
**Calculation date:**



## HAND-ARM VIBRATION EXPOSURE CALCULATOR

Version 5.6 June 2019

**Company name / work area:** PWM UK Civils
**Employee ID and/or task name:**

| Tool or process name<br>Select HSE recommended initial values or enter your own information | Vibration magnitude m/s² | Exposure points per hour | Time to reach EAV 2.5 m/s² A(8) hours | Time to reach EAV 2.5 m/s² A(8) minutes | Time to reach ELV 5 m/s² A(8) hours | Time to reach ELV 5 m/s² A(8) minutes | Exposure duration hours | Exposure duration minutes | Partial exposure m/s² A(8) | Partial exposure points |
|---|---|---|---|---|---|---|---|---|---|---|
| Breakers - Vibration reduced | 5.9 | 70 | 1 | 26 | 5 | 45 | | | | |
| Demolition or rotary hammers | 6 | 72 | 1 | 23 | 5 | 33 | | | | |
| Saws (cut-off) - Masonry cutting | 3.9 | 30 | 3 | 17 | 13 | 9 | | | | |
| Plate compactors - AV | 3.14 | 20 | 5 | 4 | 20 | 17 | | | | |
| Brushcutter/Strimmers - Strimme | 4.7 | 44 | 2 | 16 | 9 | 3 | | | | |
| Trench rammers | 9 | 162 | | 37 | 2 | 28 | | | | |

Zoom to fit | Help | Reset | Print (preview)

Reset Options:
☐ Lock tool or process information
☐ Lock company and calc. by names

**Instructions for use**:
Enter vibration magnitudes and exposure durations (for an individual worker or a task carried out by several workers) in the **white areas.** Results are displayed in the **yellow areas**
Information on tool types may be entered directly into the tools/process names columns, or selected from a drop-down list of HSE recommended initial data values.
To clear all cells, click on the **'Reset'** button
Tick the **'Lock tool or process information'** check box to prevent **'Reset'** clearing these cells
Additional information such as company name, worker name may be added if printing or saving the calculation.
For more information, click the **'Help'** button

Daily exposure m/s² A(8) | Total exposure points

**Exposure calculation by:**
**Job role:**
**Calculation date:**

### 3.6 Pre-Work Assessment

Prior to commencing the site installation works, the Site Person in Charge is to visually assess the area where the works are to be undertaken. This is to enable an understanding of the method of works to be deployed and if there are any additional site-specific hazards or risks that are required to be addressed before the works can commence:

This pre-work assessment process can be identified in the following simple steps:

- Look and see the hazards
- Assess the risk
- Take appropriate action

If a hazard or risk is identified that is too great to be captured under a Dynamic Risk Assessment, then the PWM 'Close Call' process is to be implemented and if required this is to be escalated to Northern Trains for further action.

### 3.7 Lifesaving rules

The Network Rail Life Saving Rules applicable to this work scope.

| Lifesaving Rule Icon | Description | Applicable Tasks |
|---|---|---|
|  | Always use the equipment that is fit for its intended purpose. | **All tasks** |
|  | Never undertake any job unless you have been trained and assessed as competent. | **All tasks** |
|  | Never work or drive while under the influence of drugs or alcohol. | **All tasks** |
|  | Never use a hand-held or hands-free phone, or programme any other mobile device whilst driving. | **When driving to and from site and home** |
|  | Always obey the speed limit and wear a seat belt. | **When driving** |
|  | Always be sure the required plans and permits are in place, before you start a job or go on or near the line. | **All tasks** |
|  | Always use a safety harness when working at height, unless other protection is in place. | Not Applicable |
|  | Always test before applying earths or straps. | Not Applicable |
|  | Never assume equipment is isolated – always test before touch. | **All tasks** |
|  | Never enter the agreed exclusion zone, unless directed to by the person in charge. | **During WaH works with barriered exclusion zone.** |

## 3.8 Personal Protective Equipment

The following PPE is a mandatory requirement for all staff working on the Northern Trains infrastructure.
Site team to dress appropriately for the works and to consider the below PPE requirements as station worksite areas are exposed to outside conditions.

| PPE required | Task |
|---|---|
| Hard hat: (BS EN 397 – Safety helmets must conform) | Required for all |
| High Visibility Vest with Sponsor Logo and High Visibility jacket with Sponsor Logo: (BS EN 471: 2003 Class 2 upper body clothing must conform) | Required for all |
| High Visibility Trousers: (BS EN: 471 2003 Class 1 Lower body clothing must conform) | Required for all |
| Steel toe cap boots with steel mid-sole (Not Rigger Boots): (BS EN 351-1 and 351-2) Safety Footwear must conform) | Required for all |
| Gloves BS EN388 | Required for all |
| Safety Glasses (EN166 1F CE, EN168 and EN170) | Required for all |
| Safety Goggles (EN166 1F CE, EN168 and EN170) | Grinding, Cutting, Sawing |
| Ear Defenders Standard (DIN EN 352) | When required (hammer drilling, Masonry Sawing, Wacker Plate) |

## 3.9 Competencies

The qualification certificates and cards must be readily available either copies in the site file or kept on the operative's person.
The cards must be scanned at the site induction and kept in the site induction file with the signed induction paperwork.

**Contractors**

- CSCS cards
- Trade specific qualification card
- Asbestos Awareness

**Contactors** must hold where applicable:

- PTS/Sentinel (if working trackside on the railway line)
- First Aid for the appointed first aiders

**Site Manager** must have:

- NVQ in the Construction Site Management
- SMSTS
- First Aider (if appointed as one)

# 4 Environmental and Waste Management Arrangements

## 4.1 Environmental Management Arrangements

Environmental management arrangements are systems and procedures that are put in place to minimize the environmental impact of a construction project. This can include measures such as conducting environmental assessments, implementing waste management plans, and monitoring the site for potential environmental hazards. These systems are important to ensure the project follows relevant laws and regulations.

Due to the nature of the installation works, there is an extremely low risk of impact to the environment impact to site operative's health and wellbeing, however, the following items should be briefed out at the prestart briefing.

- COSHH materials will be stored within a metal site storage container and will have their own COSHH assessment on site and use of the materials will be detailed within the Site Specific - Task Briefing Sheet.
- All COSHH assessments will be within the site file and are to be read prior to using the COSHH material.
- Biological hazards such as bird droppings, rat urine(leptospirosis)

The following environmental conditions have been considered by the management team and identified using the Pre-Construction Information as a non-issue for Manchester Oxford Road Station. However, if the site team presume there is a risk to the from the listed items below, please inform the SPiC or Site Manger immediately.

- Lead Paint
- Protected Species
- Invasive Plants

## 4.2 Heritage Building (Listed)

In the United Kingdom, listed buildings are buildings or structures that have been officially recognized as having special architectural, historical, or cultural significance. These buildings are protected by law and cannot be demolished, altered, or extended without special permission from the local planning authority.

*Manchester Oxford Rd Railway station building and platform structures, 1958-60, by Max Clendinning of British Railways' Midland Region with Hugh Tottenham of the Timber Development Association. Laminated-timber structure of three conoid shells, with hardwood strip ceilings to the shell roofs and canopies. Single-storey*.

Please review appendix 8.5 Appendix E for full details

## 4.3 Waste management arrangements

All waste will be removed from site and taken back to the PWM stores where the waste is stored until suitable quantities are ready for collection by an authorised waste disposal company. PWM UK LTD is a registered as A lower tier waste carrier, broker and dealer

**NO COMBUSTIBLE WASTE IS TO BE LEFT ONSITE OR DISPOSED OF USING STATION FACILITIES**

**General Notes**

- All waste will be segregated to ensure general waste, recyclables and electronic waste can be disposed of correctly.
- All electronic/electrical waste will be disposed of following the WEEE directive.
- Waste Transfer notes will be obtained for all waste collections and issued to the client as part of the assurance documentation.

# 5 Emergency Arrangements

## 5.1 Site Emergency Arrangements

Site emergency arrangements refer to the plans and procedures that are in place to handle emergencies that may arise on a construction site. These arrangements may include things like evacuation plans, procedures for contacting emergency services, and the allocation of roles and responsibilities among workers in the event of an emergency. PWM UK have well-developed site emergency arrangements in place to ensure that workers and others on the site are safe and that the appropriate actions are taken in the event of an emergency. This includes providing workers with training on emergency procedures and regularly conducting drills to ensure that everyone is prepared to respond in the event of an emergency.

### 5.1.1 In the event of an emergency - non railway

In the event of an accident NOT affecting the safe operation of the railway. Emergencies should be reported directly to the emergency services. Mobile phones should be used as a last resort for reporting emergencies via the '999' service as calls may be answered by an operator in a completely different area from the emergency which could result in unnecessary delays in help arriving or not arriving at all.

| Priority | Service | Number |
|---|---|---|
| Call 1 | FIRE, POLICE, AMBULANCE | 999 (Mobile 112) |
| Call 1 | British Transport Police | 0800 40 50 40 |
| Call 2 | Northern Rail Helpline | 0800 200 6060 |
| Call 3 | PWM Ray Shepley | 07855408233 |
| Call 4 | PWM David Separovich | 07976 199 060 |

### 5.1.2 In the event of an emergency - railway

In the event off a railway incident and the trains need to be stopped the following process will be followed,

- One operative will stand at the end of the platform with both arms above his head and wave to the trains to stop asap.
- One member off staff will contact the station supervisor or NTL Helpline **0800 200 6060**.

  The following is required Information when speaking with Emergency Services
  - Name and company,
  - Location of the incident,
  - Emergency type,
  - Details of the emergency,
  - Do emergency services need to attend

In the event that the power supply needs switching off the Station Supervisor will be informed immediately who will contact the relevant person, the signaller will also be contacted asap, so that drivers etc can be informed.

Secondly, the accident or incident will then be reported as detailed below in section 5.1.3.

### 5.1.3 Accident and Incident reporting

All accident and incidents will be notified, in the first instance and immediately, to the local station staff or for out of hours, the use the details below must be contacted. Following this, PWM UK LTD project management team must be notified.

The following contact numbers are to be used for the accident & incident reporting:

| Name | Company & Role | Phone Number |
|---|---|---|
| Alex Murphy | PWM UK Ltd – Managing Director | 07500 027 133 |
| David Separovich | PWM UK Ltd – Project Manager | 07976199 060 |
| Robert Cullen | PWM UK Ltd - CEO | 07894 546 883 |

PWM UK Ltd will investigate any accident or incident and will look at preventive measures to prevent recurrence.

Should emergency services be required, the station's emergency plan will be enacted.

Once the emergency services have been requested, Northern Trains LTD will then be informed.

Where health and safety issues are identified on site, these will be escalated immediately to station staff and the operative for onward communication with the Northern Trains point of contact. These will be recorded and if deemed appropriate, these will also be raised via the Network Rail Close Call system.

### 5.1.4 First aid arrangements

At least 1 member of each team will be a qualified 3-day first aider and an appropriately sized first kit will be available on site. For minor injuries the operative will be treated onsite and evaluated whether work can continue or must stop, and the situation escalated.

***Named First Aiders are as follows:***

*Chris Carter*
*David Evans*
*Jeff Linsdell*
*Lucian Volentiru*
*Max Gilleard*
*Michael Bratin*
*Pearce Griffiths*
*Ray Shepley*
*Richard Scott*
*Thomas Cullen*

### 5.1.5 Evacuation arrangements

If evacuation from the station is required, all staff will go the designated Staff Assembly Point (SAP), the SAP location will be briefed to all staff at the beginning of each shift and the staff will sign to say they have received and understood the briefing.
If an insensible/unconscious person requires relocating to a place of safety, if possible, notify the station staff and request use of the station stretcher.
The local hospital location will also be briefed to staff at the beginning of each shift with route direction in 8.2 Appendix B.
A roll call will be taken at the SAP and the emergency services informed that all staff are accounted for.
No person will return to the worksite until informed it is safe to do so by the Site Manager. If emergency services have attended site, they will inform the site manager when it is safe to return, if at all, and the Site Manager will then de-brief the site team.

### 5.1.6 Fire safety arrangements

Hot Works are not required as part of this scope of works, however as a precaution, a fire point will be provided on site consisting of:

- 1 x 9lt AFFF
- 1x 5kg Co2 extinguisher
- Fire Blanket

However additional care will be taken to prevent dust to activate existing fire alarm detectors which are near to the worksite. If fire alarm detectors are deemed to be too close, a fire alarm isolation will be requested and approved prior to re-visiting this location. All details will be within the Task Briefing Sheet.

Should a fire break out, all personnel will evacuate the area and summon the emergency services. Operatives should only attempt to tackle the fire if train in the used of Extinguishers and are confident they can safely use them.

**NOTE**: No smoking is permitted on site.

### 5.1.7 Security arrangements

All local station procedures are to be followed at all times.
Signing in and out must be done following the manned and unmanned station procedure detailed in section 6.2.
In the event of observing a suspicious activity or item on the Northern Trains infrastructure the operative will report the activity or item immediately to the Northern Trains representative or British Transport Police.
If access to the station offices is required, they must not be left unlocked and unattended for any length of time.

The worksite will be segregated from the public utilising chapter 8 barriers, these will be secured at all times and will be removed at the completion of each shift. No equipment will be left on site unattended.

**NOTE:** Blue Chapter 8 barriers are to be used on platforms and locations which are visible by oncoming train, this is to mitigate the risk of train operators confusing configure the usual red barriers with red signals.

### 5.1.8 Summoning emergency services

Emergency services will be contacted by the Site Manager or Station Staff calling 999 from a landline or 112 from a mobile phone. Landlines are the preferred option to ensure the call is routed to the correct emergency services area.
**NOTE:** Mobile phones call may cause the actual location and cellular tower triangulation location to be different
Either station staff or site team will meet the emergency services at either the RVP or the SAP to provide emergency services with situation briefing.

All of the relevant emergency contact details for utility providers are listed below.

| Name | Service | Phone Number | Emergency |
|---|---|---|---|
| BT | Telecoms | 0800 023 2023 | |
| Electricity North West Limited | Electricity Supplier | 08001954141 | 08001954141 |
| Northern Powergrid | Electricity Supplier | 105 | |
| SP Energy Networks | Electricity Supplier | 105 | |
| GTC | Gas & Electricity Supplier | 0800 032 6990 | |

| | | | |
|---|---|---|---|
| Gas Emergency Contact Number | British Gas | 0800 111 999 | |
| Electric Emergency Contact Number | UKPN | 08003163105 | |
| Northern Gas Network | Gas Supplier | 0800 111 999 | |
| Severn Trent | Water Supplier | 0800 783 4444 | |
| United Utilities | Water Supplier | 0345 672 3723 | |
| Yorkshire Water | Water Supplier | 0800 573 553 | |
| Scottish and Southern Electricity Networks | Electricity Supplier | 08000483516 | 08000727282 |
| EU Networks Fiber UK Limited | Fibre Network | 02031788003 | 02031788003 |
| Zayo Group UK Ltd c/o JSM Group Ltd | Fibre Infrastructure ducts and equipment | 01992 655 919 | 0800 169 1646 |
| Last Mile | Utility Network and Infrastructure | plantenquiries@lastmile-uk.com | 0800111999 |

In Addition, the emergency number being called, the following PWM UK Ltd contacts should be notified as a minimum,

The following contact details can be used:

| Name | Company & Role | Phone Number |
|---|---|---|
| David Separovich | PWM UK Ltd – Project Manager | 07976 199060 |
| Alex Murphy | PWM UK Ltd – Manager Director | 07500 027 133 |
| Robert Cullen | PWM UK Ltd - CEO | 07894 546883 |

### 5.1.9 Asbestos

Please review the Asbestos Management Survey Report detailed in Appendix C and where applicable, the Refurbishment & Demolition Survey report in Appendix D

Station has been classified Light Green, for **Low risk**. This is due to asbestos in the following locations

- **Platform 2&3 Station Retail Staff –** Cement Radiator Back Panel
- **Platform 2&3 DB Cabinet –** Cement Cables Sleeves to Base
- **Switch Room –** Woven Material within live electrical board

- **Pizza Shop Lobby –** Insulating Board Panel above door within boxing
- **Pizza Shop –** Insulating Board Panel above Counter within Boxing
- **Electrical Switchroom 2** – Flash Guards (Presumed)
- **Electrical Switchroom 2** – Cement cable sleeves running through rear wall
- **Pumpkin (SHOP) Electrical Cupboard** – Bill Electrical Unit
- **Ticket Office Electrical Cupboard -** Woven Material within live electrical board
- **Platform 5 Building Roof –** Roof Felt
- **Ticket Office Building Roof –** Roof Felt
- **Boiler House Roof –** Roof Felt

In the event that any ACM is suspected the work area will be cordoned off and work in that area suspended until competent advice has been sort. Warning signage will be installed at the entrance to the suspected ACM The area will then be assessed by a competent individual and identification is confirmed, the report will be forwarded to NTL for instruction to remove, contain or encapsulate the suspected ACM.
Disposal of the ACM will be carried out by a competent contractor, Waste transfer notes will be produced and submitted to NTL. No works will continue in the area until instruction is received from the management team

### 5.1.10 Utilities

Buried Services drawings will be used to determine if utilities are running through the location. However, a permit to dig system will be used before any works are undertaken. As a part of the Permit to Dig process a C.A.T Scan will be carried out by a trained operative to determine if there is a likelihood of striking any utilities.

Station Utilities drawings can be found in appendix F.

### 5.1.11 Spill Kits

Spill kits will be available on site.

# 6 Work Package Arrangements

## 6.1 Site Layout

The site layout drawing can be found in 8.5 Appendix E, the station layout drawing will detail the Staff Assembly Point (SAP), Rendezvous Point (RVP), access & egress routes and location of welfare.

## 6.2 Access and Egress

Access and egress routes are detailed within the above-mentioned site layout drawing. This will include ticket office location and walking routes to and from site and to the welfare.

### 6.2.1 Access Permits

Access to the station and to station grounds to carry out works will be only permitted if an access request has been requested by the PWM UK and approved by NTL. This process requires a ten-day turnaround and must reference an approved safe system of work. A copy of the access permit will be kept in the site file.

### 6.2.2 Signing In At Station

MAnchester Oxford Rd is a part time staffed station with the station staff being available during the below ticket office hours. When the station is staffed, then the Person in Charge of the Works is to follow Staffed Station Access detailed in Section 6.2.3. The majority of the time will be outside these hours or if the station is unstaffed due to unforeseen circumstances the Un-Staffed Station Access detailed in Section 6.2.4 must be followed.

**Site Station Address**
Manchester Oxford Road station,
Station Approach,
Oxford Road, Manchester,
Greater Manchester,
M1 6FU

**Ticket Office hours**
Monday to Saturday: 06:30 - 22:40
Sunday: 07:30 - 22:00

**Station Open hours**
Open 0700-2200 7 days per week

**Customer Support**
NRL Helpline – 08002006060

### 6.2.3 Staffed Station Access

During ticket office open hours Staffed station rules apply, then the Person in Charge of the Works is to sign in at the ticket office and advise the station staff of the works that are to commence. On completion of works the Site Person in Charge will offer up the area for inspection to the station staff to confirm it has been left is a suitable state and then sign out.

### 6.2.4 Non-Staffed Station & Part Time Station Access

If the station being accessed out of office hours and then non-staffed station rules apply, then the Person in Charge of the Works is to sign in at the nearest Staffed station or with the Station Group Manager.
On completion of works the Site Person in Charge will sign out again at the same station or notify the Station Group Manager.

### 6.2.5 Denied Access to Station

If access to any station is denied by the Station staff, then the Person in Charge of the Works is not to disagree with station staff and are to immediately depart site and report back to PWM Project Manager and Northern Trains Project Manager that the site team was denied access due to the provided reason given by station staff.

### 6.2.6 Working Alone

There will be NO lone working for this scope of works.

**NOTE**: Lone working is permitted for surveying only, and this is covered under a separate WPP

## 6.3 Welfare

Manchester Oxford Rd station has a station carpark adjacent to the station which will be used for the site teams company van. The use of station welfare facilities has been agreed by station staff and the station facilities MUST be always kept clean or this privilege will be revoked. There are both staff toilet facilities and general public toilet facilities for the contractor to be used. The contractor must show consideration of the staff toilets and messing facilities.

## 6.4 Rail Traffic Management

Not applicable

**NOTE:**

- Applicable if the overhead wires (AC) within the work limits will be treated as live at all times and all staff or equipment will be over 2.75m away at all times.
- Third Rail – the operatives will not encroach within 1m of any conductor rails.
- Applicable if working within 1.25m of platform edge

## 6.5 Road Traffic Management

Manchester Oxford Rd station has a station carpark adjacent to the station which will be used for the site teams company van, permission and registration must be registered with the Station Supervisor.

The site access will consider safety risks from construction traffic, local public right of way routes and how the site adjacent areas are used by the members of the
public.

- Reversing of delivery vehicles must be prohibited.
- The location of work vans must not impact traffic flow.
- Trained Banks man is required.
- Parking/waiting vehicles on curbs that might cause safety concerns to the traffic must be prohibited.
- All public routes must be well maintained and included in the Site Manager's check.
- Engines are to be switched off where possible in near-proximity residential areas

## 6.6 Interfacing with the public

It is important to be aware of the potential risks and hazards that can affect the public. This includes ensuring that the site is properly fenced/barriered off and that adequate signage is in place to warn people of the dangers. It's also important to have safety protocols in place to protect the public from falling debris, loud noises, and other potential hazards. Additionally, it's important to be proactive in addressing any concerns or complaints from members of the public. This may involve providing information about the construction project, addressing any concerns about noise or other disruptions, and taking steps to mitigate any negative impacts on the community.
Finally, it's important to be respectful and considerate of the people who live and work near the construction site, and to do everything possible to minimise the impact of the project on their daily lives.

The following points should be noted:

- Avoid taking photos where faces of members of the public can be seen. If asked to delete a photo the operative will do so and retake the photo at later time when the area is unoccupied.
- If questioned on train departures/arrivals, operatives will state that they do not work for the Northern Rail and should direct the member of the public towards the nearest station staff.
- Busy station areas at peak times should be avoided.
- Abusive passengers – if the operative is approached by any member of the public in an aggressive manner, then the operative is to not get into any form of verbal communication with the passenger and remove themselves from the situation.
  If this occurs, it is to be immediately raised to the PWM Project Manager who will advise Northern Rail of the incident and seek further advise from Northern Rail.

### 6.7 Public & Data Protection Statement

If an operative is challenged by a member of the public regarding data privacy, the following statement may be used:

*"The privacy and security of the Personal Data collected from you is a priority PWM UK Ltd. It is also important to us that you understand how we handle this data. PWM UK Ltd is conducting this survey in order to assess the accessibility of rail stations across the UK.*
*This data is held in a secure data centre before it is securely deleted. PWM UK Ltd will not retain your Personal Data any longer than is necessary for the purposes above.*
*All data will be deleted after 2 years.*
*If you have any questions about how this data is processed or about your rights, please contact datacompliance@pwmukltd.com".*

### 6.8 WPP / TBS Briefing Arrangements

All staff will receive a site induction prior to any works commencing. All operatives will be briefed on the works requirements and will sign the register to confirm understanding.

The individual nominated as lead for the works will be responsible for briefing all staff on the safety arrangements which will be detailed in this WPP.

All personnel must be given a full briefing applicable to the operations they are to carry out, and other works on-going. Opportunity must be given for personnel to ask questions on the arrangements and checks on understanding are made by the briefer asking questions of the personnel involved.

| Briefing Sign off Sheet | |
|---|---|
| Safe System of Work BRIEFING SHEET | |
| Document Number: **P1023-PWM-NTL-WPP-01** | |
| Date: | Talk Given By: |

Attendees
I have been briefed or read and understood this method statement and will not deviate from it.

| | Name | Signature | Date |
|---|---|---|---|
| 1 | | | |
| 2 | | | |
| 3 | | | |
| 4 | | | |
| 5 | | | |
| 6 | | | |
| 7 | | | |
| 8 | | | |
| 9 | | | |
| 10 | | | |
| 11 | | | |
| 12 | | | |

**Operative Feedback and Suggestions**
If there are any comments or ideas on safer methods of working, then write them here and discuss.

# 7 Hand Over and Hand Back Arrangements

## 7.1 Hand over and hand back arrangements

Not applicable for these works.

Each CCTV camera will be replaced and commissioned at the end of each shift, to ensure the station maintains its current CCTV coverage for the safety and security of the public & staff.

Where impracticable to maintain CCTV coverage on a single or small number of cameras due to site constraints ie existing cable routes blocked or over capacity. The station manager must be informed and agree prior to taking cameras offline.

On completion of a shift or the planned works, the site will be cleared of all staff and equipment and waste and then the Site Person In charge will notify the Station staff or sign out with nearest manned station.

# 8 APPENDICES – Supporting information

Appendix A – CCTV Installation Instructions
Appendix B – Hospital Maps
Appendix C – Asbestos Management Survey Report (ARMS)
Appendix D – Refurbishment & Demolition Survey Report
Appendix E – Listed Building
Appendix F – Utilities Layout Drawings
Appendix G – Site Setup & Arrangements
Appendix H – COSHH Assessments
Appendix I – Risk Assessments

## 8.1 Appendix A – CCTV Installation Instructions

## 8.2 Appendix B – Hospital Maps

## 8.3 Appendix C – Asbestos Management Survey Report (ARMS)

## 8.4 Appendix D – Refurbishment & Demolition Survey Report (R&D)

Not Applicable

## 8.5 Appendix E – Listed Building

## 8.6 Appendix F – Utilities Layout Drawings

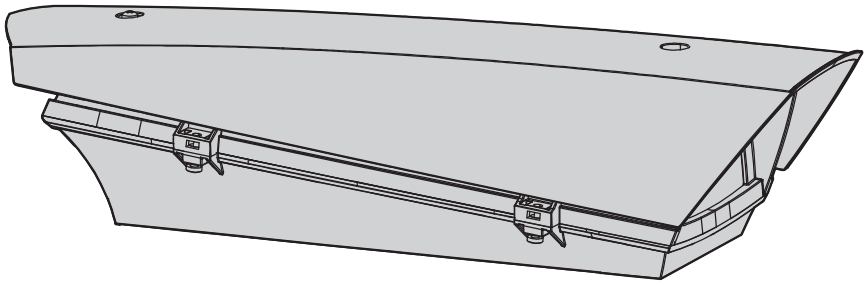
## 8.7 Appendix G – Site Setup & Arrangements

## 8.8 Appendix H – COSHH Assessments

## 8.9 Appendix I – Risk Assessments

# PUNTO Hi-PoE

**Technopolymer housing for IP camera**



**EN English** - Instructions manual

# Contents


**1 About this manual ..... 3**
1.1 Typographical conventions ..... 3
**2 Notes on copyright and information on trademarks ..... 3**
**3 Safety rules ..... 3**
**4 Identification ..... 4**
4.1 Product description and type designation ..... 4
4.2 Product markings ..... 4
**5 Preparing the product for use ..... 5**
5.1 Unpacking ..... 5
5.2 Contents ..... 5
5.3 Safely disposing of packaging material ..... 5
5.4 Preparatory work before installation ..... 5
5.4.1 Attaching the bracket ..... 5
**6 Assembly ..... 5**
6.1 How to open the housing ..... 5
6.2 Cable glands assembly ..... 5
6.3 Fixing the sunshield ..... 6
**7 Installation ..... 6**
7.1 Fixing of housing to support ..... 6
7.2 How to install the camera ..... 6
7.3 Ethernet cable installation ..... 7
7.4 Connection of the PoE power supply board ..... 7
**8 Configuration ..... 7**
8.1 Absorbed power configuration ..... 7
8.2 Operating status ..... 8
8.3 Closing the housing ..... 8
**9 Cleaning ..... 8**
9.1 Window and plastic cover cleaning ..... 8
**10 Disposal of waste materials ..... 8**
**11 Technical data ..... 9**
11.1 General ..... 9
11.2 Mechanical ..... 9
11.3 Electrical ..... 9
11.4 Environment ..... 9
11.5 Certifications ..... 9
**12 Technical drawings ..... 10**

# 1 About this manual

Before installing and using this unit, please read this manual carefully. Be sure to keep it handy for later reference.

## 1.1 Typographical conventions

**DANGER!**
**High level hazard.**
**Risk of electric shock. Disconnect the power supply before proceeding with any operation, unless indicated otherwise.**

**CAUTION!**
**Medium level hazard.**
**This operation is very important for the system to function properly. Please read the procedure described very carefully and carry it out as instructed.**

**INFO**
**Description of system specifications.**
**We recommend reading this part carefully in order to understand the subsequent stages.**

# 2 Notes on copyright and information on trademarks

The quoted names of products or companies are trademarks or registered trademarks.

# 3 Safety rules

**CAUTION! The device must be installed only and exclusively by skilled technical personnel.**

**CAUTION! The electrical system to which the unit is connected must be equipped with a 10A max automatic bipolar circuit breaker. This circuit breaker must be of the Listed type. The minimum distance between the contacts must be 3mm (0.1in). The circuit breaker must be provided with protection against the fault current towards the ground (differential) and the overcurrent (magnetothermal).**

- The manufacturer declines all responsibility for any damage caused by an improper use of the appliances mentioned in this manual. Furthermore, the manufacturer reserves the right to modify its contents without any prior notice. The documentation contained in this manual has been collected with great care. The manufacturer, however, cannot take any liability for its use. The same thing can be said for any person or company involved in the creation and production of this manual.
- Before starting any operation, make sure the power supply is disconnected.
- Do not use cables that seem worn or old.
- Never, under any circumstances, make any changes or connections that are not shown in this handbook. Improper use of the appliance can cause serious hazards, risking the safety of personnel and of the installation.
- Use only original spare parts. Non-original spare parts could cause fire, electrical discharge or other hazards.
- Before proceeding with installation, check the supplied material to make sure it corresponds to the order specification by examining the identification labels (4.2 Product markings, page 4).

- This device was designed to be permanently installed on a building or on a suitable structure. The device must be installed permanently before any operation.
- When installing the device, comply with all the national standards.
- Any device which could be installed inside the product must comply with the current safety standards.
- For all connections, use cables that are able to withstand temperatures of at least 75°C (167°F).
- Power supply to the product must be exclusively provided by the PoE cable (Power over Ethernet).
- Use power supplies compliant with regulations IEEE 802.3at/af and 60950-1/62368-1.
- The product must be fastened with suitable equipment. The fastening means must guarantee the mechanical seal when a force equal to at least 4 times the weight of the device is applied.

# 4 Identification

## 4.1 Product description and type designation

The PUNTO Hi-PoE housing exploits the PoE and Hi-PoE technology in an optimal way, using the power provided by the Ethernet cable as the sole source of electricity to power the network camera along with heating/demisting.

PUNTO Hi-PoE provides high reliability and flexibility of the network installation and simplifies installation operations with important cost reduction.

PUNTO Hi-PoE can be configured via a dip switch according to the PoE or Hi-PoE standards depending to the system requirements.

Very easy to install thanks to the side opening system that allows the full access to the camera, lenses and all internal connections.

The front is designed to offer protection from UV rays and atmospheric agents.

## 4.2 Product markings

See the label attached to the product.

# 5 Preparing the product for use

**Any change that is not expressly approved by the manufacturer will invalidate the guarantee.**

## 5.1 Unpacking

When the product is delivered, make sure that the package is intact and that there are no signs that it has been dropped or scratched.

If there are obvious signs of damage, contact the supplier immediately.

Keep the packaging in case you need to send the product for repairs.

## 5.2 Contents

Check the contents to make sure they correspond with the list of materials as below:

- Housing
- Housing equipment
- Instructions manual
- Desiccant bag

## 5.3 Safely disposing of packaging material

The packaging material can all be recycled. The installer technician will be responsible for separating the material for disposal, and in any case for compliance with the legislation in force where the device is to be used.

When returning a faulty product we recommend using the original packaging for shipping.

## 5.4 Preparatory work before installation

### 5.4.1 Attaching the bracket

**The product must be fastened with suitable equipment. The fastening means must guarantee the mechanical seal when a force equal to at least 4 times the weight of the device is applied.**

# 6 Assembly

## 6.1 How to open the housing

Loosen the 2 screws on the side, turn the cover and the upper half of the body about the opening hinge axis.

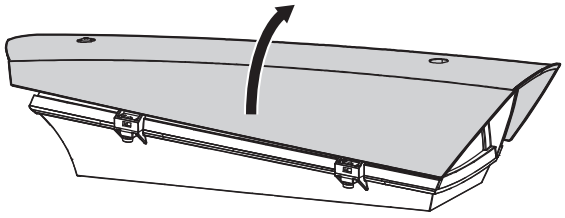


**Fig. 1**

## 6.2 Cable glands assembly

The cable glands are suitable for cables with a diameter between 5mm and 10 mm.

Fix the cable glands as shown in the figure.

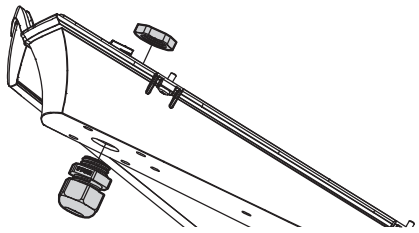


**Fig. 2** Support with external cable passage..

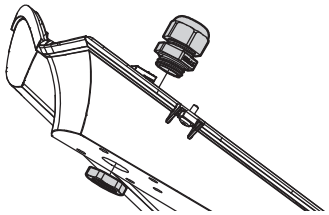


**Fig. 3** Support with internal cable passage..

## 6.3 Fixing the sunshield

It's possible to fix the sunshield to the housing using screws, washers and spacers provided.

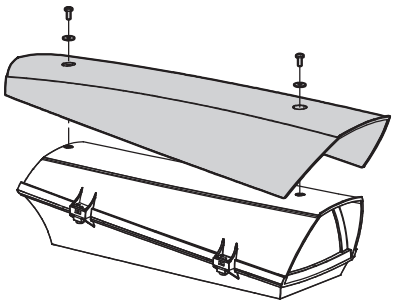


**Fig. 4**

# 7 Installation

## 7.1 Fixing of housing to support

**Apply a thread-locker on the holes of the screws (Loctite 243®).**

Fix the housing to the support using the supplied screws.

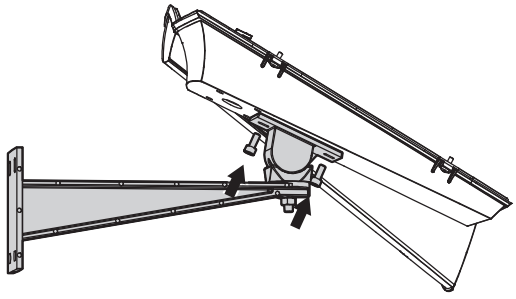


**Fig. 5** Fixing on support with external cable passage.

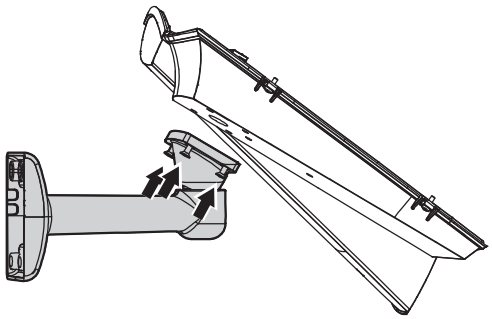


**Fig. 6** Fixing on support with internal cable passage.

## 7.2 How to install the camera

Fasten the camera with the 1/4" screw (03). To position the camera and lens correctly, if necessary, use the supplied spacers. (04).

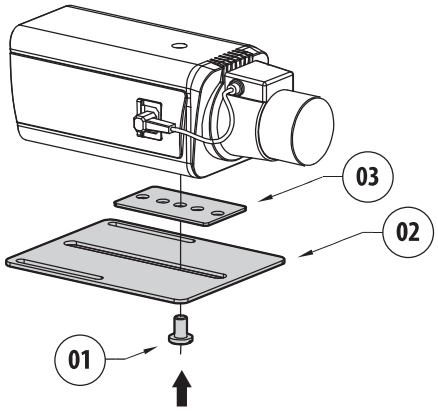



**Fig. 7**

Fasten down the adjustable slide in the correct position using the appropriate screws.

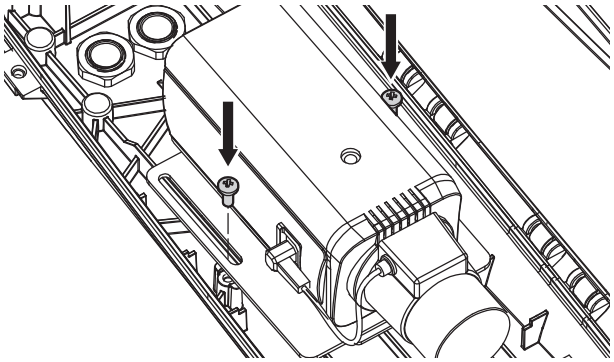


**Fig. 8**

## 7.3 Ethernet cable installation

Insert the Ethernet cable in the gasket and block it as shown in figure.

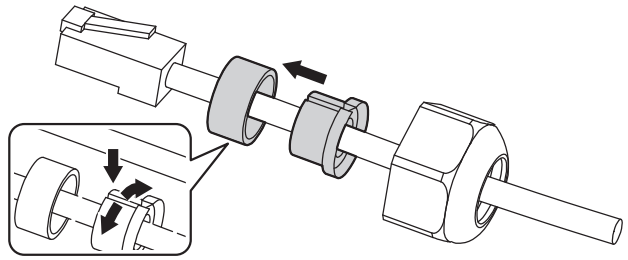


**Fig. 9**

**Pay attention to the fixing. Tightening torque: 7Nm.**

Pass the cable with connector RJ45 (05) through the M20 cable gland (02). Tighten the cable gland plug (06).

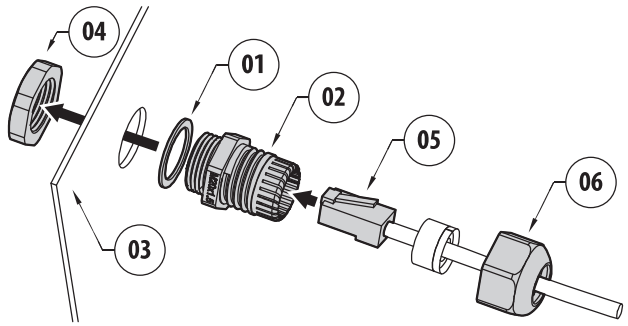



**Fig. 10**

## 7.4 Connection of the PoE power supply board

Connect the PoE cable from the Power Injector to the J1 connector.

Connect the camera to the J2 connector.

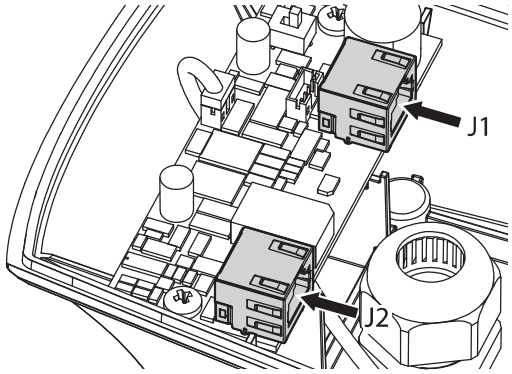



**Fig. 11**

# 8 Configuration

## 8.1 Absorbed power configuration

Before powering the device, you must set the maximum power consumption of the housing operating on dip switch SW1.

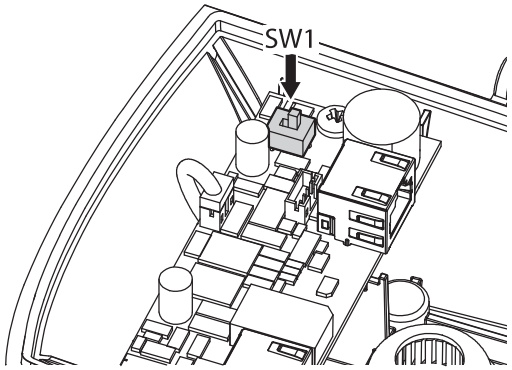



**Fig. 12**

| ABSORBED POWER CONFIGURATION | |
|---|---|
| **SW1** | **Maximum power** |
| POE | PoE, class 3 (13W max) |
| POE+ | Hi-PoE, class 4 (25W max) |

**Tab. 1**

## 8.2 Operating status

The LEDs shown in the figure allow to check the product's operating status.

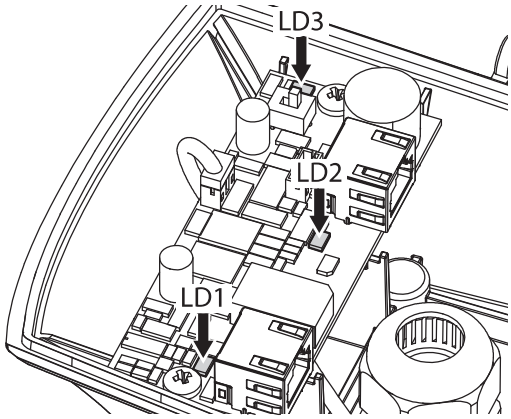



**Fig. 13**

Refer to the table to identify the operating status.

| OPERATING STATUS | | |
|---|---|---|
| **LED** | **LED Status** | **Apparatus Status** |
| LD1 (Camera) | Off | The camera is not connected |
| | On | The camera is correctly powered |
| | 1 flashing | The camera has a low identification resistance |
| | 2 flashings | The camera has a high identification resistance |
| | 5 flashings | The camera has an excessive energy consumption |
| | 9 flashings | The camera requires more energy than the available |
| LD2 (Power supply) | Off | The device is not powered |
| | On | The device is correctly powered |
| LD3 (Heater) | Off | Heating is inactive |
| | On | Heating is active |

**Tab. 2**

## 8.3 Closing the housing

Take the dessicant salt bag out of its pack and insert it into the product. At the end of the installation close the housing.

# 9 Cleaning

## 9.1 Window and plastic cover cleaning

**Avoid ethyl alcohol, solvents, hydrogenated hydrocarbide, strong acid and alkali. Such products may irreparably damage the surface.**

We recommend using a soft cloth with neutral soaps diluted with water or specific products to clean the glasses lenses.

# 10 Disposal of waste materials

**This symbol mark and recycle system are applied only to EU countries and not applied to the countries in the other area of the world.**

Your product is designed and manufactured with high quality materials and components which can be recycled and reused.

This symbol means that electrical and electronic equipment, at their end-of-life, should be disposed of separately from your household waste.

Please dispose of this equipment at your local Community waste collection or Recycling centre.

In the European Union there are separate collection systems for used electrical and electronic products.

# 11 Technical data

## 11.1 General

Entirely made of technopolymer, RAL9002 colour

Stainless steel external screws

## 11.2 Mechanical

Cable glands: 1xM20

Glass window (WxH): 60/95x63mm (2.4/3.7x2.5in)

Internal usable area (WxH): 70x70mm (2.7x2.7in)

Internal usable length: 250mm (9.8in)

Unit weight: 0.8kg (1.7lb)

## 11.3 Electrical

Power absorbed in input/Available power for camera (selectable with dip-switch)

- PoE input Class 3 (13W): PoE camera Class 2 (7W)
- Hi-PoE input Class 4 (25W): PoE camera Class 3 (13W)

Data line: 10/100Base-T

Heater

- PoE input Class 3: 3W, Ton 15°C±3°C (59°F ±5°F), Toff 22°C±3°C (77°F±5°F)
- Hi-PoE input Class 4: 7W, Ton 15°C±3°C (59°F ±5°F), Toff 22°C±3°C (77°F±5°F)

Demisting: 1W

Compatible with IEEE 802.3af, IEEE 802.3at/PoE Plus

## 11.4 Environment

Indoor/Outdoor

Operating temperature with heating: From -20°C (-4°F) a +60°C (140°F)

Chemical agents resistance

- High resistance: basics, alcohols, gas, hydrocarbon
- Good resistance: Organic acids, inorganic acids, oils
- Low resistance: Solvents

## 11.5 Certifications

Electrical safety (CE): EN60950-1, EN62368-1, IEC62368-1

Electromagnetic compatibility (CE): EN50130-4, EN61000-6-3

Outdoor installation (CE): EN60950-22, IEC 60950-22

IP protection degree: EN60529, IP66

UL certification: cULus Listed (TYPE 4X)

EAC certification

# 12 Technical drawings

**The dimensions of the drawings are in millimetres.**

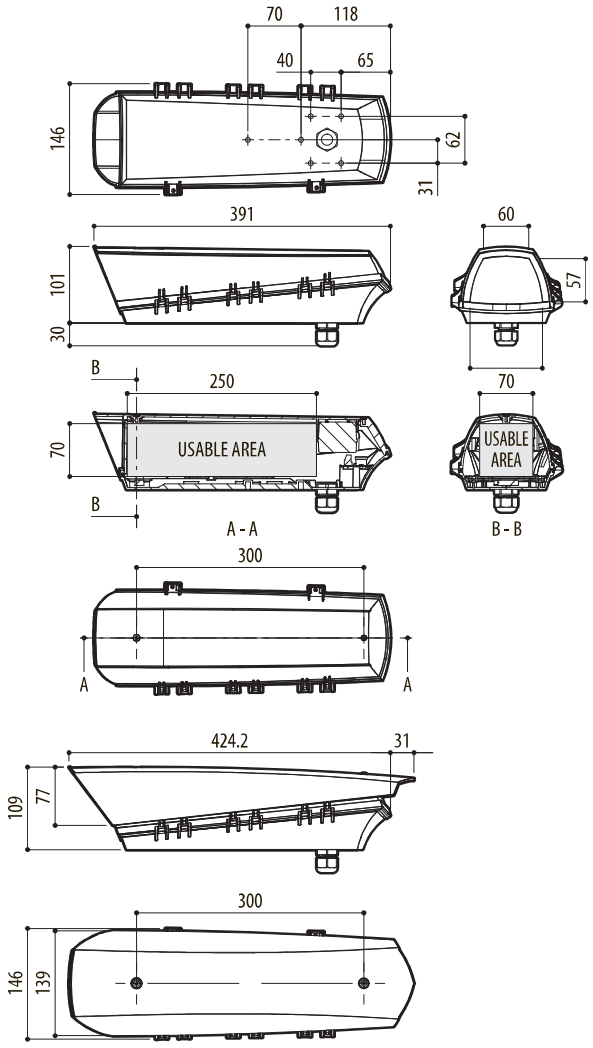



**Fig. 14** PUNTO Hi-PoE.

**Headquarters Italy** VIDEOTEC s.r.l.
Via Friuli, 6 - I-36015 Schio (VI) - Italy
Tel. +39 0445 697411 - Fax +39 0445 697414
Email: info@videotec.com
www.videotec.com

WISENET

# NETWORK CAMERA

## Quick Guide

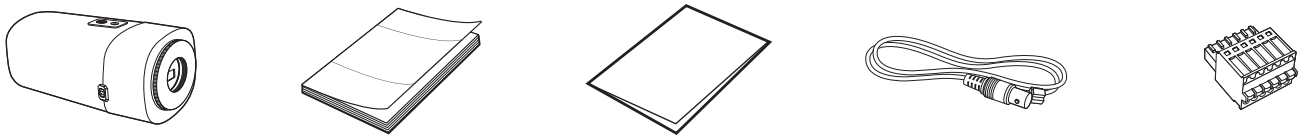
XNB-6000/XNB-8000

CE

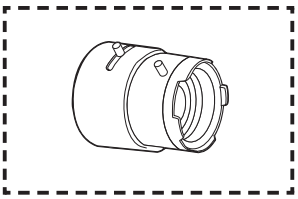
# COMPONENT

As for each sales country, accessories are not the same.

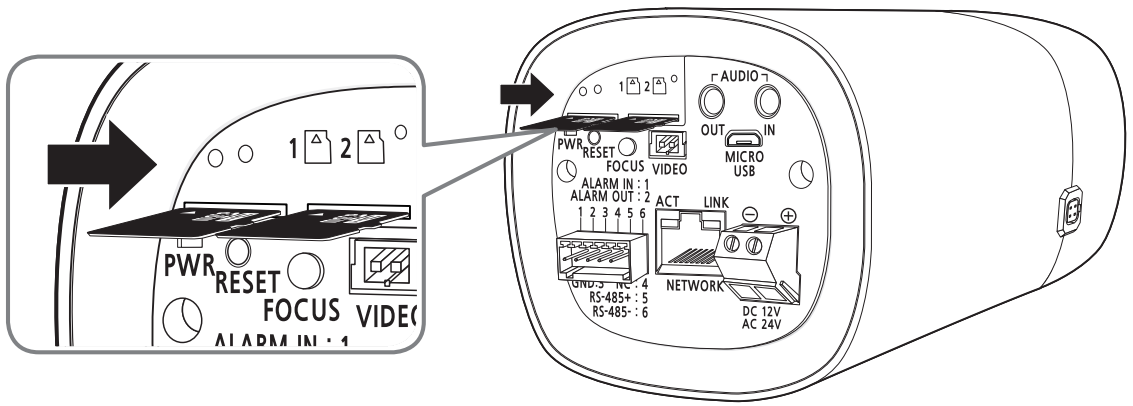
- XNB-6000/XNB-8000

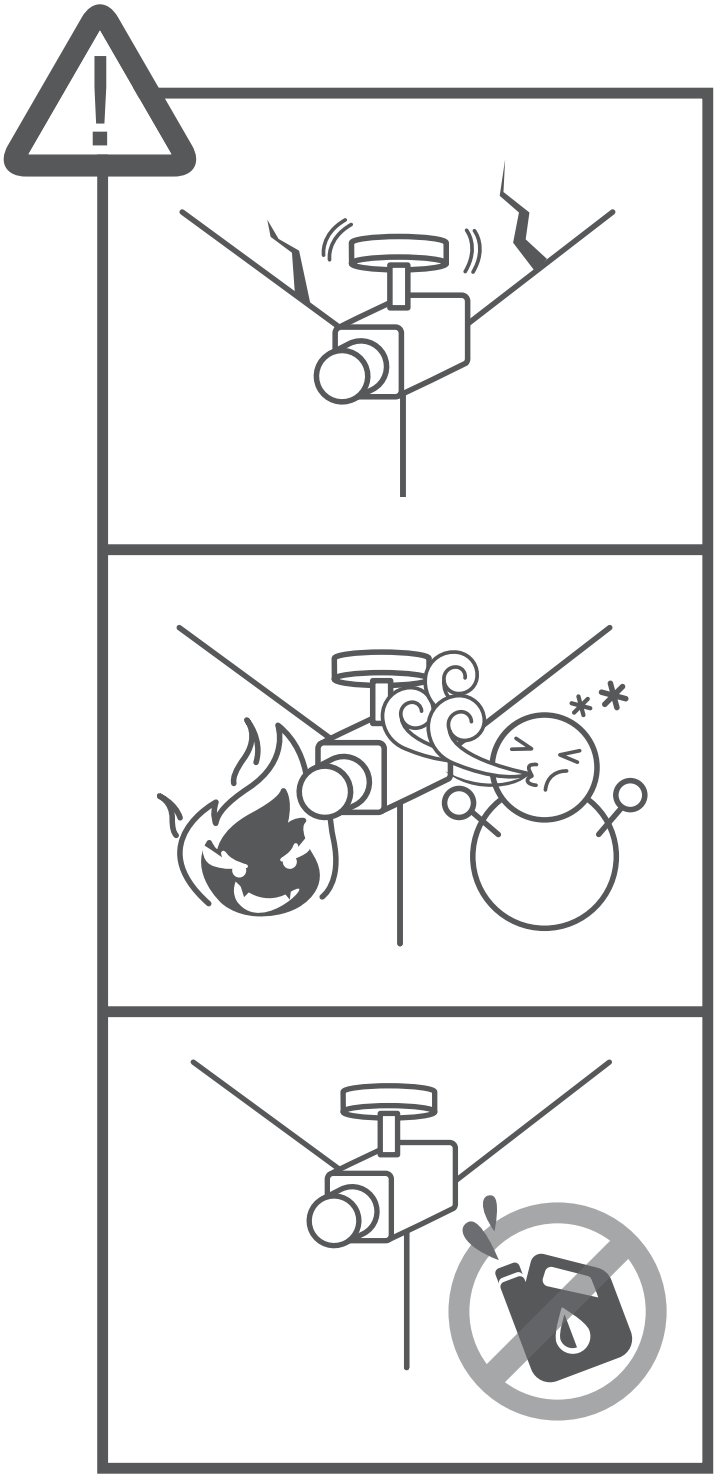


Options (not included)



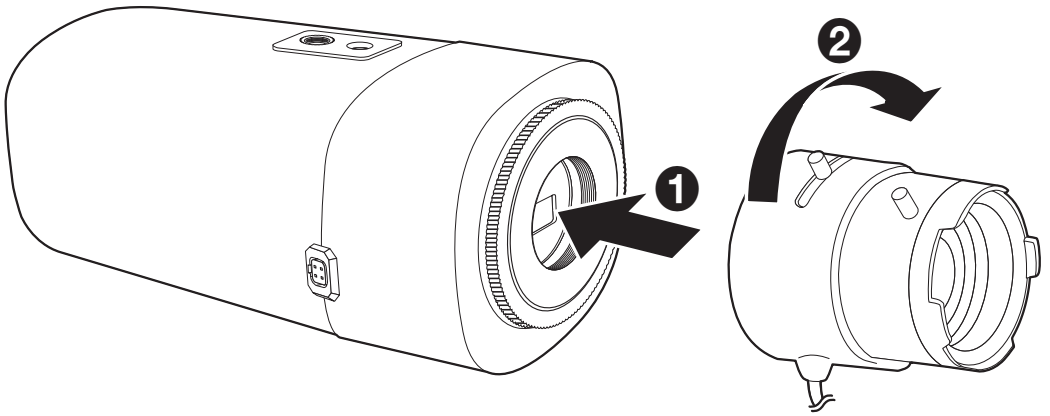
- Not Included : SD CARD

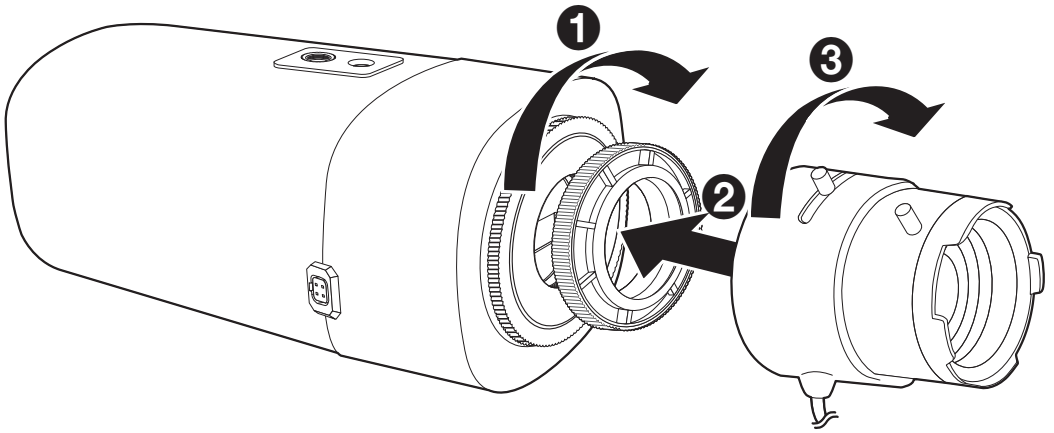




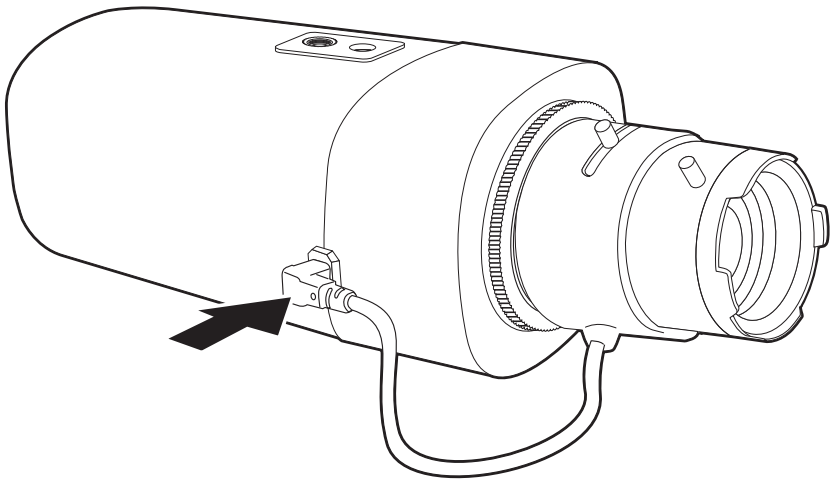
# INSTALLATION

## 1-1

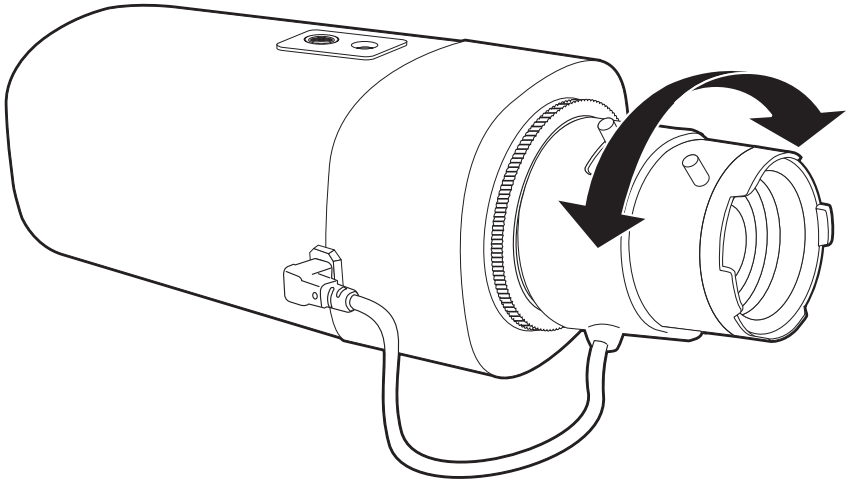


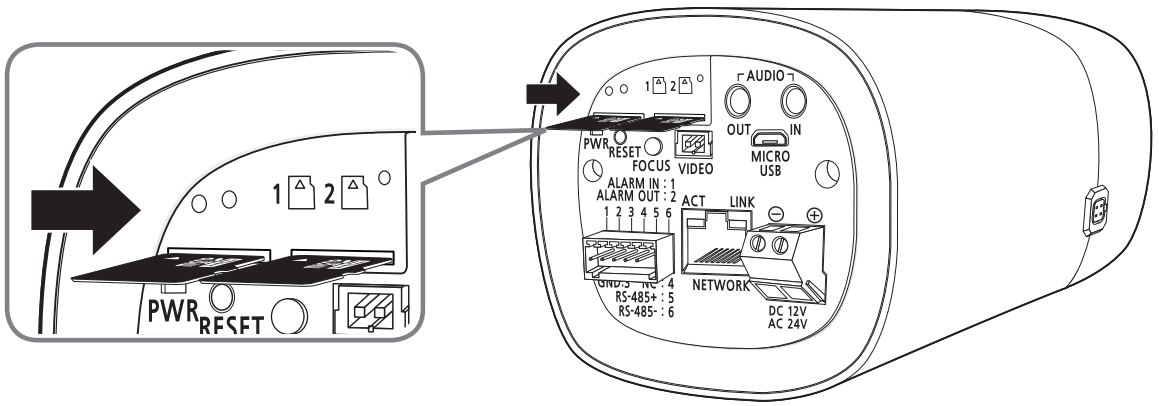
## 1-2

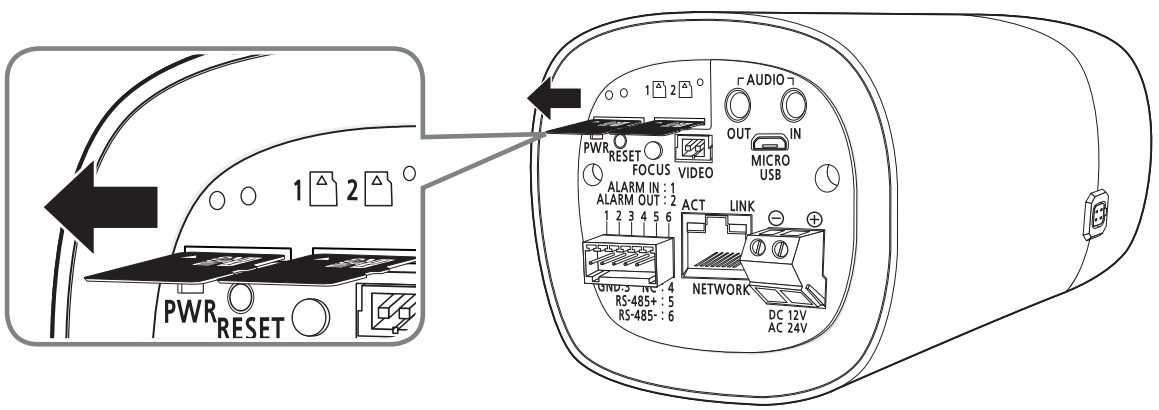


## 1-3



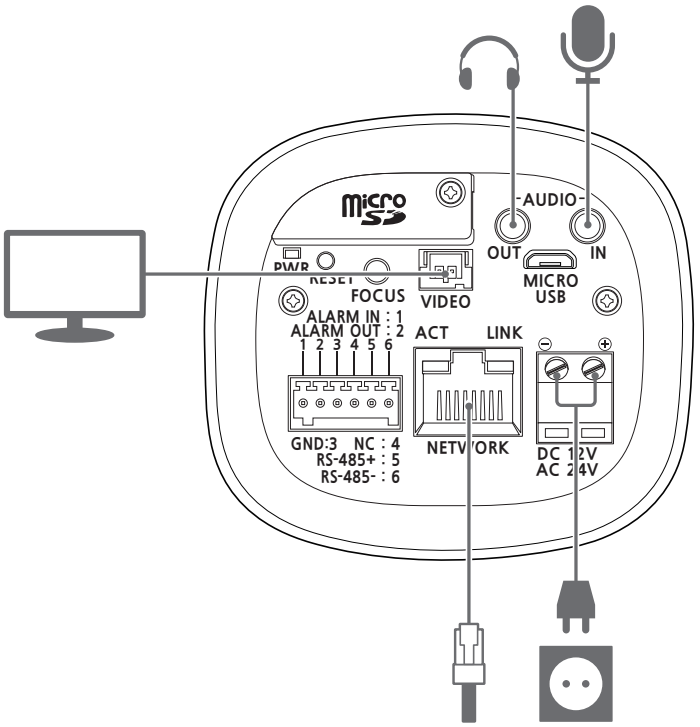
1-4


1 2
PWR
RESET
AUDIO
OUT
IN
MICRO USB
FOCUS
VIDEO
ALARM IN : 1
ALARM OUT : 2
1 2 3 4 5 6
ACT
LINK
RS-485+ : 5
RS-485- : 6
NETWORK
DC 12V
AC 24V


1 2
PWR
RESET
AUDIO
OUT
IN
MICRO USB
FOCUS
VIDEO
ALARM IN : 1
ALARM OUT : 2
1 2 3 4 5 6
ACT
LINK
RS-485+ : 5
RS-485- : 6
NETWORK
DC 12V
AC 24V

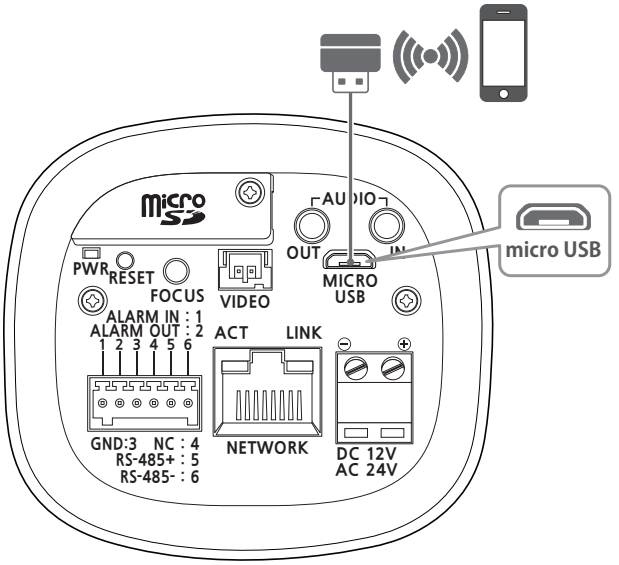
# INSTALLATION

## 1-5




## 1-6

- Not included: WiFi dongle, OTG adapter



## 1-7

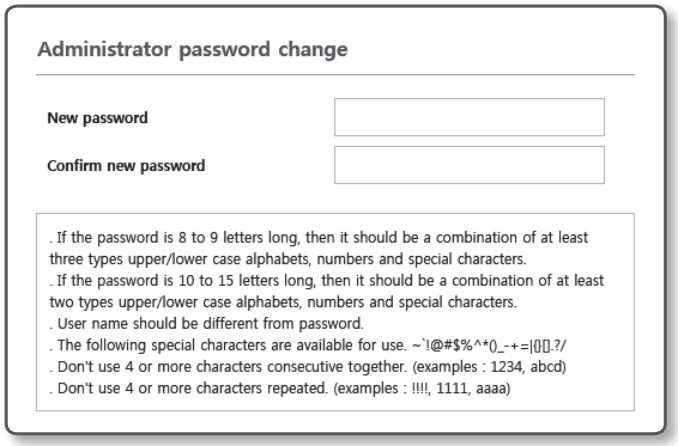



## 1-8



# PASSWORD SETTING

When you access the product for the first time, you must register the login password.
When the "**Password change**" window appears, enter the new password.




- For a new password with 8 to 9 digits, you must use at least 3 of the following: uppercase/ lowercase letters, numbers and special characters. For a password with 10 to 15 digits, you must use at least 2 types of those mentioned.
  - Special characters that are allowed. : ~`!@#$%^*()_-+=|{}[].?/
- For higher security, you are not recommended to repeat the same characters or consecutive keyboard inputs for your passwords.
- If you lost your password, you can press the [**RESET**] button to initialize the product. So, don't lose your password by using a memo pad or memorizing it.

# LOGIN

Whenever you access the camera, the login window appears.
Enter the User ID and password to access the camera.

1. Enter "**admin**" in the <**User Name**> input box.
2. Enter the password in the <**Password**> input field.
3. Click [**OK**].

# CONNECTING TO WiFi

## Camera setting

1. Connect OTG adapter (5-pin) and WiFi dongle to the micro USB terminal.

## Smartphone setting

1. Install the Wisenet Installation application.
2. Select the camera SSID after turning on the WiFi.
3. Run the Wisenet Installation application.
4. When you log in to the camera, the video will be connected. (initial password: 4321)
   - The video will be played without being logged in during the initial connection.
5. You can adjust angle of view while watching the video through smartphone.

WISENET

# NETWORK CAMERA

## Quick Guide

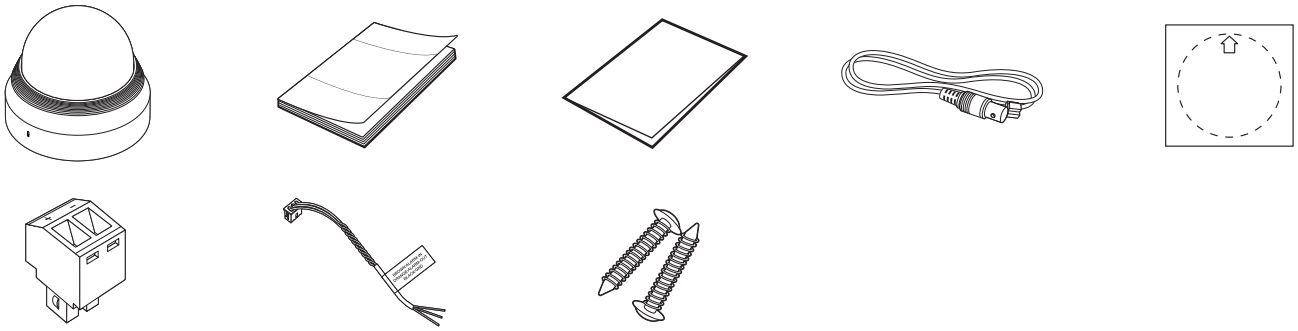
XND-6080/6080V/6080R/6080RV/8080R/8080RV
XNV-6080/6080R/8080R

CE

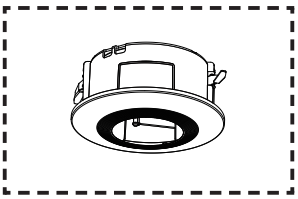
# COMPONENT

As for each sales country, accessories are not the same.

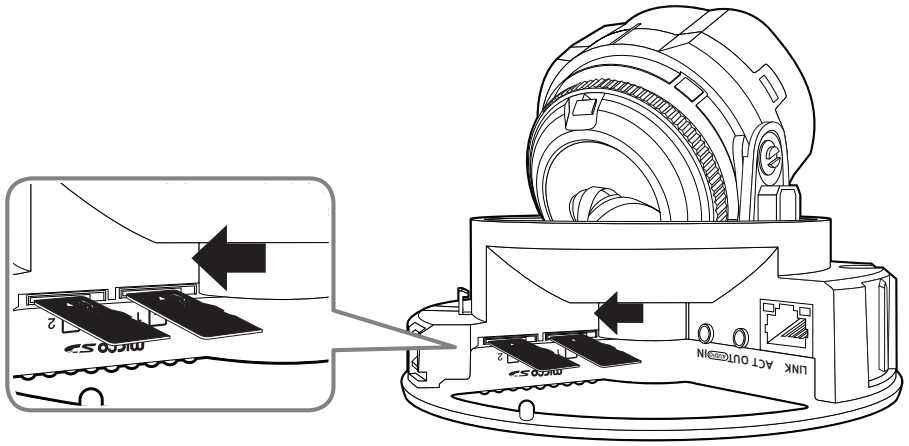
- XND-6080/6080R/8080R



Options (not included)



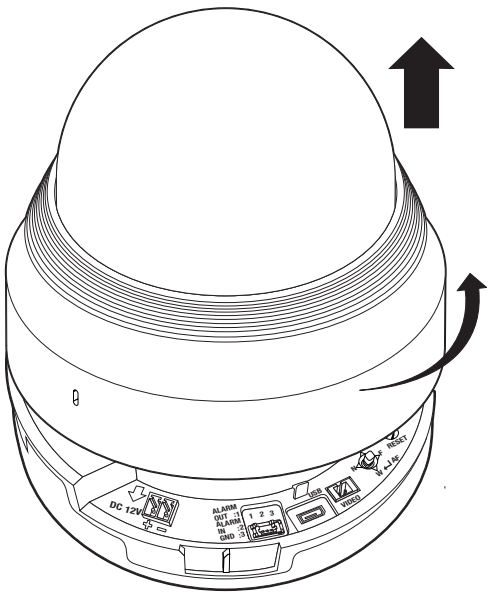
- Not Included : SD CARD



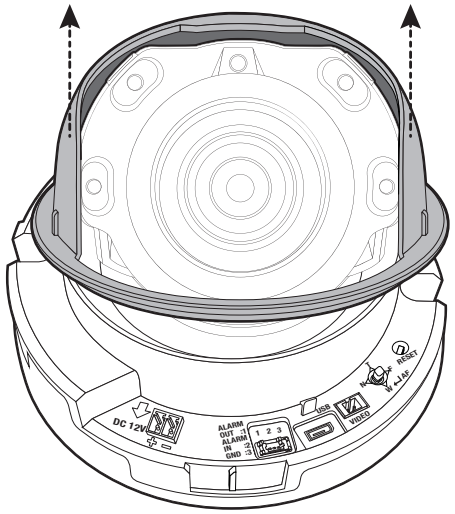


# INSTALLATION

## 1-1

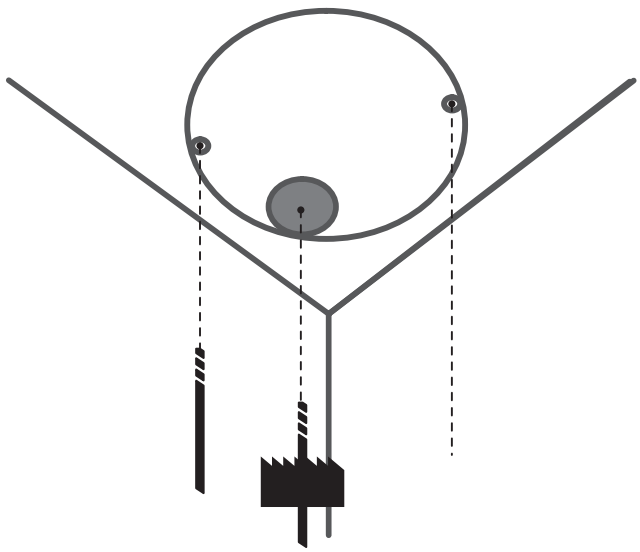



## 1-2

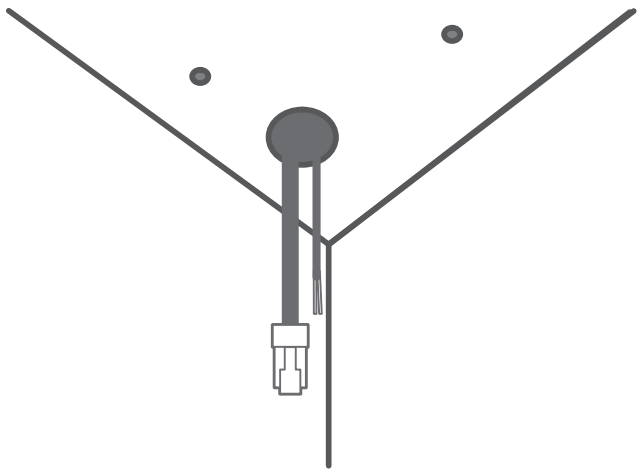


# INSTALLATION

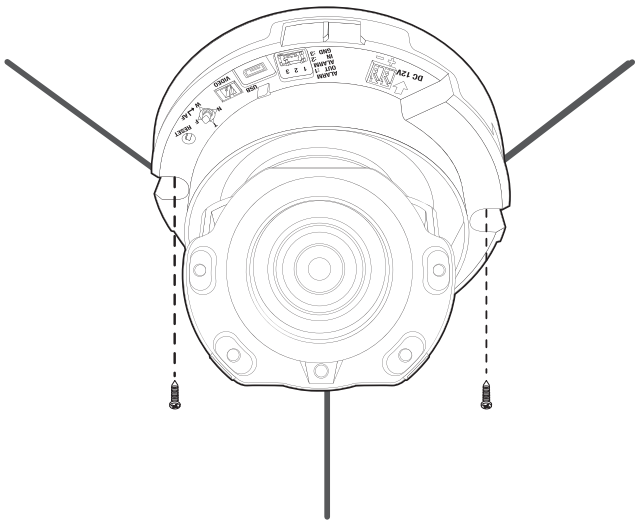
## 1-3



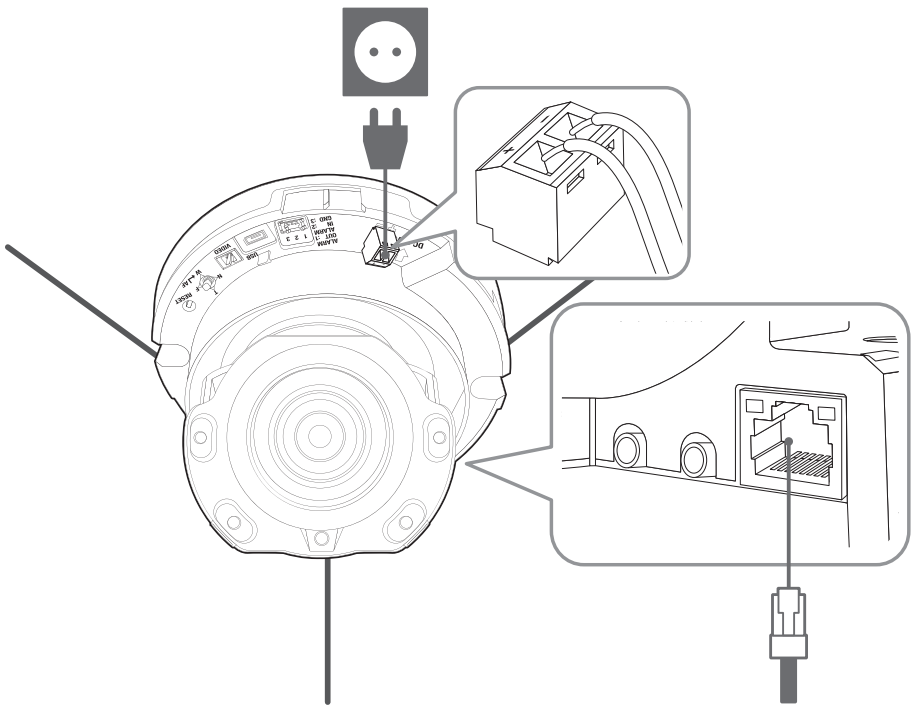
## 1-4



## 1-5



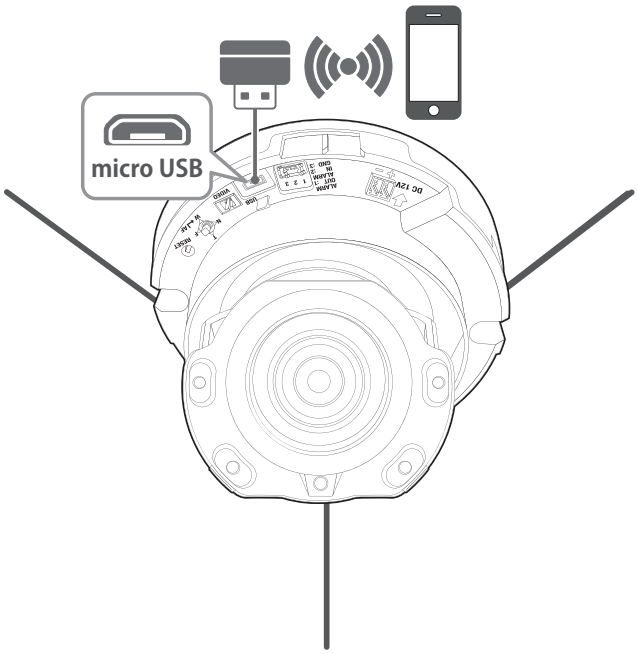
## 1-6



# INSTALLATION

## 1-7

• Not included: WiFi dongle, OTG adapter

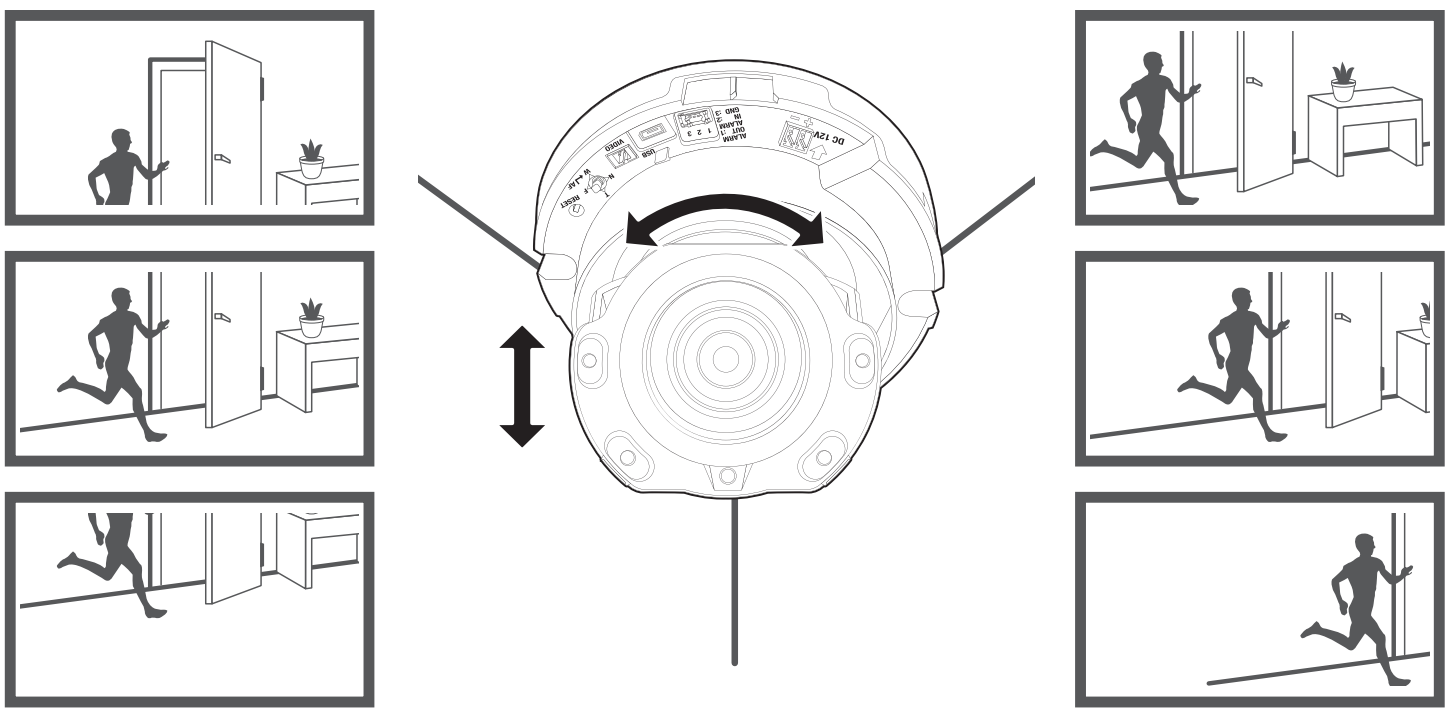



## 1-8

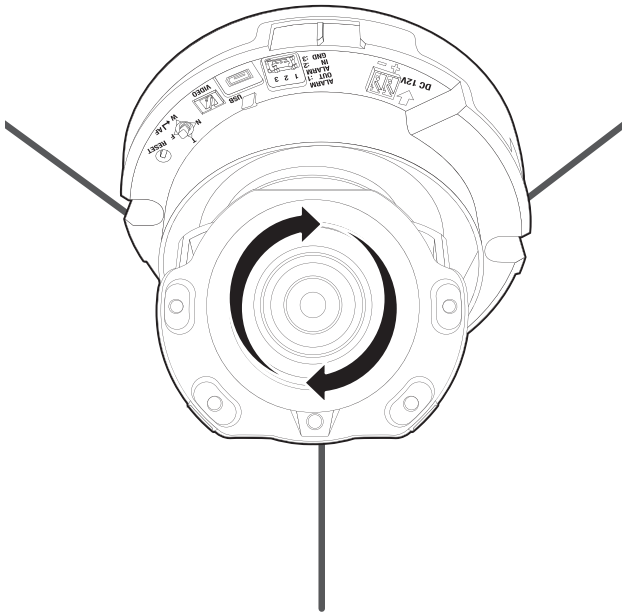


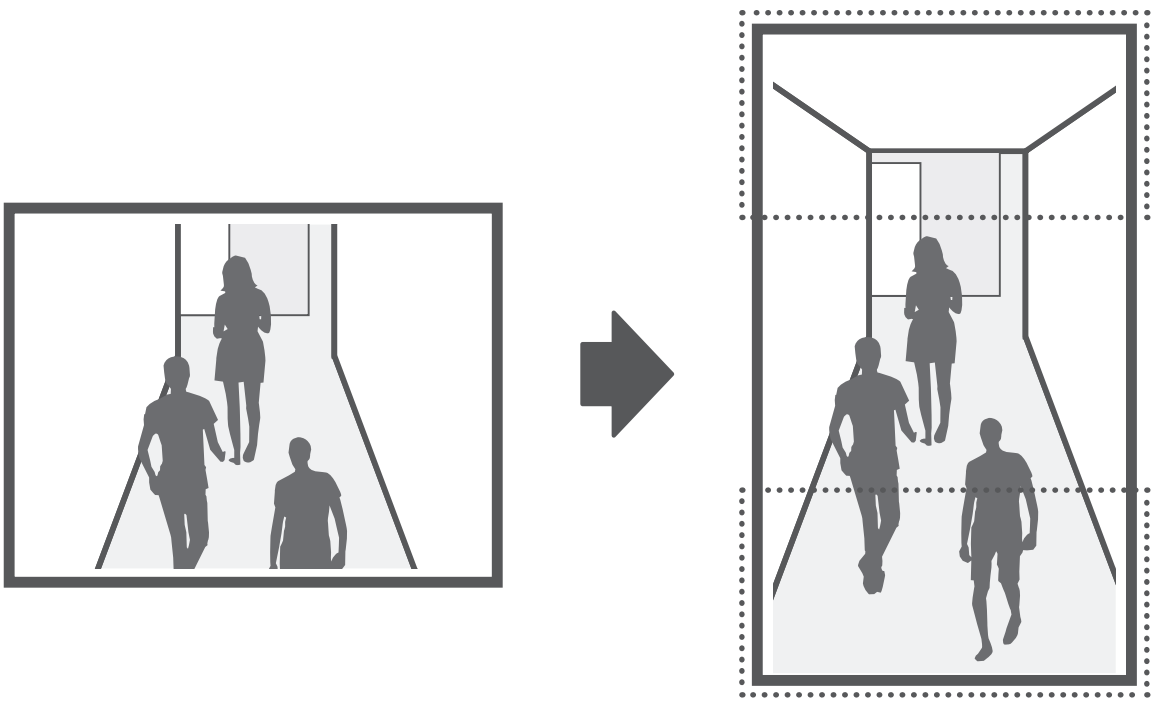


1-9

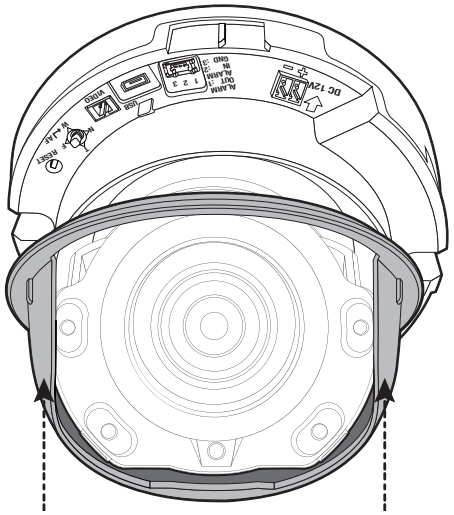


## 1-10

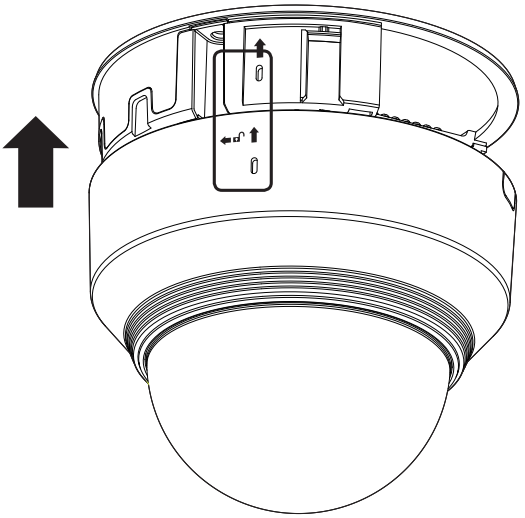


## 1-11



## 1-12



1-13

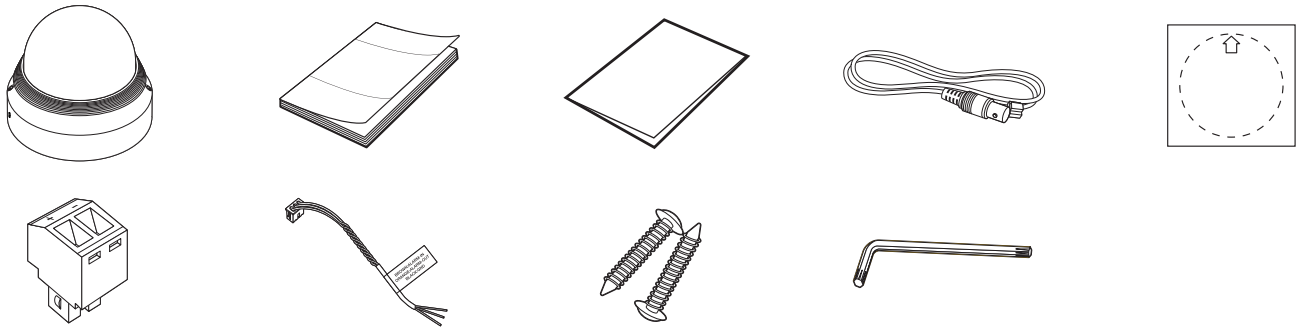




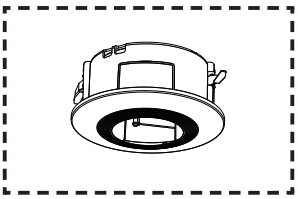

# COMPONENT

As for each sales country, accessories are not the same.

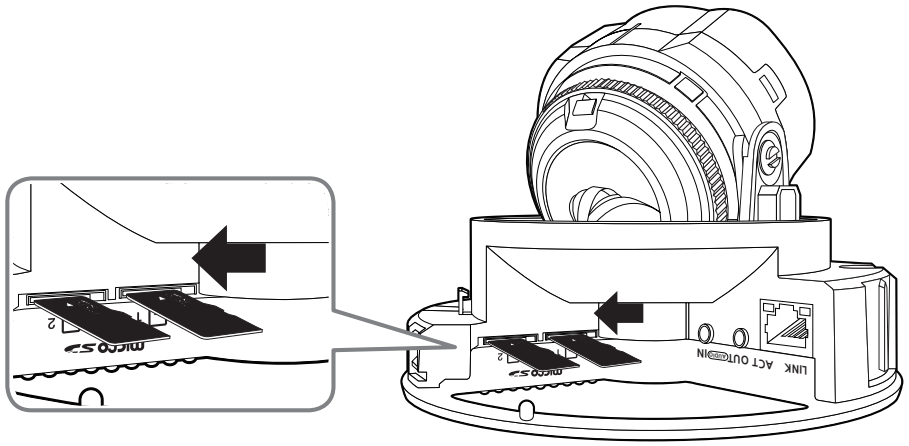
- XND-6080V/6080RV/8080RV



Options (not included)

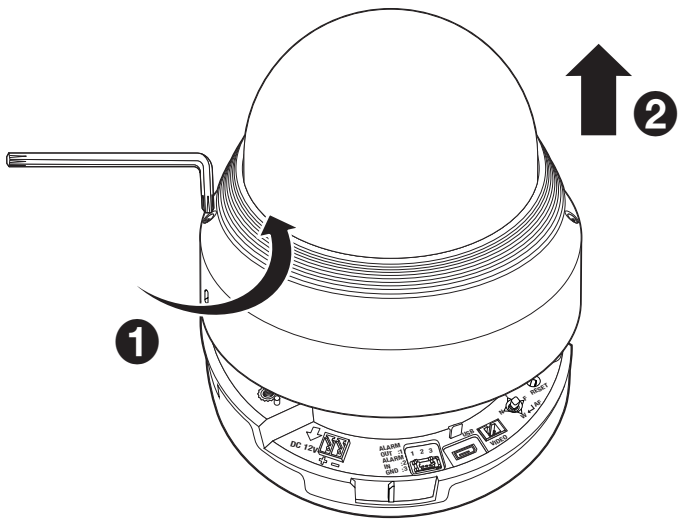


- Not Included : SD CARD

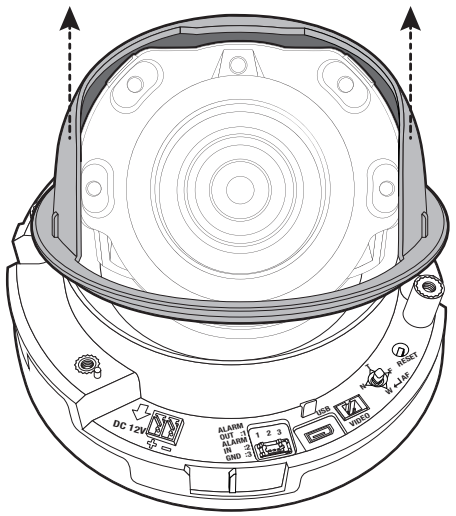




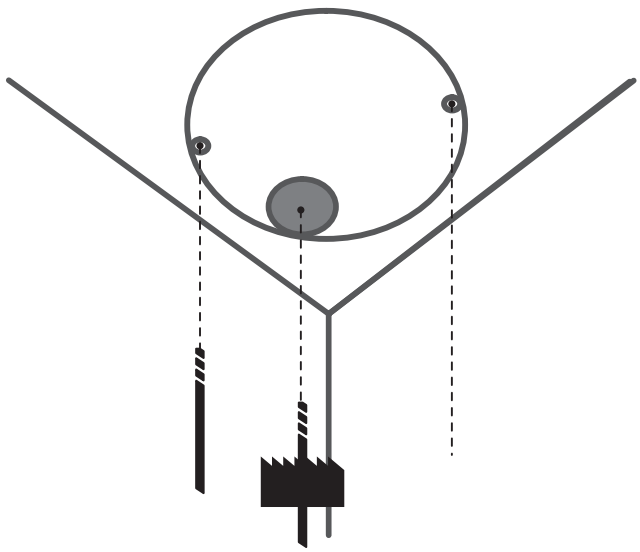
## 1-1


❷
❶
DC 12V
ALARM OUT
ALARM IN
GND
1 2 3
RESET
VIDEO

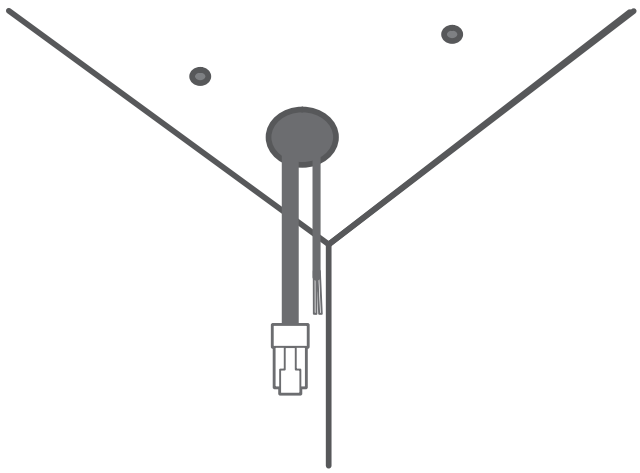
## 1-2


DC 12V
ALARM OUT
ALARM IN
GND
1 2 3
RESET
VIDEO

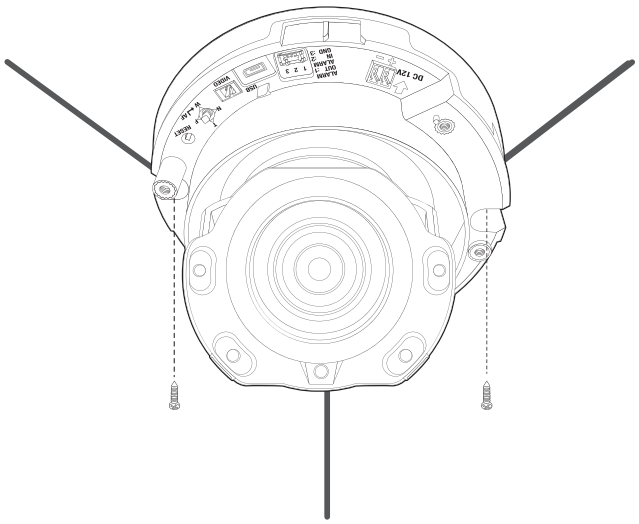
## 1-3



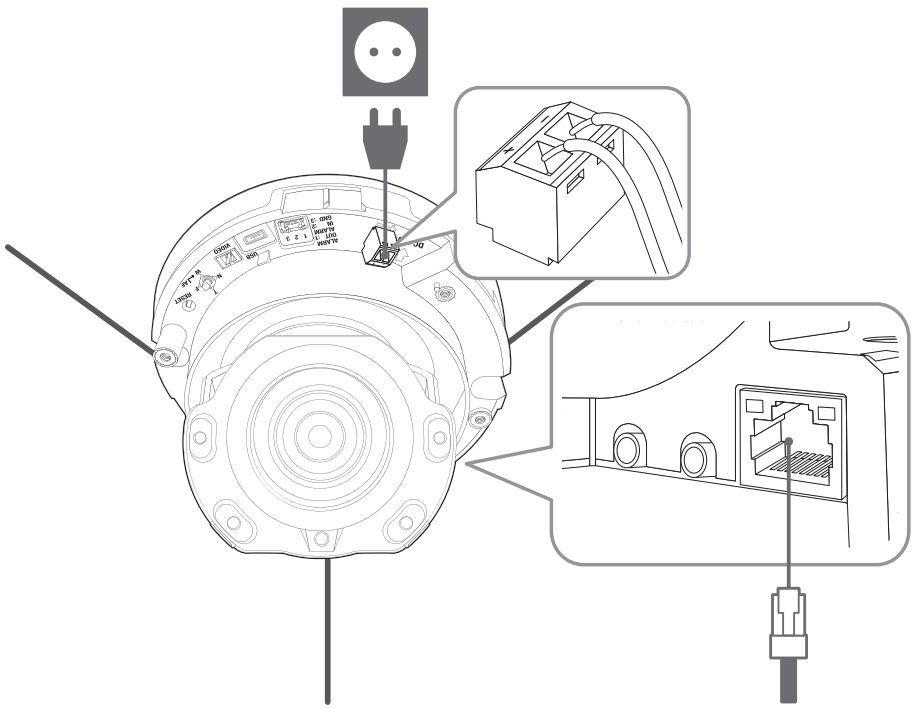
## 1-4



## 1-5

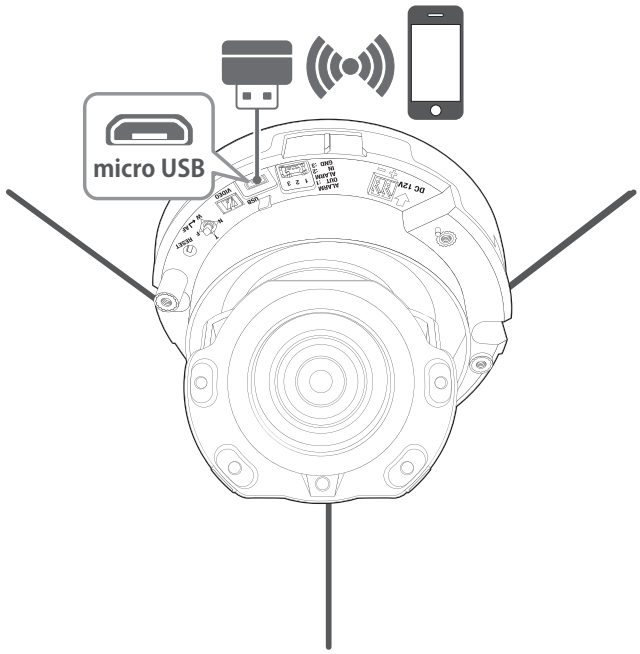


## 1-6



## 1-7

• Not included: WiFi dongle, OTG adapter

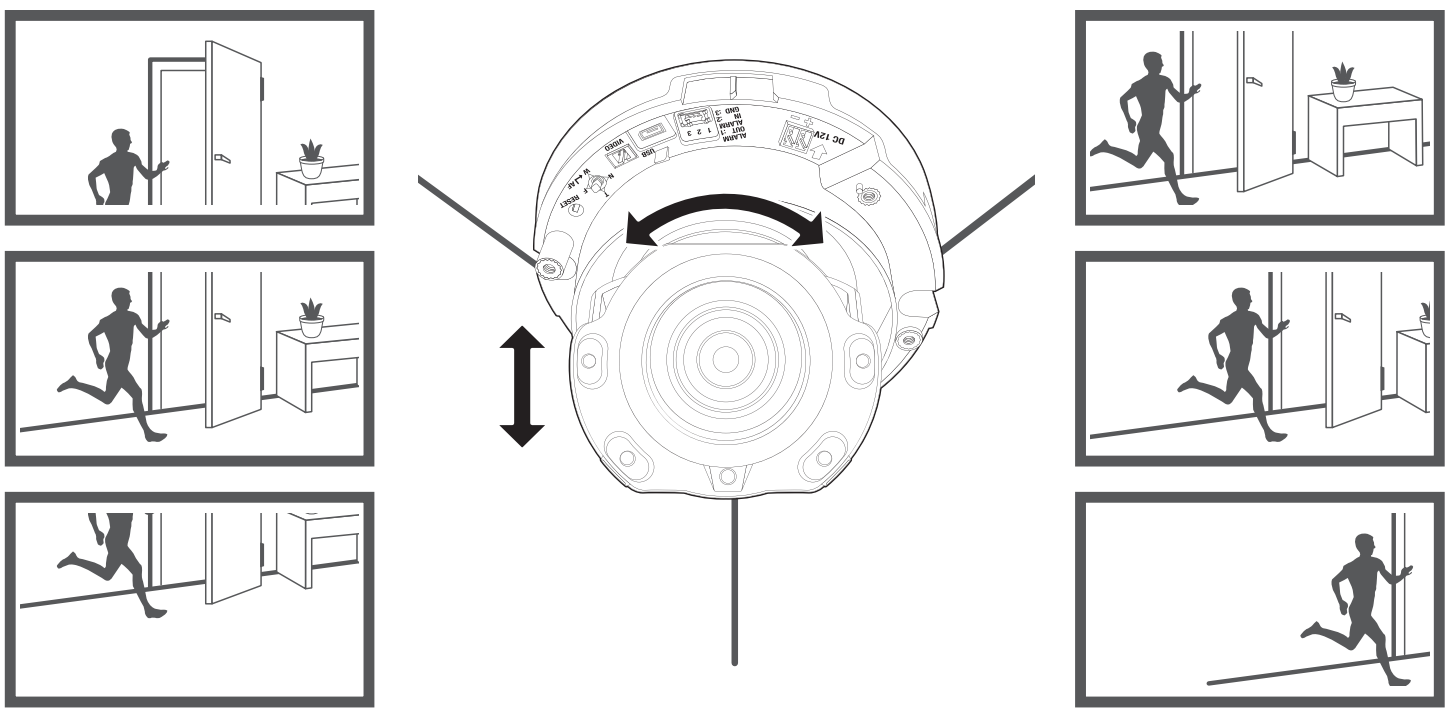



## 1-8

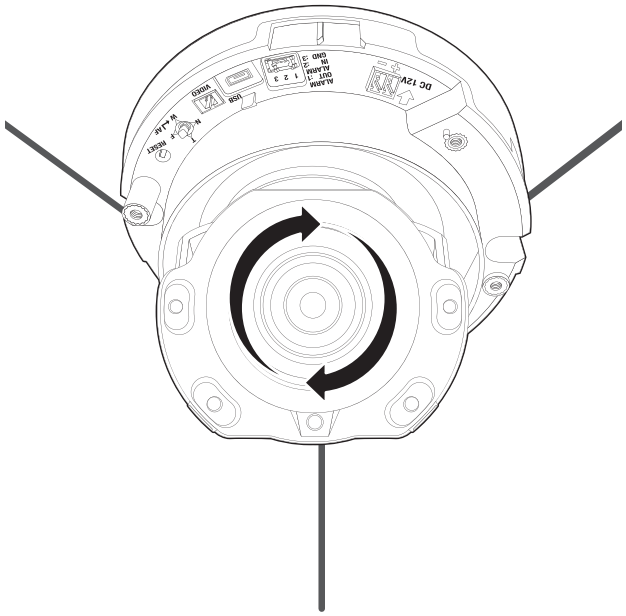


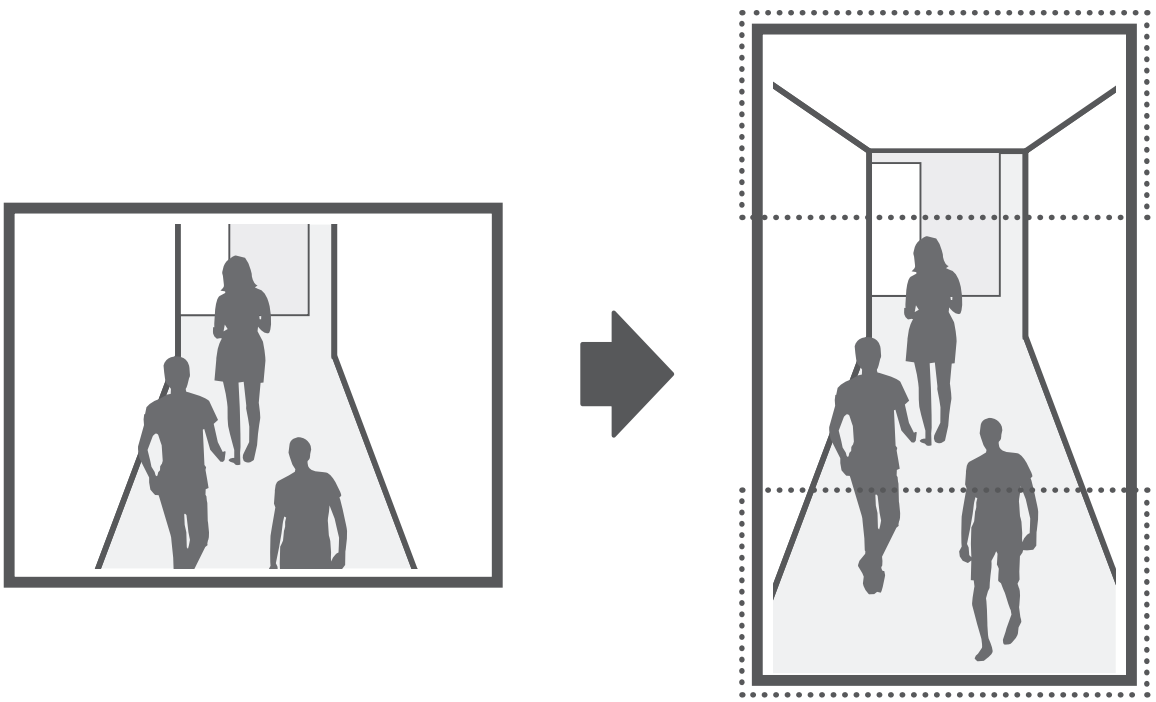


1-9

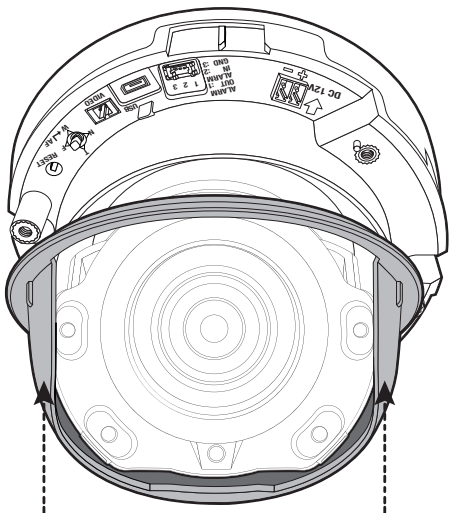


## 1-10

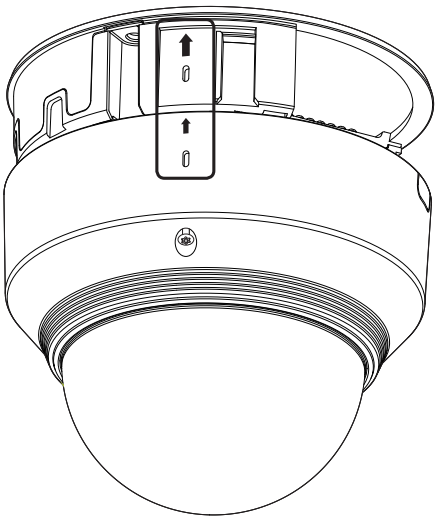


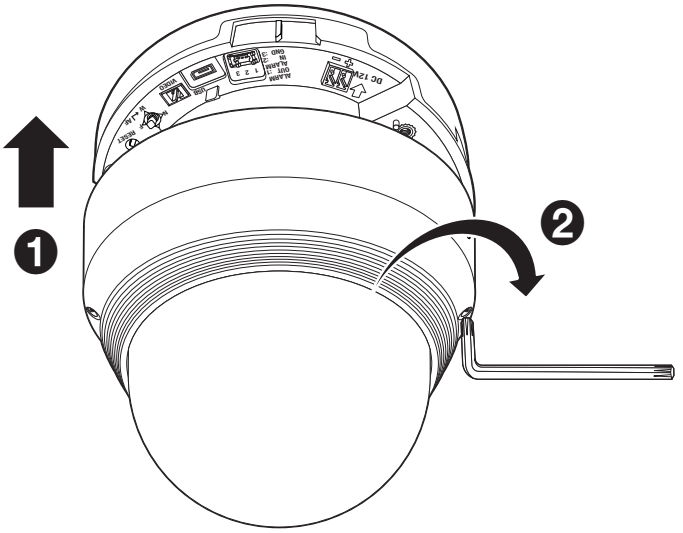
## 1-11



## 1-12

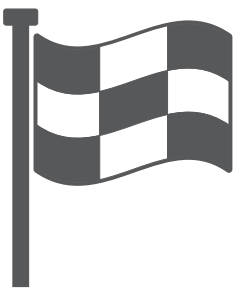


## 1-13




## 1-14

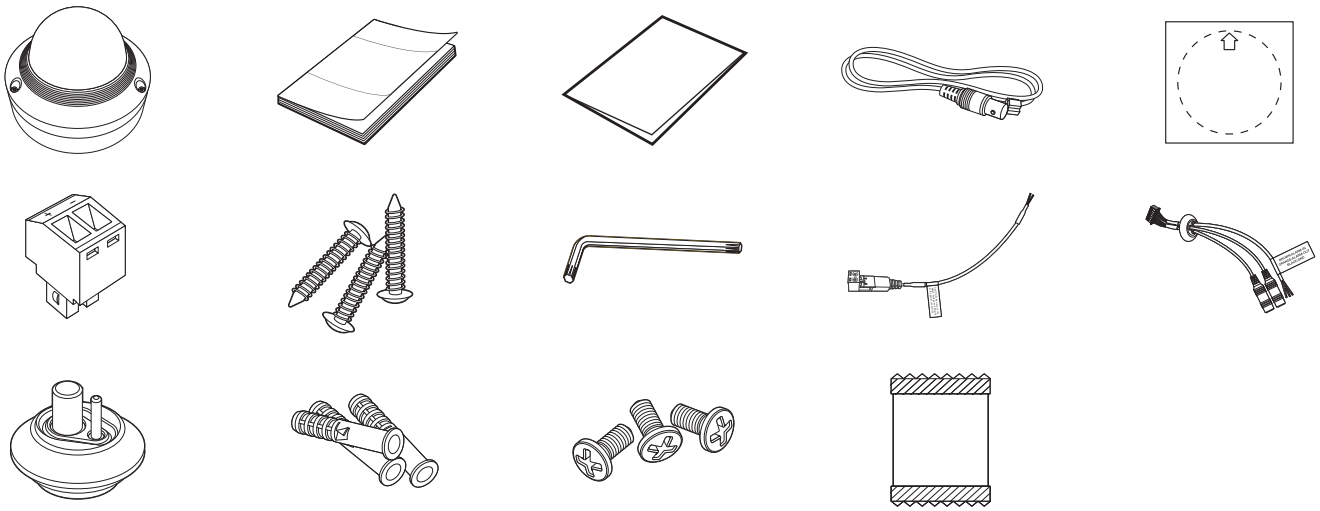


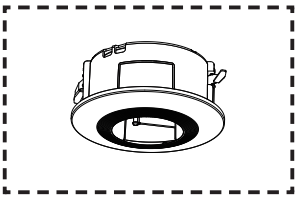
# COMPONENT

As for each sales country, accessories are not the same.

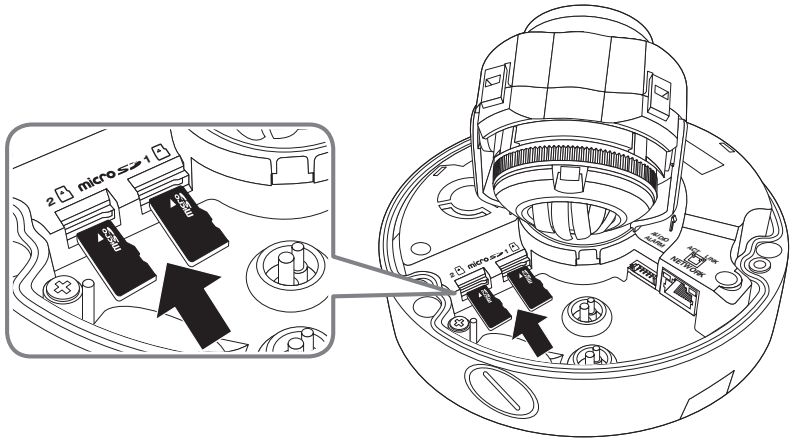
- XNV-6080/6080R/8080R



Options (not included)

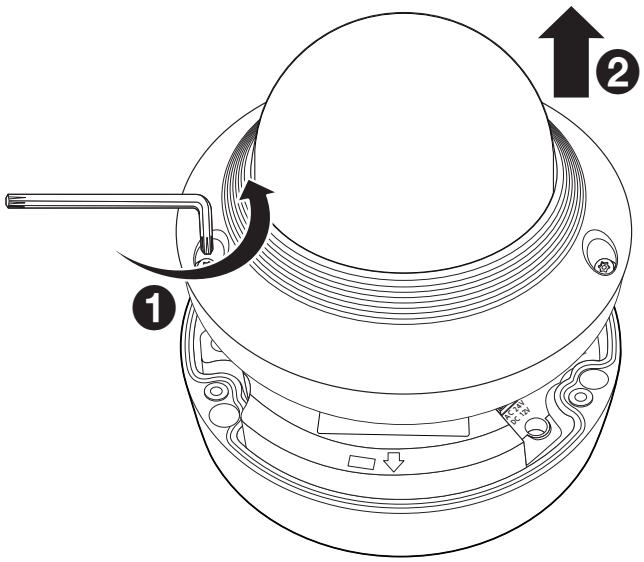


- Not Included : SD CARD

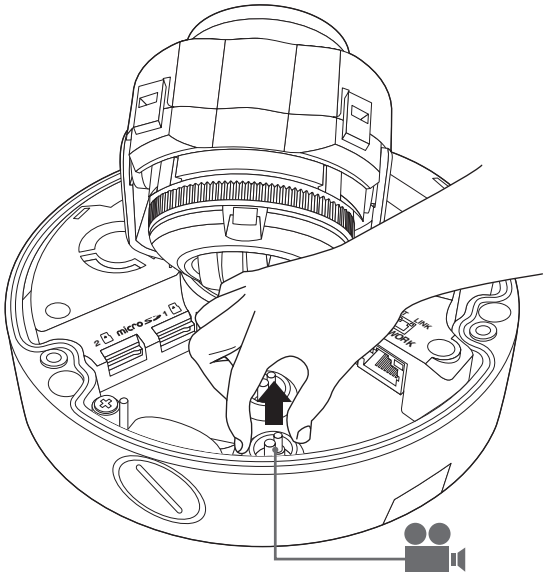




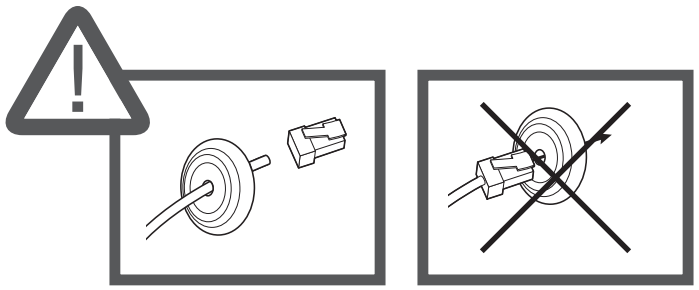
## 1-1

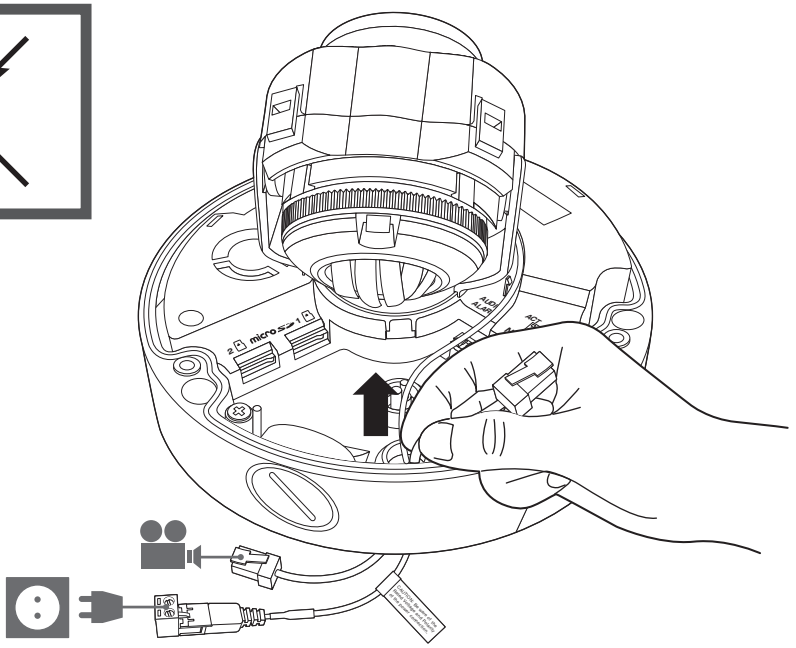



## 1-2

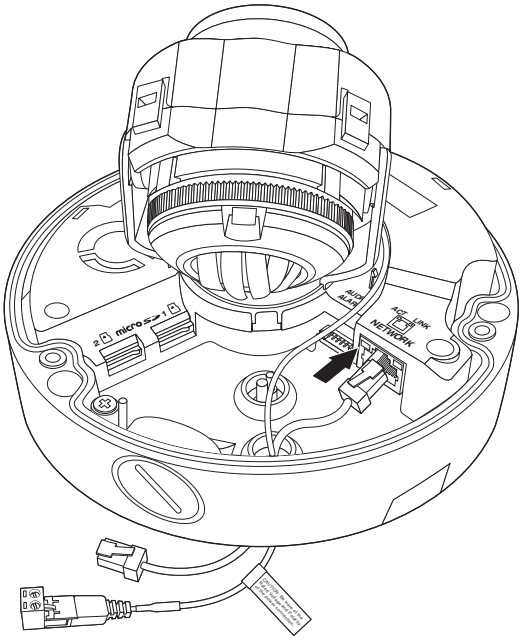


## 1-3

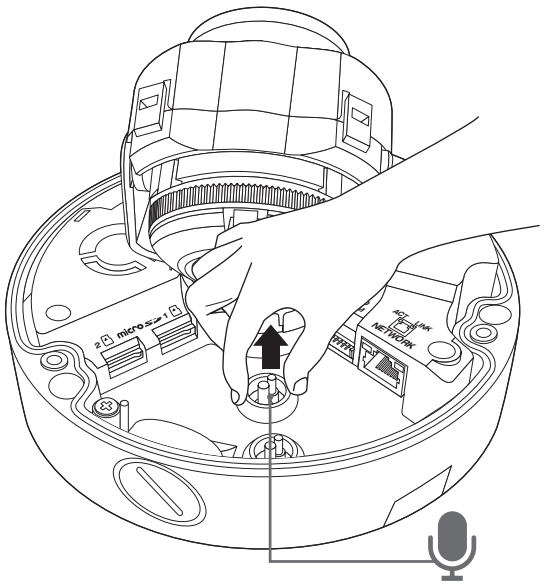




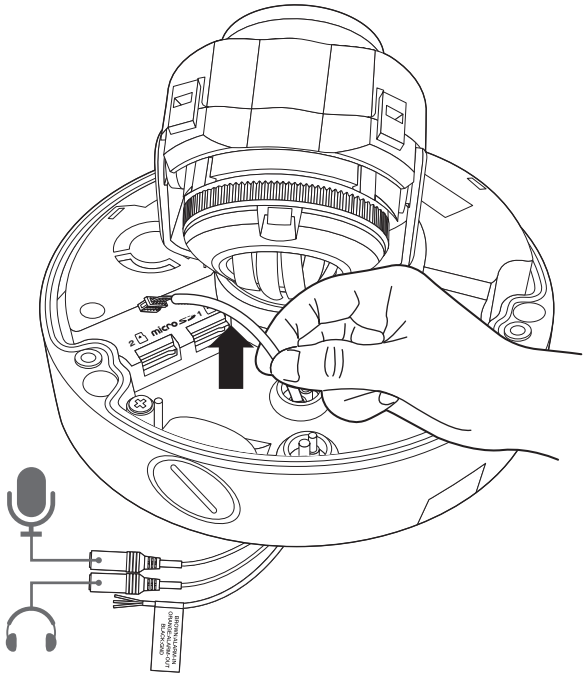
## 1-4



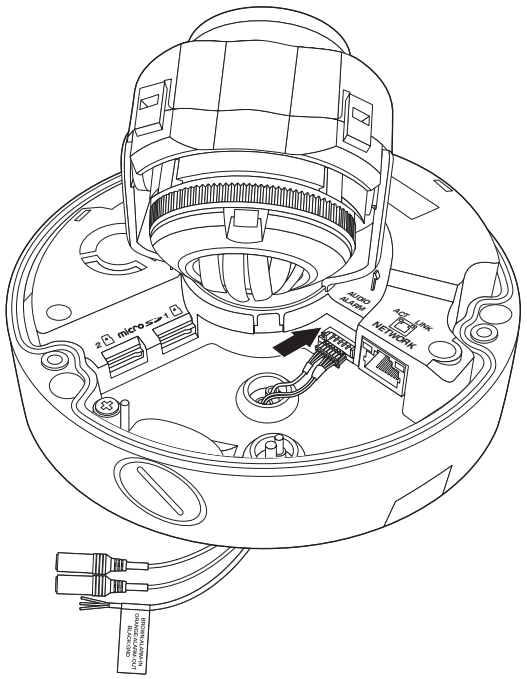
## 1-5



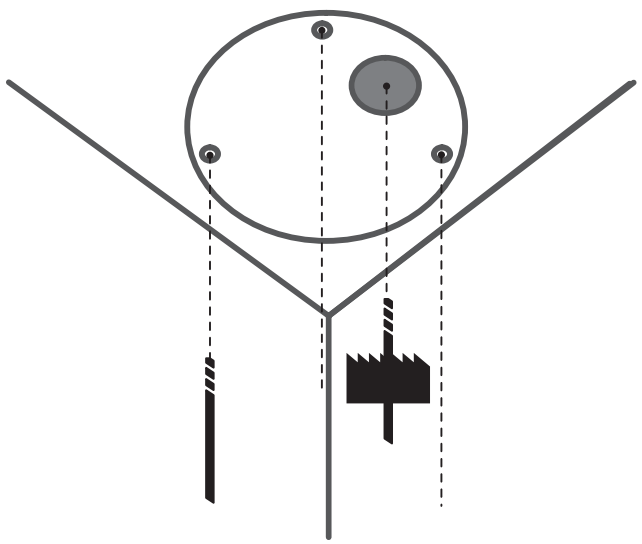

## 1-6



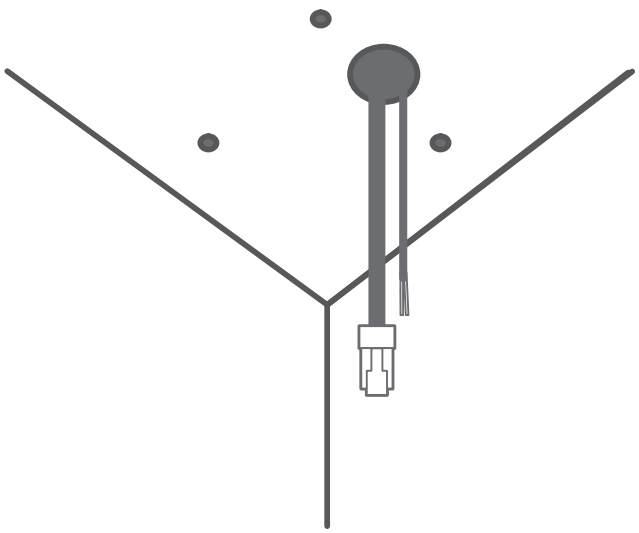
## 1-7



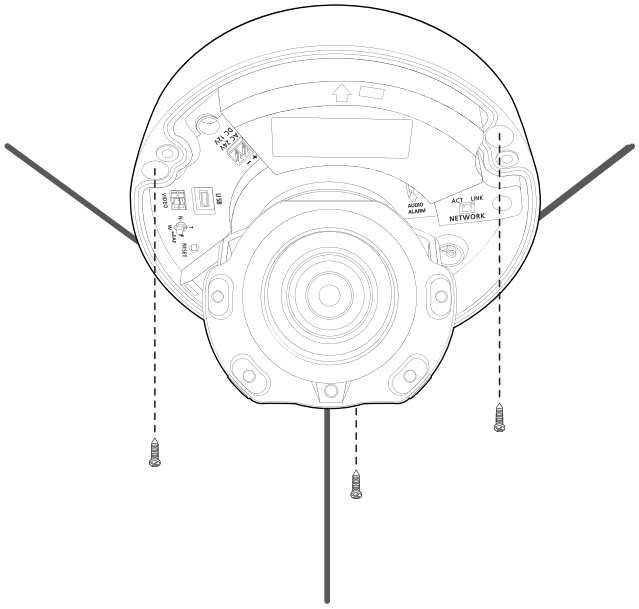

## 1-8



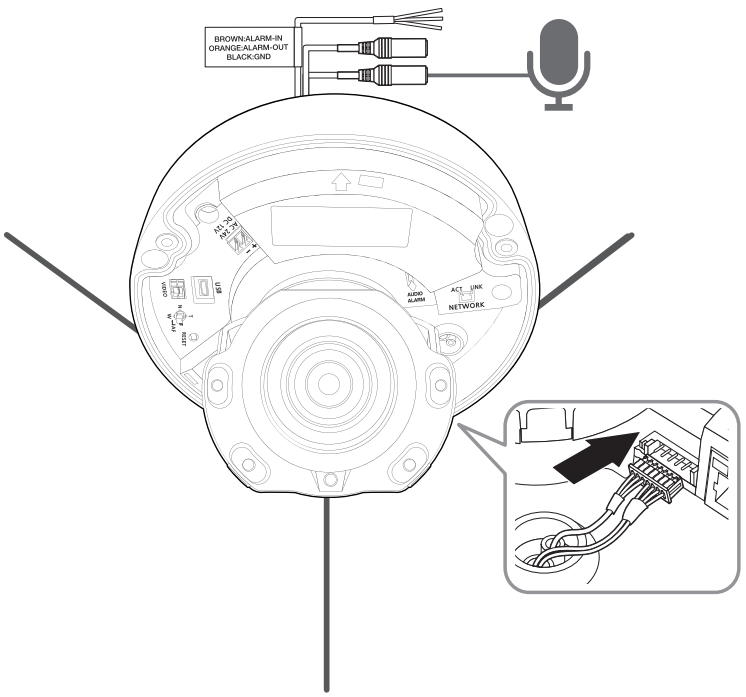
## 1-9



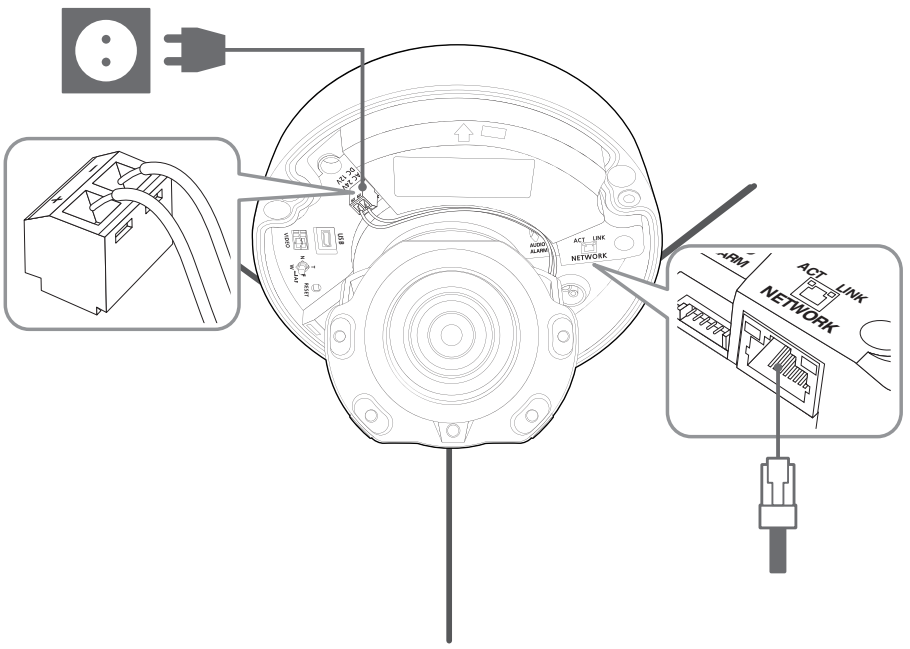
## 1-10



## 1-11

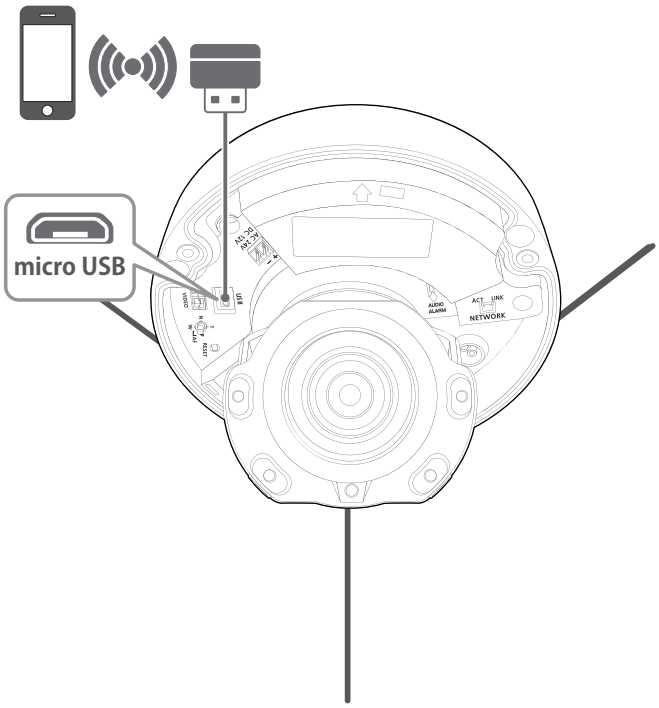

BROWN:ALARM-IN
ORANGE:ALARM-OUT
BLACK:GND
AUDIO ALARM
ACT LINK
NETWORK

## 1-12


AUDIO ALARM
ACT LINK
NETWORK
ALARM
ACT LINK
NETWORK

## 1-13

• Not included: WiFi dongle, OTG adapter

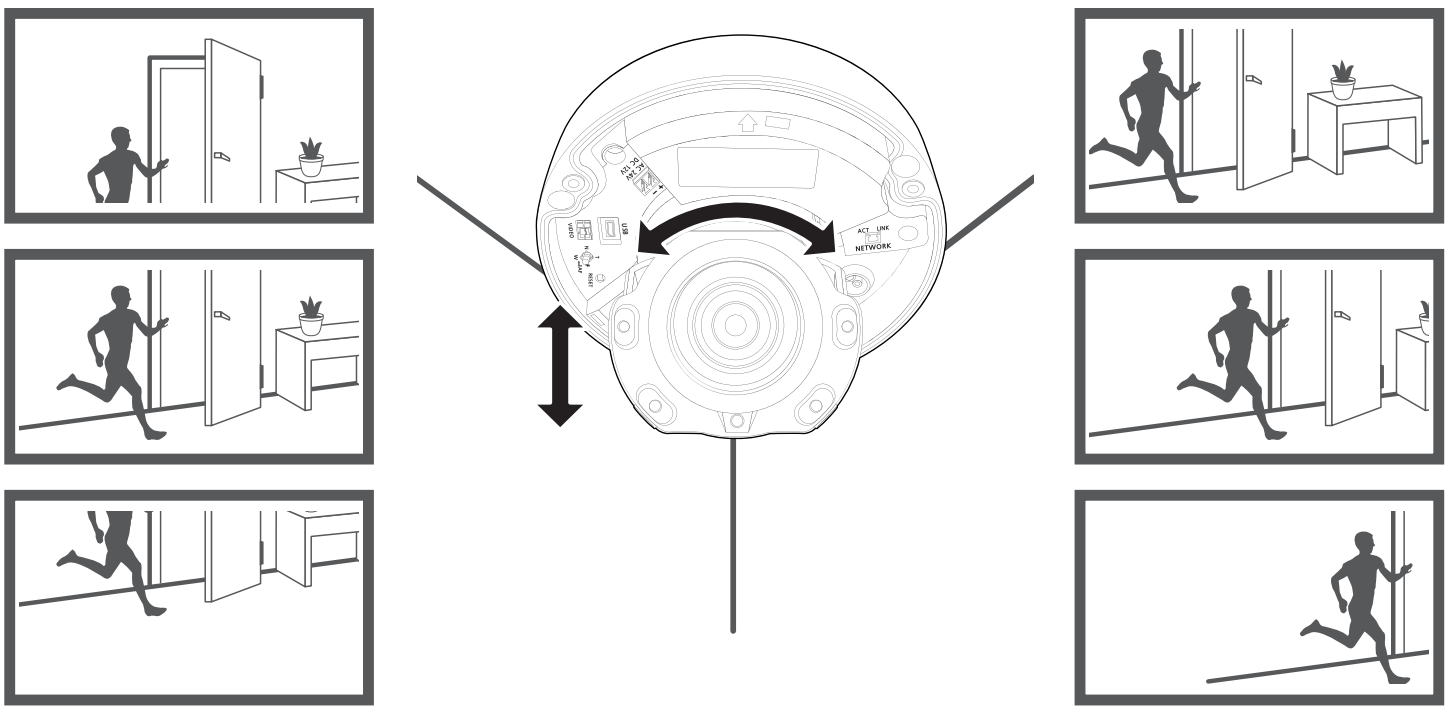



## 1-14

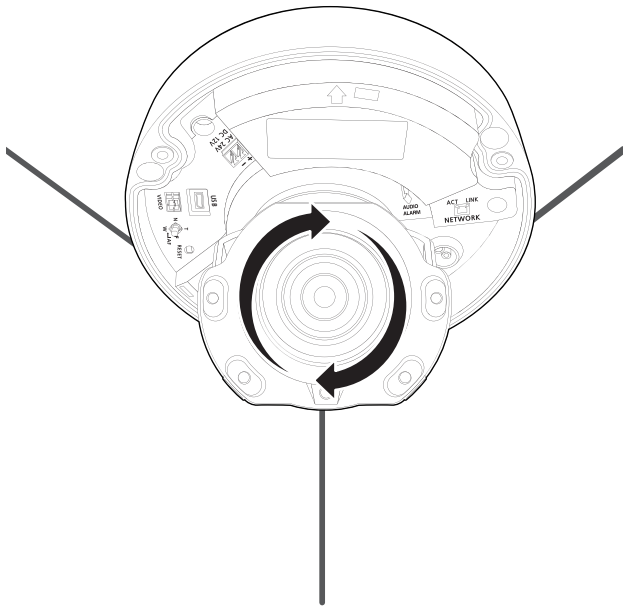


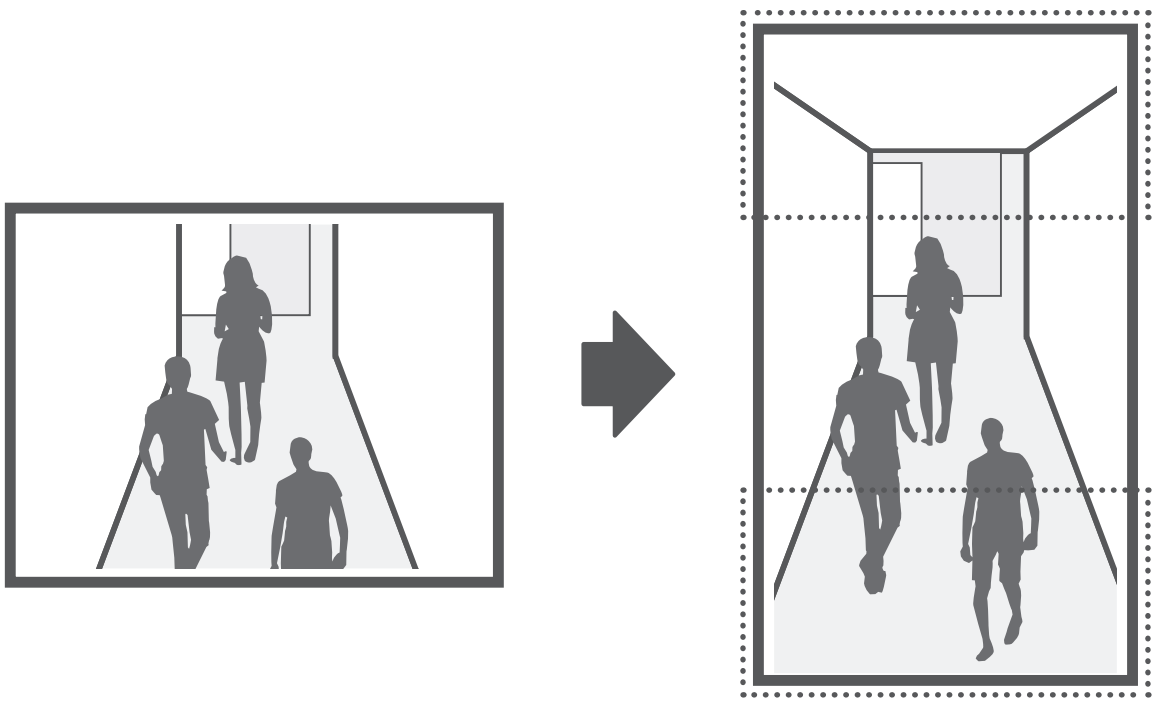


1-15

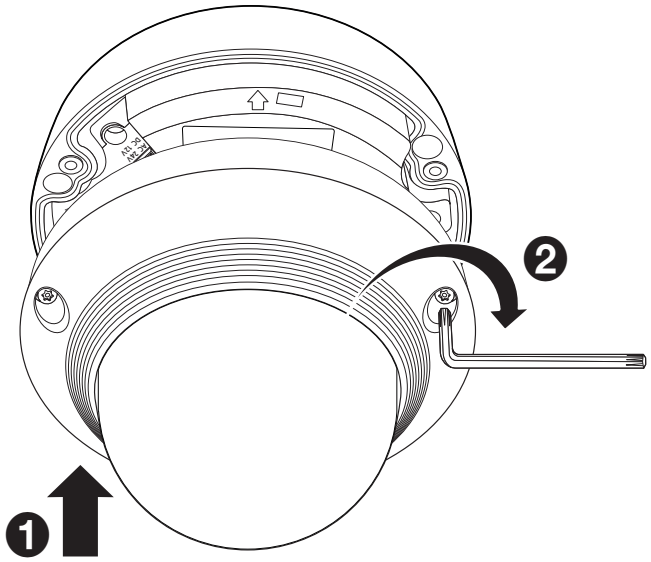


## 1-16



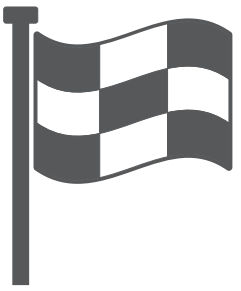



## 1-17



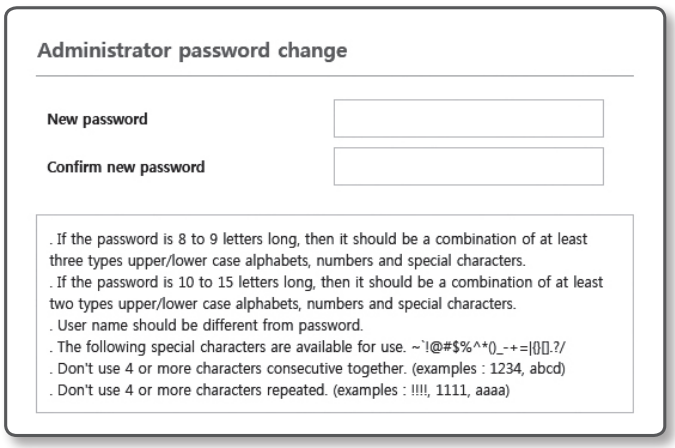

## 1-18



# PASSWORD SETTING

When you access the product for the first time, you must register the login password.
When the "**Password change**" window appears, enter the new password.




- For a new password with 8 to 9 digits, you must use at least 3 of the following: uppercase/ lowercase letters, numbers and special characters. For a password with 10 to 15 digits, you must use at least 2 types of those mentioned.
  - Special characters that are allowed. : ~`!@#$%^*()_-+=|{}[].?/
- For higher security, you are not recommended to repeat the same characters or consecutive keyboard inputs for your passwords.
- If you lost your password, you can press the [**RESET**] button to initialize the product. So, don't lose your password by using a memo pad or memorizing it.

# LOGIN

Whenever you access the camera, the login window appears.
Enter the User ID and password to access the camera.

1. Enter "**admin**" in the <**User Name**> input box.
2. Enter the password in the <**Password**> input field.
3. Click [**OK**].

# CONNECTING TO WiFi

## Camera setting

1. Connect OTG adapter (5-pin) and WiFi dongle to the micro USB terminal.

## Smartphone setting

1. Install the Wisenet Installation application.
2. Select the camera SSID after turning on the Wifi.
3. Run the Wisenet Installation application.
4. When you log in to the camera, the video will be connected. (initial password: 4321)
   - The video will be played without being logged in during the initial connection.
5. You can adjust angle of view while watching the video through smartphone.

wisenet

# NETWORK VIDEO RECORDER

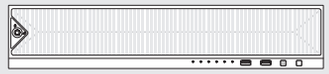
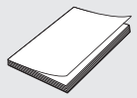
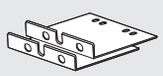
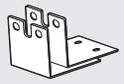
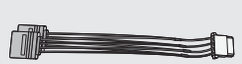
## Quick Guide

PRN-6400DB4/PRN-6400B4/PRN-3200B4
PRN-6405DB4/PRN-6405B4/PRN-3205B4
XRN-6410DB4/XRN-6410B4/XRN-3210B4
PRN-3200B2/PRN-3205B2/PRN-1600B2/PRN-1605B2
XRN-6410RB2/XRN-6410B2/XRN-3210RB2/XRN-3210B2
XRN-1620B2/XRN-1620SB1/XRN-820S

CE

## Package Contents

- The appearance of the components may differ from the image shown.
- Accessory category and quantity may differ depending on sales region.
- For some regions, HDD is not pre-installed. HDD Fixing Screw, SATA Cable quantity vary depending on the model.

| | | | |
|---|---|---|---|
|  |  |  |  |
| Recorder<br>XRN-820S | Recorder<br>XRN-1620SB1/XRN-1620B2<br>XRN-6410B2/XRN-3210B2 | Recorder<br>PRN-3200B2/PRN-1600B2<br>PRN-3205B2/PRN-1605B2<br>XRN-6410RB2/XRN-3210RB2 | Recorder<br>PRN-6400DB4/PRN-6400B4/PRN-3200B4<br>PRN-6405DB4/PRN-6405B4/PRN-3205B4<br>XRN-6410DB4/XRN-6410B4/XRN-3210B4 |
|  |  |  |  |
| Mouse | Quick Guide | Power Cable | Terminal block |
|  |  |  |  |
| Bracket Rack ❶ | Bracket Rack ❷ | SATA Power Cable ❶ | SATA Power Cable ❷ |
|  |  |  |  |
| SATA Data Cable | HDD Fixing Screw | Bracket Fixing Screw | Grounding screw |
|  |  |  |  |
| HDD Number Sticker ❶ | HDD Number Sticker ❷ | Front Cover Lock Key | Anti-slip Rubber Pad |

## Model without a HDD

| Parts \ Model name | PRN-6400DB4<br>PRN-6405DB4<br>XRN-6410DB4 | PRN-6400B4/PRN-6405B4<br>PRN-3200B4/PRN-3205B4<br>XRN-6410B4/XRN-3210B4 | PRN-3200B2/PRN-3205B2<br>PRN-1600B2/PRN-1605B2<br>XRN-6410RB2/XRN-3210RB2 | XRN-6410B2<br>XRN-3210B2 | XRN-1620SB1 | XRN-1620B2 | XRN-820S |
|---|---|---|---|---|---|---|---|
| Recorder | O | O | O | O | O | O | O |
| Mouse | O | O | O | O | O | O | O |
| Quick Guide | O | O | O | O | O | O | O |
| Power Cable | O (2 ea) | O | O | O | O | O | O |
| Terminal block | O (2 ea) | O (2 ea) | O (2 ea) | O (2 ea) | O | O | O |
| Bracket Rack ❶ | X | X | O | O | O | O | X |
| Bracket Rack ❷ | X | X | X | X | X | X | O |
| SATA Power Cable ❶ | X | X | X | O (2 ea) | O | O (2 ea) | X |
| SATA Power Cable ❷ | X | X | X | X | X | X | O |
| SATA Data Cable | X | X | X | O (8 ea) | O (4 ea) | O (8 ea) | O (2 ea) |
| HDD Fixing Screw | O (64 ea) | O (64 ea) | O (32 ea) | O (32 ea) | O (16 ea) | O (32 ea) | O (8 ea) |
| Bracket Fixing Screw | X | X | O (8 ea) | O (8 ea) | O (4 ea) | O (4 ea) | O (4 ea) |
| Grounding screw | X | X | O | O | X | X | X |
| HDD Number Sticker ❶ | X | X | O | X | X | X | X |
| HDD Number Sticker ❷ | O | O | X | X | X | X | X |
| Front Cover Lock Key | O | O | O | X | X | X | X |
| Anti-slip Rubber Pad | O | O | X | X | X | X | X |

## Model with a HDD

| Parts \ Model name | XRN-6410B2 (HDD 1 ea) | XRN-3210B2 (HDD 1 ea) | XRN-1620SB1 (HDD 1 ea) | XRN-1620SB1 (HDD 2 ea) | XRN-1620B2 (HDD 1 ea) | XRN-820S (HDD 1 ea) |
|---|---|---|---|---|---|---|
| Recorder | O | O | O | O | O | O |
| Mouse | O | O | O | O | O | O |
| Quick Guide | O | O | O | O | O | O |
| Power Cable | O | O | O | O | O | O |
| Terminal block | O (2 ea) | O (2 ea) | O | O | O | O |
| Bracket Rack ❶ | O | O | O | O | O | X |
| Bracket Rack ❷ | X | X | X | X | X | O |
| SATA Power Cable ❶ | O | O | X | X | O | X |
| SATA Power Cable ❷ | X | X | X | X | X | X |
| SATA Data Cable | O (7 ea) | O (7 ea) | O (3 ea) | O (2 ea) | O (7 ea) | O |
| HDD Fixing Screw | O (28 ea) | O (28 ea) | O (12 ea) | O (8 ea) | O (28 ea) | O (4 ea) |
| Bracket Fixing Screw | O (8 ea) | O (8 ea) | O (4 ea) | O (4 ea) | O (4 ea) | O (4 ea) |
| Grounding screw | O | O | X | X | X | X |
| HDD Number Sticker ❶ | X | X | X | X | X | X |
| HDD Number Sticker ❷ | X | X | X | X | X | X |
| Front Cover Lock Key | X | X | X | X | X | X |
| Anti-slip Rubber Pad | X | X | X | X | X | X |

Hanwha Techwin Co., Ltd. is a surveillance camera manufacturer that provides video information equipment with various functions. Users must comply with local laws when using our devices. Users are solely responsible for any illegal use of our products.

**CAUTION**

- RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE. DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS.
- Do not ingest battery, Chemical Burn Hazard.
- This product contains a coin / button cell battery. If the coin / button cell battery is swallowed, it can cause severe internal burns in just 2 hours and can lead to death.
- Keep new and used batteries away from children. If the battery compartment does not close securely, stop using the product and keep it away from children. If you think batteries might have been swallowed or placed inside any part or the body, seek immediate medical attention.

**ATTENTION**

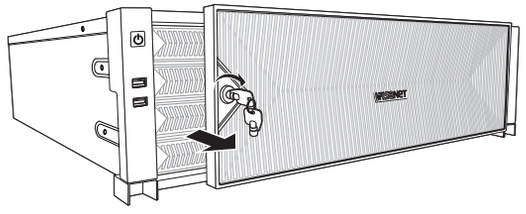
- IL Y A RISQUE D'EXPLOSION SI LA BATTERIE EST REMPLACÉE PAR UNE BATTERIE DE TYPE INCORRECT.METTRE AU REBUT LES BATTERIES USAGÉES CONFORMÉMENT AUX INSTRUCTIONS.
- Ne pas ingérer la pile, risque de brûlure chimique.
- Ce produit contient une pile de type bouton/pièce de monnaie. Si la pile de type bouton/pièce de monnaie est avalée, elle peut causer de graves brûlures internes en seulement 2 heures et peut entraîner la mort.
- Gardez les piles neuves et usagées hors de portée des enfants. Si le compartiment de la pile ne se ferme pas correctement, cessez d'utiliser le produit et gardez-le d'atteinte des enfants. Si vous suspectez que des piles ont été avalées ou insérées dans une partie du corps, consultez un médecin sans tarder.

## Installing the HDD

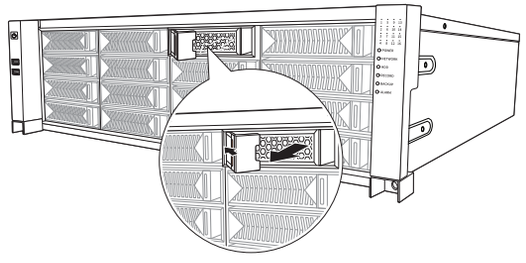
- If you are adding a new or previously used HDD to this product in addition to the HDD(s) originally installed, format the new HDD manually in the set before use.
- If you wish to replace or add an HDD, contact your dealer or our customer service first.

**PRN-6400DB4/PRN-6400B4/PRN-3200B4**
**PRN-6405DB4/PRN-6405B4/PRN-3205B4**
**XRN-6410DB4/XRN-6410B4/XRN-3210B4**

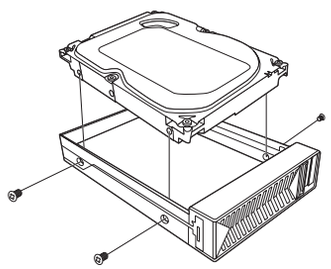
**1** Use the front cover lock key to unlock the cover. Grab the front cover with both hands and pull it to the left to remove it.



**2** Press the orange button on the hard disk bracket to the left and pull forward to separate the main body and the hard disk bracket.

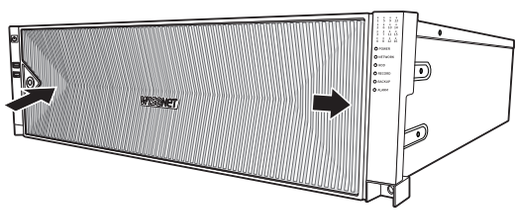


**3** Mount a HDD in the HDD bracket and screw it in using the screws provided.



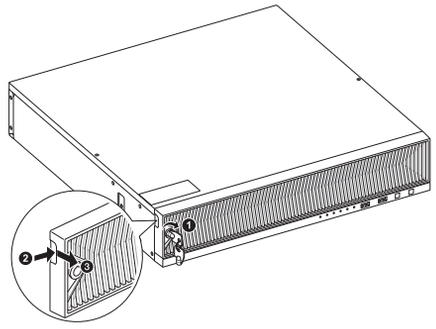
**4** Once the HDD is mounted in the bracket, push the bracket into the main body and close the front cover.

- Fit the front cover into the right notch of the main body, then press and close until you hear a 'click'.
- Use the front cover lock key to lock the front cover so that it does not get separated.

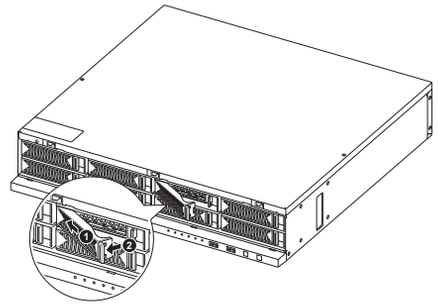


**PRN-3200B2/PRN-1600B2**
**PRN-3205B2/PRN-1605B2**
**XRN-6410RB2/XRN-3210RB2**

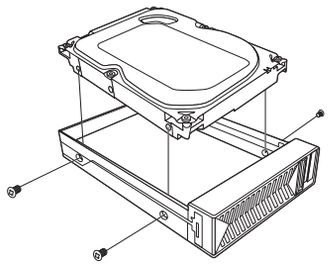
**1** Use the lock key on the front cover to unlock it, and press and pull the left notch of the front cover to separate it.



**2** Press the orange button on the hard disk bracket to the left and pull forward to separate the main body and the hard disk bracket.

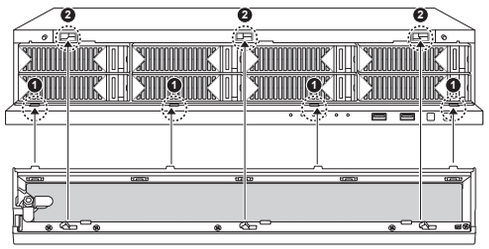


**3** Mount a HDD in the HDD bracket and screw it in using the screws provided.



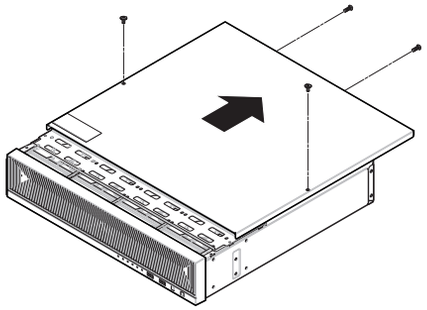
**4** Once the HDD is mounted in the bracket, push the bracket into the main body and close the front cover.

- Fit the front cover into the bottom notch on the recorder, and then press and close until you hear a 'click'.
- Use the front cover lock key to lock the front cover so that it does not get separated.

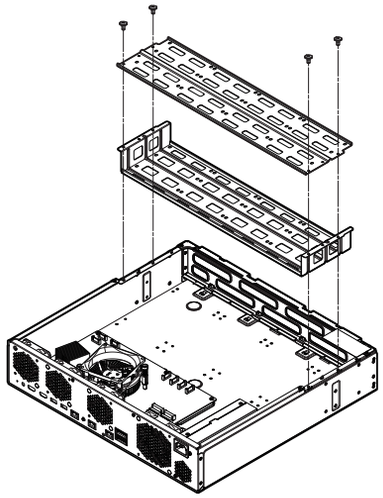


**XRN-6410B2/XRN-3210B2**

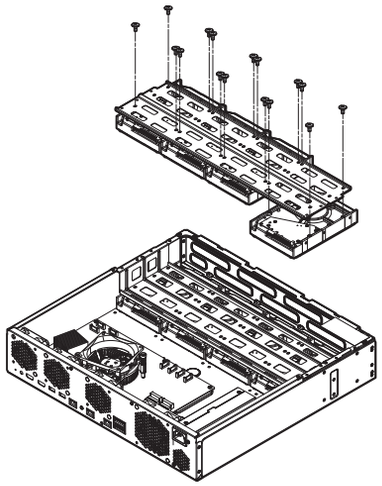
**1** Remove the screws from the top and back sides of the recorder, and push the cover back to release it.



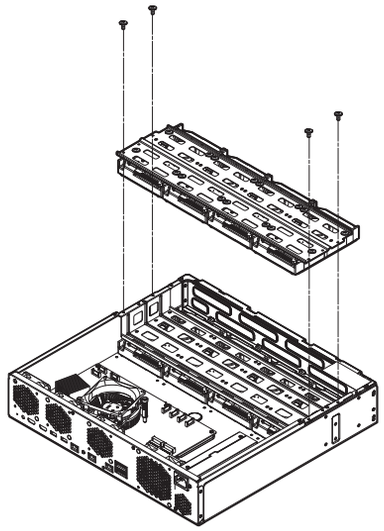
**2** Remove the screws from the left/right sides and release the bracket.



**3** Mount 8 hard disks into the bracket, and fix it using screws.

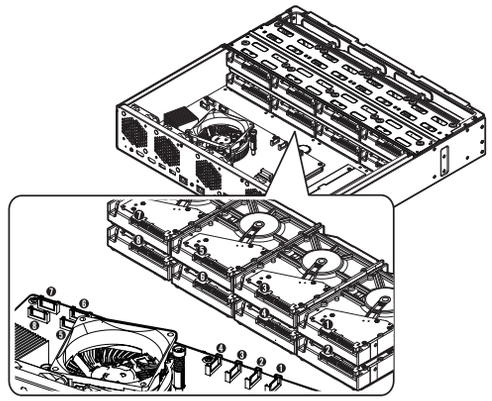


**4** Fix the hard-disk-mounted bracket to the recorder using screws.



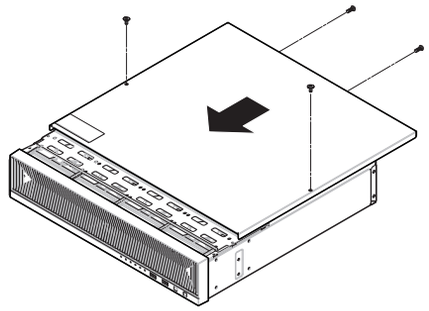
**5** Connect the SATA/power cable of the hard disk to the connector of the main board.

- Refer to the figure below for the hard disk location number and connector number.



**6** Make sure that there is no problem in the connection port and routing inside the recorder, and then fix it using screws after closing the cover.

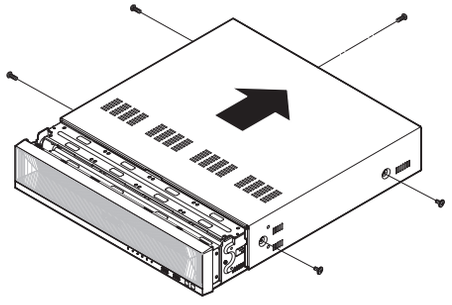
- When closing the cover, be careful not to damage the cable.



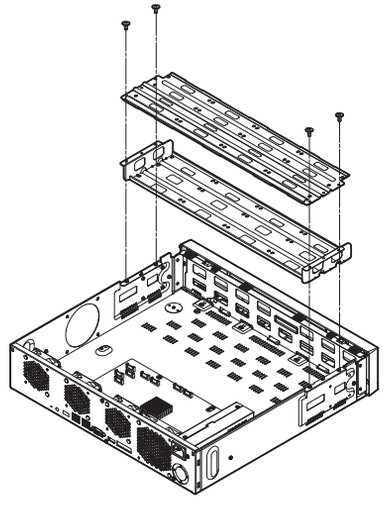
## XRN-1620B2/XRN-1620SB1

■ The following figures are based on Model XRN-1620B2.

**1** Remove the screws from the left/right sides and back side, and push the cover back to release it.

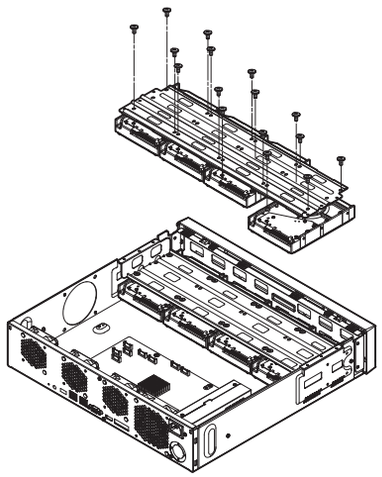


**2** Remove the screws from the left/right sides and release the bracket.

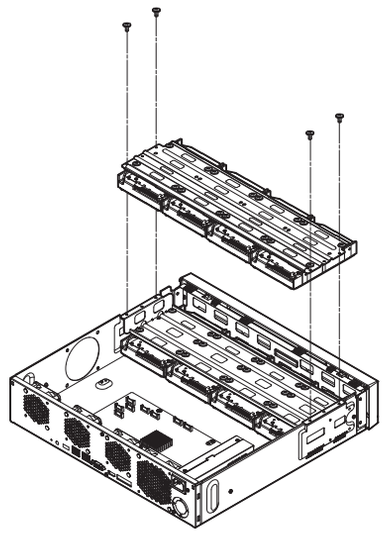


**3** Mount 8 hard disks into the bracket, and fix it using screws.

■ For XRN-1620SB1 model, mount hard disks into the bottom bracket.

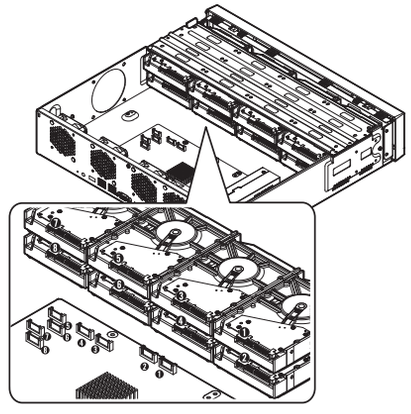


**4** Fix the hard-disk-mounted bracket to the recorder using screws.



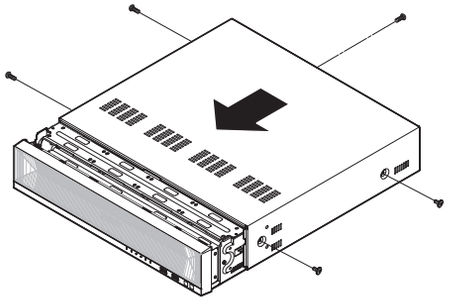
**5** Connect the SATA/power cable of the hard disk to the connector of the main board.

■ Refer to the figure below for the hard disk location number and connector number.



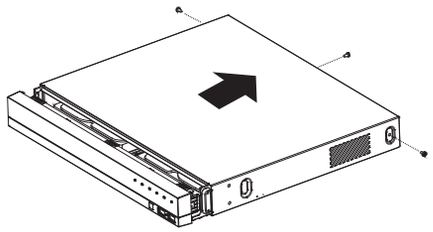
**6** Make sure that there is no problem in the connection port and routing inside the recorder, and then fix it using screws after closing the cover.

■ When closing the cover, be careful not to damage the cable.



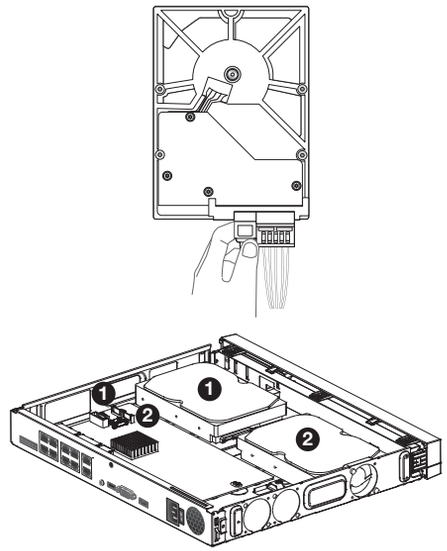
XRN-820S

**1** Remove the screws from the left/right sides and back side, and push the cover back to release it.



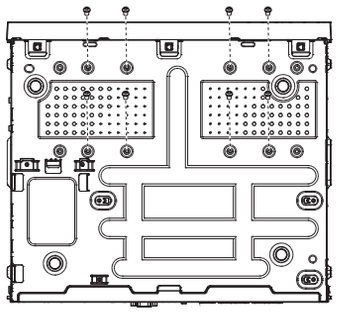
**2** Connect the SATA/power cable of the hard disk to the connector of the main board.

- Refer to the figure below for the hard disk location number and connector number.



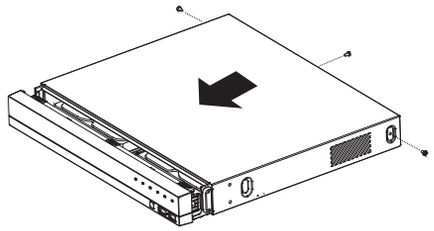

- Gently press the connector before removing the HDD. Do not force to pull the cable.

**3** Use the screws to fix the hard disk to the bottom of the recorder.



**4** Make sure that there is no problem in the connection port and routing inside the recorder, and then fix it using screws after closing the cover.

- When closing the cover, be careful not to damage the cable.



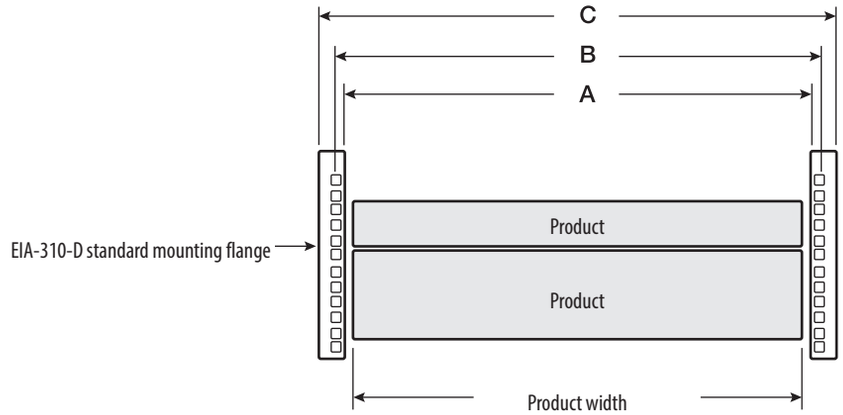
# Installing the Rack

**PRN-6400DB4/PRN-6400B4/PRN-3200B4**
**PRN-6405DB4/PRN-6405B4/PRN-3205B4**
**XRN-6410DB4/XRN-6410B4/XRN-3210B4**

## Rack Installation Requirements and Reference Dimensions

| Classification | Requirements |
|---|---|
| Rack type | 19-inch rack of EIA-310-D standard |
| POST count | 4 |
| POST distance | Depth 800 mm |

### Dimensions of mounting flange



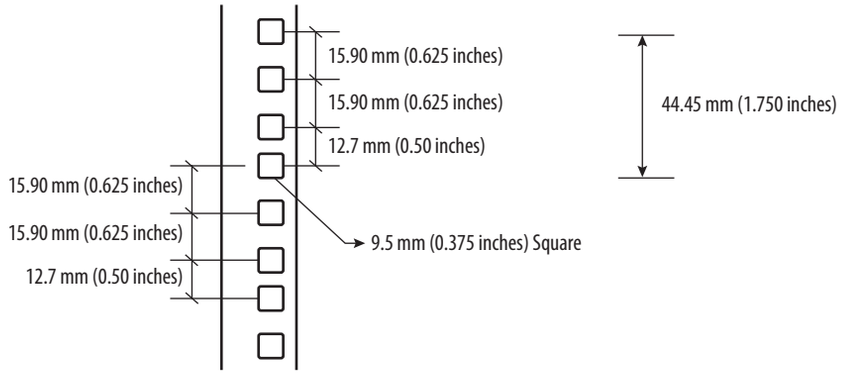

- **Notable dimensions**

| Index | Dimension |
|---|---|
| A | 450 mm (17.717 inches) min. |
| B | 465 mm (18.307 inches) nominal |
| C | 483.4 mm (19.031 inches) min. |

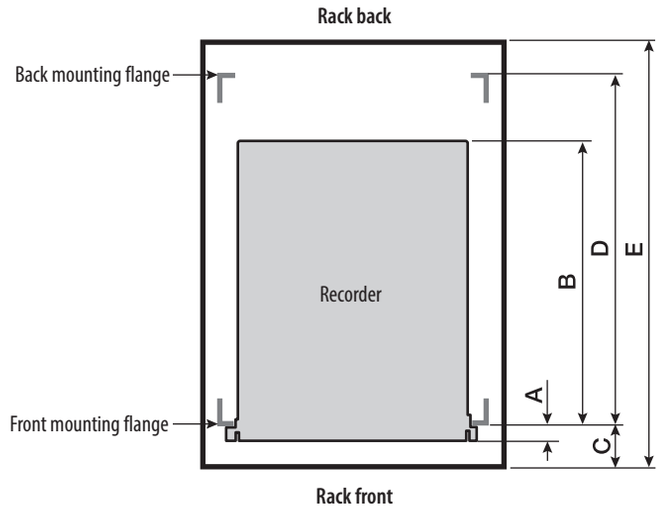
- Flange mounting holes (square holes are recommended for PRN-6400/PRN-6405/XRN-6410 series)

  While EIA-310-D standard allows the mounting flange holes to be round, square, or tapped (threaded), the PRN-6400/PRN-6405/XRN-6410 series is only designed to work with round or square holes, but not tapped holes.

- **Square mounting holes**



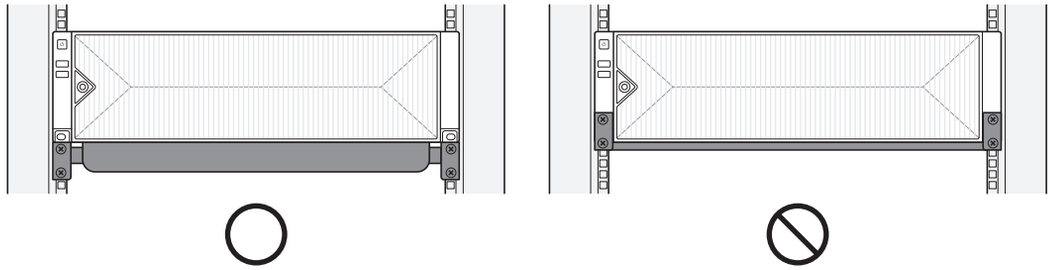

## Recommended rack dimensions




| Index | Dimension | Description |
|---|---|---|
| A | 28 mm | Recorder front dimension |
| B | 560 mm | Recorder product dimension |
| C | 51 mm | Offset distance between mounting flange and rack front |
| D | 617~730 mm | Offset distance between mounting flanges |
| E | 800 mm | Rack depth |

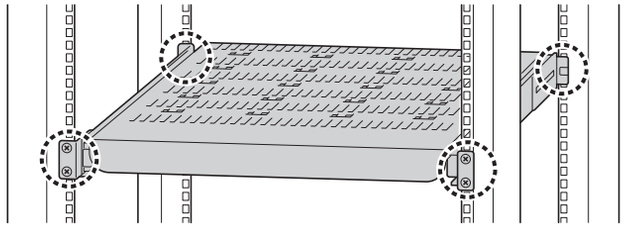
## Precautions when Selecting Shelves

To prevent any problem while installing the recorder, make sure to select a structure where the bottom of the product is mounted.



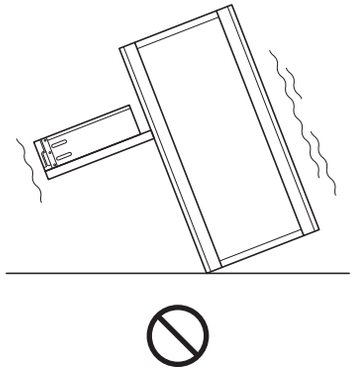
For installation stability, fixed shelf dedicated to 19-inch rack that supports the load of at least 30 kg is recommended.

- A shelf needs to be secured with at least 4 screws.

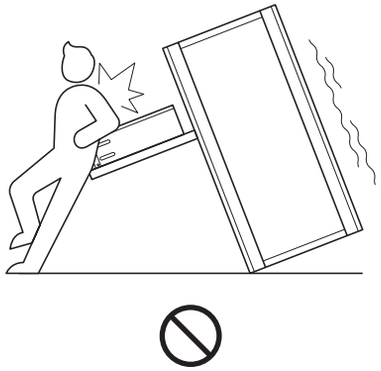


## Precautions when Using Sliding Shelves

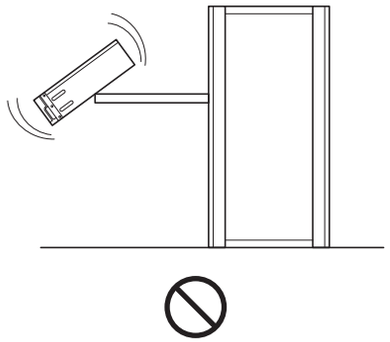
When removing a shelf, fix the rack to the ground so that it does not get toppled.



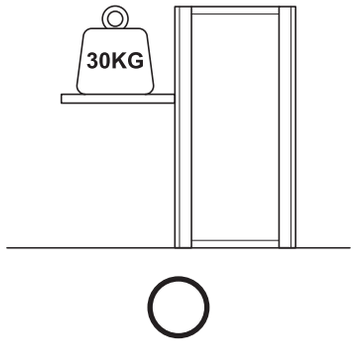
Avoid leaning on the installed product or place an object on it while its shelf is pulled out.



When sliding in/out the shelf, be careful not to drop the product.



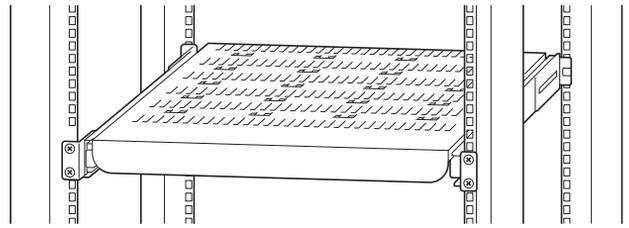
Use a shelf that supports the load of at least 30 kg while it is pulled out, and ensure that there is no deformation on the rail part while in use.




## How to Install Rack

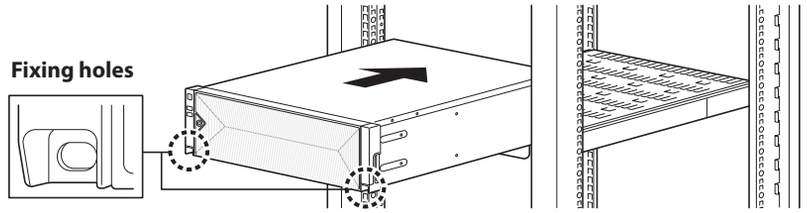
**1** Mount the fixed or sliding shelf onto the 19-inch rack.

- See the manual provided by the manufacturer for installing the fixed shelf.



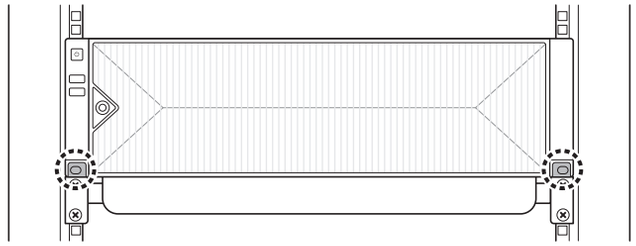
**2** Place the recorder on the shelf and push it until the left/right fixing holes of the recorder align with the mounting flange holes of the 19-inch rack.

- Cage nuts must be assembled in the mounting flange holes of the 19-inch rack.



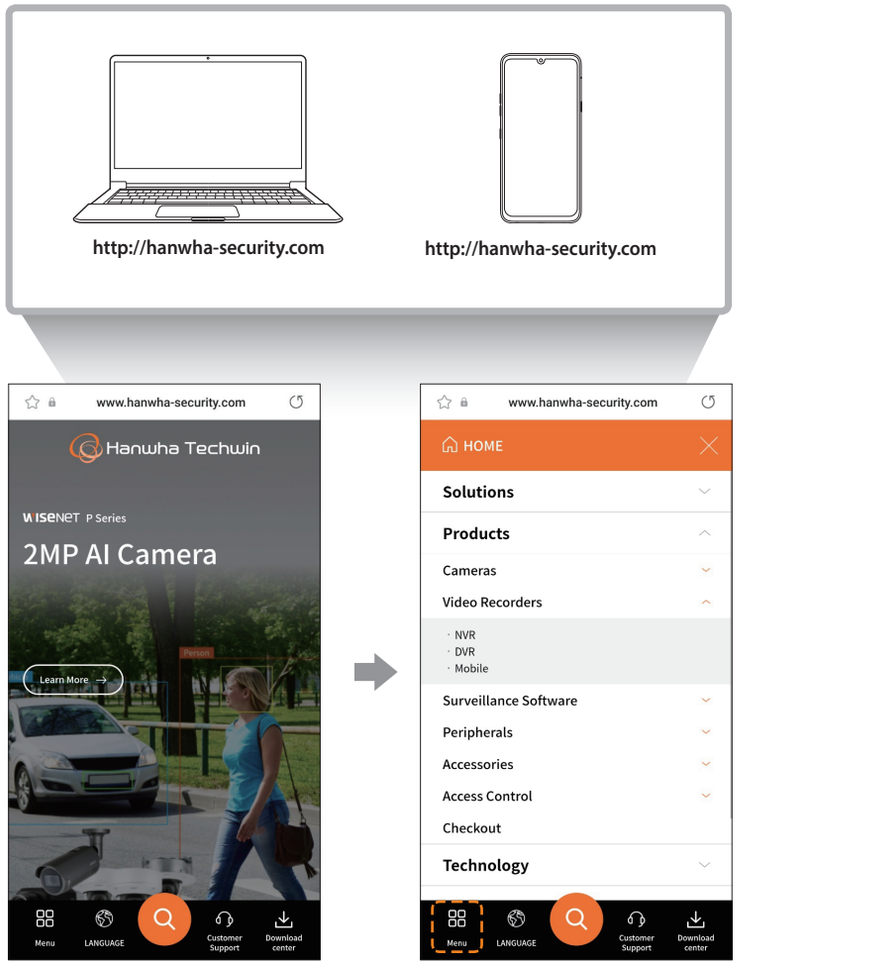

**3** Insert the screws in the left/right fixing holes of the recorder to secure the recorder.

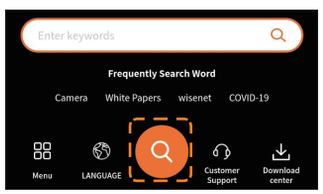
- Fixing nuts and cage nuts for the recorder are not shipped with the product. They are separately sold at the place where you purchased the shelf or rack. (M6 nuts and cage nuts of head size equal to 12 mm or less are recommended.)

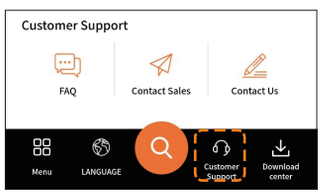


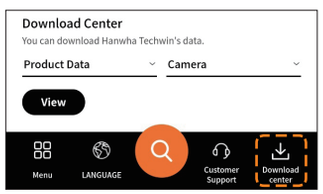
## Using Product Information

You can check the product information/manual/firmware information/FAQ/HDD compatibility list on the homepage or mobile web of your smartphone.



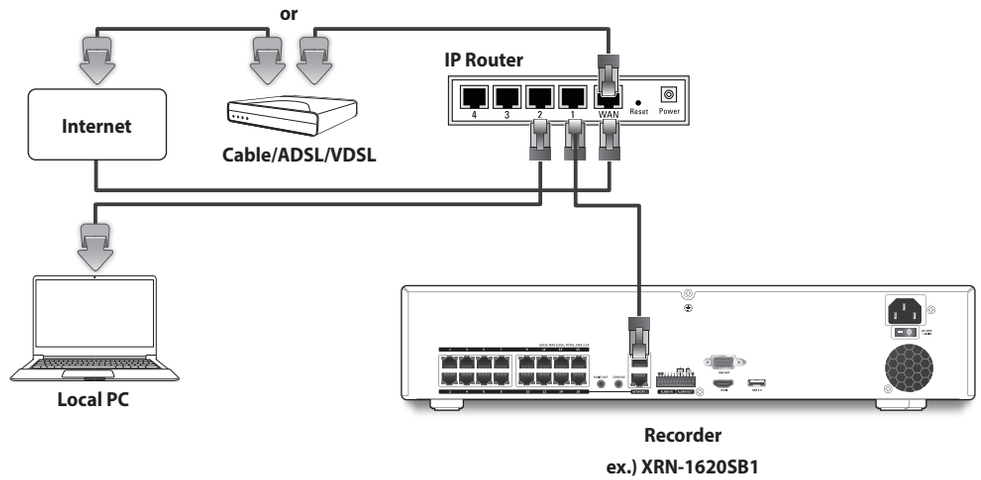




## Connecting to a Network Using a Router

If you want to add 1-3 PCs and recorders in an environment using xDSL/Cable modem, you can use the router with only one Internet line.

This guide is an installation guide for network beginners. Follow the instructions to set up your router, local PC, and recorder.

### Connecting the cable




### Connecting a router with PC

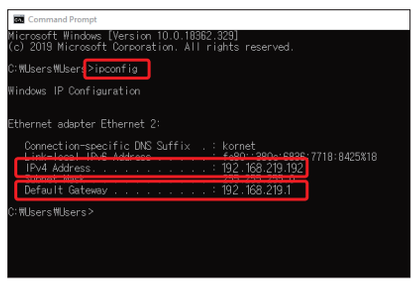
■ Refer to the router's user manual.

### Connecting a recorder and a router

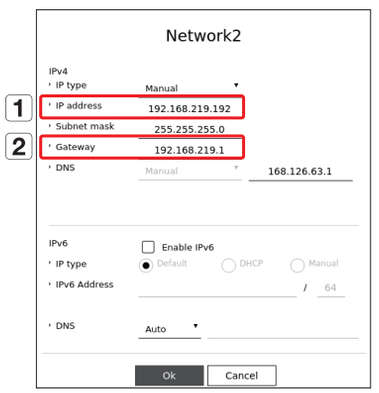
Move to <**IP & Port**> of the Recorder <**Network**> Setting menu, and set the 1 <**IP address**> and 2 <**Gateway**> in <**Setup**>.

※ The <**Default gateway**> checked in the [**cmd.exe**] window of the local PC and the <**Gateway**> of the recorder must be the same.

※ The first three numbers of the recorder <**IP address**> should match the first three of the <**Default gateway**> checked in the [**cmd.exe**] window of the local PC.




<cmd screen>

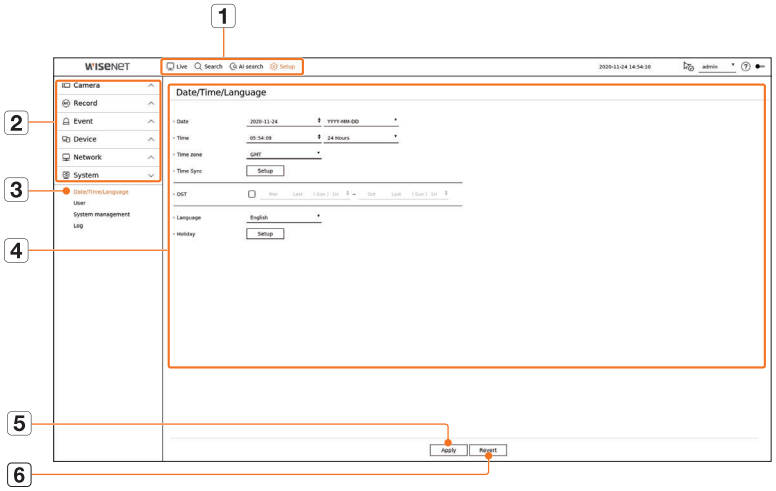



<ex. Recorder screen>

# setup

Sets the camera, recording, event, device, network, and system environment.

## SCREEN LAYOUT OF THE SETUP




| Item | | Description |
|---|---|---|
| 1 | **Menu** | Click each menu to go to the menu screen. |
| 2 | **Top menu list** | Configure the settings or select a parent item to change the existing settings. |
| 3 | **Sub-menu list** | Among the sub-menus of selected parent menu, select a desired item to set. |
| 4 | **Detailed Menu** | Click desired item's input field to change and enter a desired value. |
| 5 | **Apply** | Apply the modified settings. |
| 6 | **Revert** | Revert to the settings used before the change. |

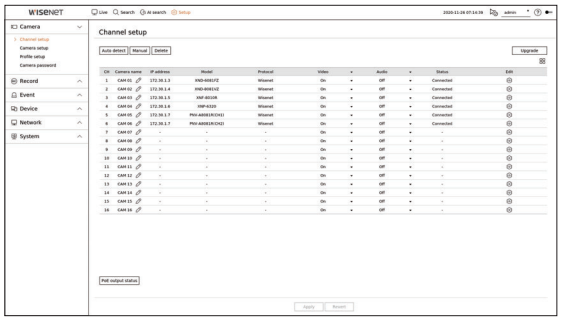
## SETTING THE CAMERA

You can access to the channel setup, camera settings, and profiles and camera password-related settings.

### Setting the Channel

You can register a network camera for each channel and make connection between.

**Setup > Camera > Channel setup**




■ When you register a camera for the first time in the "**Setup** > **Camera** > **Channel setup**" menu, the camera setup screen will be displayed. For details, refer to the "**Getting Started** > **Camera Setup**" page of the table of contents.

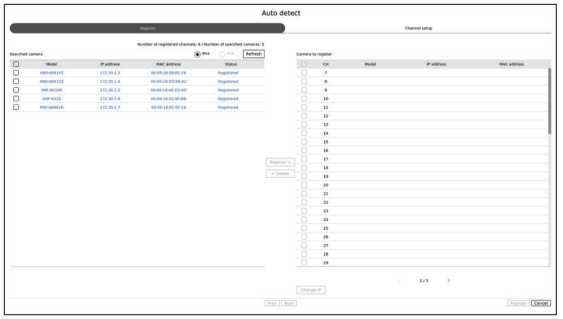
- : Displays the camera of the corresponding channel as a list or a thumbnail.
  - Camera searched with ONVIF does not provide previews.
- Camera name : Provide a camera Name. You can enter up to 15 letters including spaces.
- IP address : Display the IP address of a network camera.
- Model : Show the camera model name.
- Protocol : Show the protocol information of a registered network camera.
- Video
  - On/Off : You can turn ON/OFF the selected channel's camera. If the camera video is turned off, a blank screen is displayed.
  - Covert1 : Shows information other than the video of the selected channel. For privacy protection, it does not display the video while the recording continues.
  - Covert2 : Shows nothing but an empty screen while the recording continues.

■ If the channel is set to <**Covert1**> or <**Covert2**> mode, the channel's sound is not hearable. However, the channel's sound is recorded if its Audio setting is set to <**On**>, even the sound is not heard in Live mode.

- Audio
  - If set to <**On**>, you can turn the audio of the channel ON/OFF on the Live screen.
  - If set to <**Off**>, the channel's audio is off on the Live screen and not recorded.
- Status : Display the connection status.
- Edit : You can change the connection information of the camera.
- Upgrade : You can check the camera's version, upgrade version, and status and upgrade it.
- PoE output status : For products that support PoE, this shows the current status of the connected PoE. For products that support PoE, refer to the "**Functions Supported by Model**" page.

■ If you cannot register a camera after initializing the system, check the network setting. As the system is initialized and the network setting is reset, the camera's network bandwidth will be different from the product's network bandwidth, so it will be impossible to register a camera.

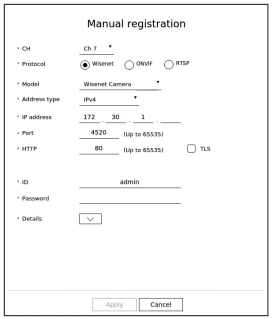
## Automatic Registration of Network Cameras




1. In the <**Channel setup**> field, click on the <**Auto detect**> button.
2. <**Auto detect**> window appears.
   - Click < > in the camera list on the live screen to automatically search and register the camera.
3. Select a camera to register in the <**Searched camera**> list and press the <**Register**> button. You can check the selected camera in the <**Camera to register**> list.
   - An already registered camera will be marked in blue in the list.
   - If you search for the camera again or if the IP is an old IP that was not assigned by the DHCP server (such as 192.168.1.100), then press the <**Refresh**> button to check if a new IP has been assigned.
   - <**Status**> shows the camera authentication status. In the <**Auth failed**> state, click < > to enter the camera ID and password.
   - Click a header at the top of the list to sort the list according to that header.
4. To change the IP address of the camera, select the desired camera from the <**Camera to register**> list and press the <**Change IP**> button.
5. Click <**Next**> at the bottom of the screen to set the registered camera channel.
6. Press the <**Register**> button on the lower right of the screen to register the selected camera.

■ If you register a camera using a user account—not admin account—the camera features may be limited.
■ When you change the camera ID/password in the camera web viewer, if the camera is already registered in Recorder, you also have to change the camera ID/password information registered in Recorder.
■ When the camera is factory reset, it defaults to the ID and password set in "**Setup > Camera** > **Camera password"**.
■ If the camera's ID and password have already been set, the registered information matches the ID and password set in the "**Setup > Camera** > **Camera password"**. (up to 3 sets)
■ Wisenet camera is registered via Wisenet protocol while a third party camera is registered via ONVIF protocol.
■ A device running a DHCP server should never be connected to a PoE port or a camera setup port. (e.g. router)
■ If your camera uses its own power supply unit, you need to manually register or auto-register the camera.
■ For products that support PoE, refer to the "**Functions Supported by Model**" page.

### Registering a Network Camera Manually




1. In the <**Channel setup**> field, click on the <**Manual**> button.
2. <**Manual registration**> window appears.
   - You can register the camera manually by clicking <+> from the camera list on the live screen.
3. Select a channel and protocol used to connect to a camera.
   The input items may differ depending on the selected protocol.
   - Wisenet : Wisenet camera's protocol can be used.
   - ONVIF : Means the camera supports ONVIF protocols. When connecting a camera that its name cannot be found from the list, select <**ONVIF**>.

     When a camera is registered with ONVIF, if the difference in system time between the camera and recorder is 2 minutes or more, you won't be able to register it. In this case, synchronize the camera and recorder time.

   - RTSP : Comply with RFC 2326, one of "Real Time Streaming Protocol (RTSP)" for real-time streaming.
4. If you select the <**Wisenet**> protocol, check options as necessary.
   - Model : Select a camera model.
     - Unknown : Select when the camera model cannot be identified.
     - Wisenet Camera : You can register Hanwha Techwin's cameras and encoders.
     - Wisenet Multi-Channel : You can register Hanwha Techwin's multi directional cameras and multi-imager cameras. A multi-channel camera is a camera that has multiple camera modules in one body. Auto-registering your camera to Recorder lets you register multiple channels at once. However, if you want to manually register it, you need to register one channel at a time.
     -
   - Address type : Select an address type of the camera.
     - The supported address type may differ depending on the type of the connected product.
     - IPv4/IPv6 : Used to provide the IP address of the camera manually.
     - Wisenet DDNS : This is available only if the camera is registered with the Wisenet DDNS(ddns.hanwhasecurity.com) server. Provide the registered domain for DDNS ID.
       **Example)** http ://ddns.hanwha-security.com/snb5000 ; provide "snb5000" for Wisenet DDNS
     - URL : Used for URL address input.

     The DDNS specs supported by each camera can be checked in the user manual of the corresponding camera.

   - IP address : Provide the IP address of the camera.
   - Port : Provide the device port of the camera.
     - Depending on the camera type, some device ports will not be supported.
   - HTTP : Provide the HTTP port of the camera.
   - TLS : You can set whether to use TLS.
   - ID : Provide the ID of the camera that you want to register.
   - Password : Enter the password of the camera to be registered.
   - Details : You can set the streaming mode.
5. Select <**ONVIF**> or <**RTSP**> for the protocol and enter your input for each field appears.
   - ONVIF : After selecting an IP type, set IP address, ONVIF port, ID, password, and details.
     - IP type : Select the IP type of the camera.
     - IP address : Enter the camera's IP address.
     - ONVIF port : Enter the port number when the address type is IPv4 or IPv6.
     - TLS : You can set whether to use TLS.
     - Channel : Enter the channel to register the camera.
     - ID : Enter the camera ID.
     - Password : Enter the camera password.
     - Details : You can configure the authentication mode and streaming mode.
   - RTSP : Set URL, ID, password, and details.
     - URL : Enter your RTSP access address. For more information, see your camera user manual.
     - ID : Enter the camera ID.
     - Password : Enter the camera password.
     - Details : You can set the streaming mode.

     If ONVIF or RTSP protocol is selected, you can set the streaming mode in the Details section.
     - TCP : The connection to network camera operates in the RTP over TCP mode.
     - UDP : The connection to network camera operates in the RTP over UDP mode.
     - HTTP : The connection to network camera operates in the RTP over TCP (HTTP) mode.
     - HTTPS : The connection to network camera operates in the RTP over TCP (HTTPS) mode.

**If you want to check the error details of camera registration**

If you failed to register a camera, the reason for the failure will be displayed.

- **Connection failed due to unknown error.** : This message appears if the camera has failed to be registered due to unknown connection status.
- **Due to the camera account locking, access has failed.** : When you enter a wrong ID/password 5 times to login to the camera account, this message is displayed.
  Try to log in again after 30 seconds. If the same message appears, you may need to check whether someone has tried to access your camera account from the outside.
- **Connected successfully.** : This message appears if the camera is connected successfully.
- **Incorrect model information. Provide the correct model information.** : This message appears if the model information provided for registering the camera is incorrect.
- **Authentication has failed.** : This message appears if the ID or password provided for registering the camera is incorrect.
- **Connection has failed due to excessive concurrent users.** : This message appears if the concurrent user count exceeds the upper limit.
- **Connection has failed due to incorrect HTTP port information.** : This message appears if the HTTP port number of the camera is invalid.
- **Connection has failed. Unknown connection status.** : This message appears if the camera has failed to be connected due to a unknown error.
- **User Model Modification** : When registering a new camera, it is named according to the device's default if user set the model to <**Wisenet Camera**>. In case if automatic registration fails, user can change the model name of camera to be registered.

**To edit camera profile**

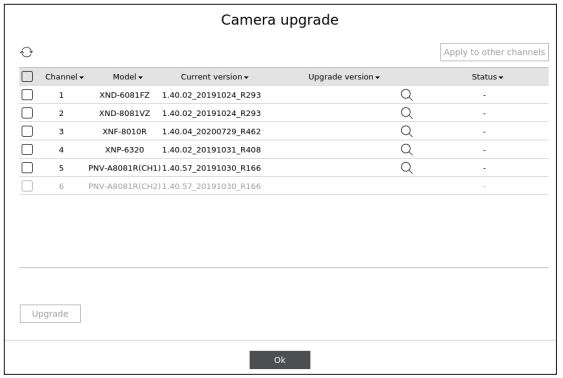
To change profile, refer to the "**Setup** > **Setting the Camera** > **Setting the Profiles**" page in the Table of Contents.

- In case of Recorder, if you set 3 different profiles for live, recording and network profile, one camera will produce video streams accordingly, having different stream formats. Especially, note that the live profile may vary depending on the used screen split mode.
- For cameras, if applied with one profile only, the produced frame rate is fixed as the profile specifies; if applied with multiple profiles, produced video stream's frame rate is not guaranteed. For example, if applied with 2 profiles of 30fps, the camera may transmit streams at 20fps.

## Delete Network Camera

1. Click <**Delete**> in the <**Channel setup**> field.
2. When the delete window appears, select the camera channel to delete.
   - Click <**All channels**> to select cameras for all channels.
3. Click <**OK**> to delete the camera of the selected channel.

## Network Camera Firmware Upgrade




- Channel : Displays channel information.
- Model : Displays the camera model information.
- Current version : Displays the current camera firmware version.
- Upgrade version : Displays the firmware version to upgrade.
  - Press the < > button to select the firmware manually within the USB.
  - < > indicates an upgrade via a remote server.
- Status : Displays the status of the ongoing upgrade (upgrading, successful, failed).

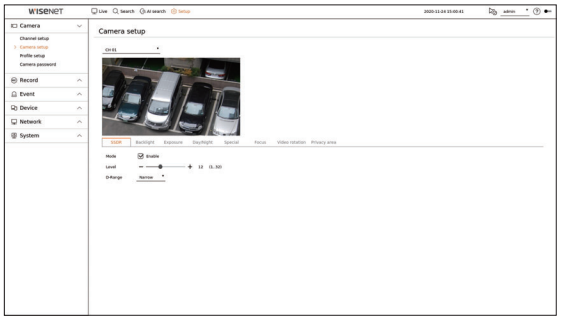
1. Press the <**Upgrade**> button in the <**Channel setup**> field.
2. Displays the upgradeable channel list among the connected cameras.
   - If newer firmware exists on the remote server, the upgrade version is displayed, and the check box is automatically selected.
   - If you do not see the upgrade version, you can press the < > button to get the upgrade version information from the server.
   - Connect a USB camera with camera firmware to the recorder and press the < > button to check and select the firmware file in the USB.
   - Select a channel and press the <**Apply to other channels**> button to apply the firmware to other channels connected to the same model at once.
3. Check the box of the channel you want to upgrade.
4. Click the <**Upgrade**> button. The camera firmware upgrade starts.
   - You can move to another menu while upgrading.
   - You can stop the upgrade by clicking the <**Stop**> button during the upgrade.
   - When the upgrade is completed, you can see the result in the popup window.

- Firmware upgrade is available only for channels connected with the Wisenet protocol and the camera's administrator account.
- If the upgrade version is not displayed even though the camera's firmware is out of date, check the network settings.
- If there are more than 50 firmware files in the top USB folder, the file may not be scanned.
- The system may reboot if USB is disconnected from the recorder during an upgrade via USB.
- Video data of the channel connected to the camera to upgrade may not be recorded.
- Do not format the HDD until the upgrade is complete. The upgrade may fail.

## Setting the Camera Functions

You can set the camera while viewing the live video of the selected camera.

**Setup > Camera > Camera setup**




- You can use this feature in the following cases :
  1. A camera connected to Wisenet protocols.
  2. A camera connected with admin privileges.
- For more details on camera settings, refer to the camera user manual. Settings and operational spec vary depending on each camera.
- This function is not supported in some models.

### SSDR

If there is a significant difference between the dark and the bright areas, increase the brightness of the dark areas to maintain the level of brightness of the entire area.
You can set Mode, Level, and D-Range.

### Backlight

You can view both bright and dark areas.
You can set Mode, WDR level, WDR black level, and WDR white level.

### Exposure

You can adjust the exposure of your camera.
You can set brightness, shutter, SSNR, Sens-up, iris/lens, and AGC.

- Brightness : Adjusts the brightness by setting the exposure value.
- Shutter : Adjusts the brightness by controlling the camera shutter speed. If you select shutter, you can set among the items below.
  - Auto : Adjusts the brightness automatically, controlling the shutter speed of the camera.
  - ESC (Electronic Shutter Control) : Adjusts the brightness automatically, controlling the shutter speed according to the surrounding brightness.
  - Manual : Adjust the brightness by manually selecting the maximum/minimum shutter speed of the camera.
  - Anti-flicker : Reduces flickering in video when screen blur occurs due to different lighting and frequency of attention. The shutter speed cannot be set when the anti-flicker frequency is selected.
- SSNR : Adjusts the brightness by reducing noise and minimizing afterimages even in dark places.
- Sens-up : Automatically adjusts the shutter speed according to the brightness of the current light.
- IRIS/Lens : Adjusts the brightness by automatically or manually adjusting the camera IRIS and lens.
- AGC : Adjust the brightness by amplifying the camera's electrical signal when images are shot in the dark.

### Day/Night

You can change the mode to adjust the color and contrast.
You can set Mode, Dwell time, Negative color, Duration, Alarm input, Switching brightness, Simple focus after Day/Night, and Activation time (color).

- You can select the day/night video display mode in <**Mode**>.
  - Color : Images are always displayed in color.
  - B/W : Images are always displayed in B/W
  - Auto : The video will be displayed in color in normal environments and in B/W at night.
  - External : Displays a color or B/W video by linking an external infrared camera to the alarm in terminal. Set the alarm in item when selecting the <**External**>.
  - Schedule : Controls the video output mode by directly inputting the color video activation time. Click <**Setup**> and enter the activation time.

### Special

You can set DIS (Digital Image Stabilization), Defog, and Defog level.

### Focus

You can adjust the focus of you camera's video.
You can set Focus, Zoom, Simple focus, and Initialize focus.

### Video rotation

You can set flip/mirror modes and hallway view.

### Privacy area

You can set an area to be hidden in the camera image range to protect privacy. You can select whether or not to use the privacy setting and set up to 32 new privacy areas.

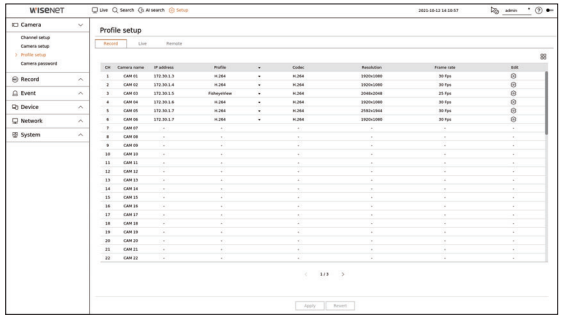
- With a PTZ camera, it is not possible to configure settings, and when it is permitted, the setting area may be incorrect.

## Setting the Profiles

### Setting the Recording Profile

You can configure the video profile settings for instructing the network camera (connected to each channel) to make recording.

**Setup > Camera > Profile setup > Record**



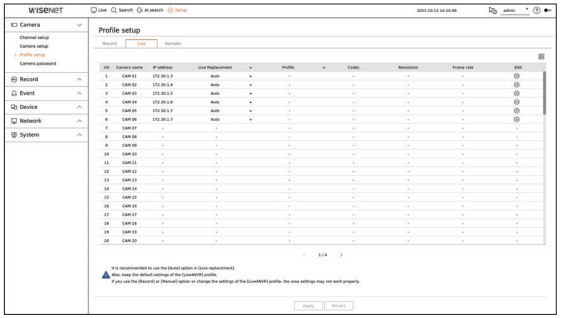
- You can configure the settings only for the profiles that are supported by the camera.
- If the profiles used for recording and network are different, camera's video feed may not comply with the frame rate as specified in the camera.
- It is recommended to set the identical codec for the Record/Live/Remote profile when setting the camera profile.

- : Displays the camera of the corresponding channel as a list or a thumbnail.
- Camera name : Display the camera name.
- IP address : Display the IP address of a camera.
- Profile : You can select the recording profile for selected channel.
- Codec : You can check the codec for selected channel.
- Resolution : You can select the resolution for selected channel.
- Frame rate : You can set the frame rate for selected recording profile.
- Edit : You can add, change, and delete the camera profiles.

### Setting the Live Profile

You can change the live transfer settings of the network camera.

**Setup > Camera > Profile setup > Live**

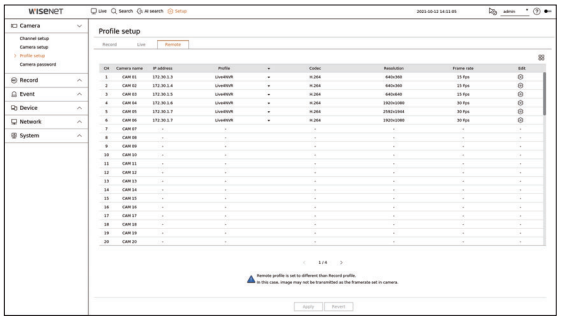


- : Displays the camera of the corresponding channel as a list or a thumbnail.
- Camera name : Display the camera name.
- IP address : Display the IP address of a camera.
- Live replacement : You can select the live profile setup mode.
  If you select <**Manual**> the profile setup items are enabled, and you can change settings manually.
  - Auto : For the profile for live monitoring, a profile optimized for each split mode is displayed, along with the '**Live4NVR**' profile automatically generated at the time of the camera registration.
  - Manual : Live monitoring is performed with the profile selected by the user from the registered camera profiles.
  - Record : Live monitoring is performed with the profile set for recording.
- Profile : You can set the camera profile.
- Codec : Show the codec of the selected profile.
- Resolution : Show the resolution of the selected profile.
- Frame rate : Show the frame rate of the selected profile.
- Edit : You can add, change, and delete the camera profiles.

## Setting the Remote Profile

You can set the video profile transmitted to the network.

**Setup > Camera > Profile setup > Remote**



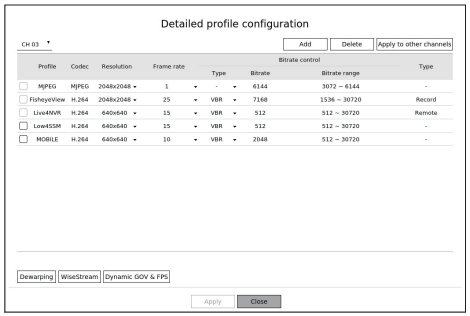

- ▦: Displays the camera of the corresponding channel as a list or a thumbnail.
- Camera name : Display the camera name.
- IP address : Display the IP address of a camera.
- Profile : Select a network profile for the connected camera.
- Codec : Show the codec information for the selected network profile.
- Resolution : Display the resolution for the selected network profile.
- Frame rate : Shows the selected network profile's frame rates.
- Edit : You can add, change, and delete the camera profiles.

■ If the profiles used for network and recording are different, camera's video feed may not comply with the frame rate as specified in the camera.

## Editing the Profiles

You can change the video settings of a registered network camera for each channel.

**Setup > Camera > Profile setup**




- Channel selection : You can select camera channels to change their video transmission settings.
- Add : You can add camera profile. Click on the <**Add**> button to launch the addition window.
  Enter the information and click on the <**OK**> button to add it to the list.
- Delete : You can delete the selected profile from the list.
- Apply to other channels : If you select <**Apply to other channels**>, "**Apply to other channels**" confirmation window will appear.
  After selecting channels that the settings will be applied to, click on <**OK**> to apply them to the selected channels.
- Profile : You can check the video profile of the camera connected in the camera setup.
- Codec : You can check the codec for the selected channel.
- Resolution : You can change the resolution of the selected channel.
- Frame rate : You can change the frame rate of the selected channel.
- Bitrate control : You can change the bitrate of the selected channel.
- Type : Displays the currently applied profile.

■ If you change specific profile settings for each product, the frame rate's setup range may be changed.
Example) If you set the frame rate for the first profile to 30 fps, then the setting range for the second profile may be changed to 15 fps.

■ Any settings other than codec, resolution, and frame rates can be changed in the setup menu of the camera web viewer. For camera web viewer, refer to the "**Setup Viewer** > **Setting the Camera** > **Camera Setup**" page in the Table of Contents. Click <**Camera webviewer**> button for connection.

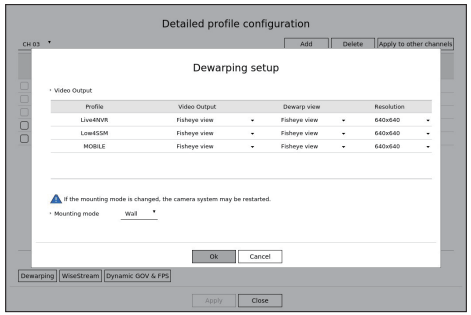
■ If you change the current profile settings, you may encounter an interrupted playback on the recording or live screen for a certain time.

■ Changes made in your camera's setup page will be applied immediately. But any changes made through the camera's online website, it may take up to 3 minutes to apply the changes.

■ Bitrate settings are not supported for ONVIF cameras.

## Dewarping Setup

Press the <**Dewarping**> button at the bottom of the <**Detailed profile configuration**> window to go to the distortion correction setup popup window for each channel.



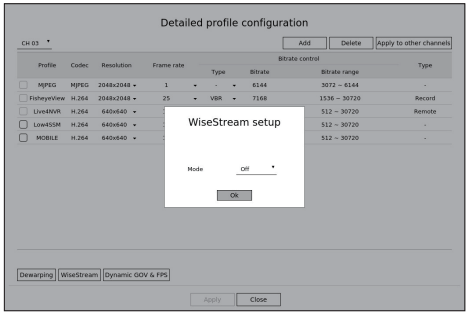

- Profile : Displays the profile type.
- Video output / Dewarp view: You can set **<Video output**> and <**Dewarp view**> for each profile type.
  - Fisheye view : If you select **<Fisheye view**> from **<Video output**>, the **<Fisheye view**> is automatically selected for <**Dewarp view**>.
  - Dewarp view : If you select **<Dewarp view**> from <**Video output**>, you can set <**Quad view**>, <**Panorama**>, or <**Quad view 1 - 4**> for <**Dewarp view**>.
    - You can select view modes supported by your camera.
- Resolution : You can set the resolution of the profile.
- Mounting mode : You can change the fisheye installation type. You can select a view mode from among ceiling/ground/wall depending on the installation location.

- If there is no camera registered in the Recorder that supports fisheye view, Dewarping Setup will not be available.

## How to set WiseStream

Function to analyze the complexity of the video and effectively reduce the data size while maintaining the quality. For details, refer to the camera's help or the product's user guide.

Press the <**WiseStream**> button at the bottom of the <**Detailed profile configuration**> screen to go to the WiseStream setup popup window for the channel.



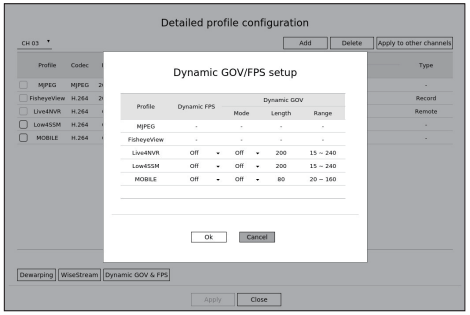

- Mode : You can choose the degree of video compression. You can choose <**Off**>, <**Low**>, <**Medium**>, or <**High**>.

- WiseStream setup cannot be executed if there is no camera registered in Recorder that supports WiseStream.

### Dynamic GOV/FPS setup

Dynamic GOV can be used to automatically change the length of GOV depending on the video condition. For details, refer to the camera's help or the product's user guide.

At the bottom of the <**Detailed profile configuration**> screen, press the <**Dynamic GOV & FPS**> button to open the dynamic GOV/FPS setup popup for the channel.




- Profile : Shows the video profile of the connected camera setting.
- Dynamic FPS : Automatically adjusts the frame rate (frames per second) based on the video conditions.
- Dynamic GOV
  - Mode : Set the GOV length to change automatically.
  - Length : Enter the maximum GOV length value to be applied when there is no motion in the video. Minimum GOV value can be set on the camera web page.
  - Range : The range of the input value of <**Length**> is displayed.

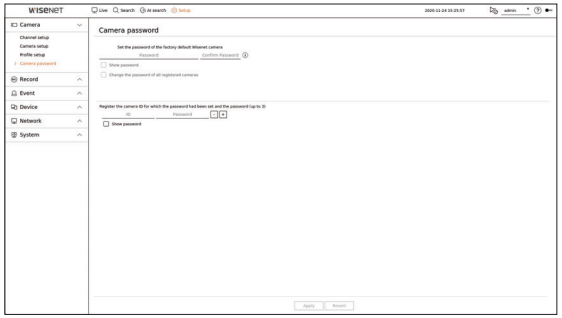
■ Any profile not supported with the dynamic GOV/FPS setting is marked with '-'.

## Setting Camera Password

You can change the passwords of all registered cameras at once.

You can register the camera's ID and password.

**Setup > Camera > Camera password**




- Password : Enter the new password for the factory default camera according to the password setting rules. The initial password for the camera must be entered.
- Confirm password : Input the new password again.
- ID : Enter the ID of the camera whose ID and password are set.
- Password : Enter the password of the camera whose ID and password are set.

■ When the password is in factory reset, it can be changed and managed in a batch.

■ If you click < ⓘ >, a basic guide for password setup is displayed.

■ If you select <**Show password**>, the current password is displayed as the actual input characters.

■ If you check the <**Change the password of all registered cameras**>, the passwords of all cameras are changed with the entered password.

■ Up to 3 sets of camera ID with password and password can be registered.
You can use the registered camera ID/PW to automatically discover and register the camera from the "**Channel setup** > **Auto detect**" screen.

■ A camera password registered with ONVIF and RTSP cannot be changed.

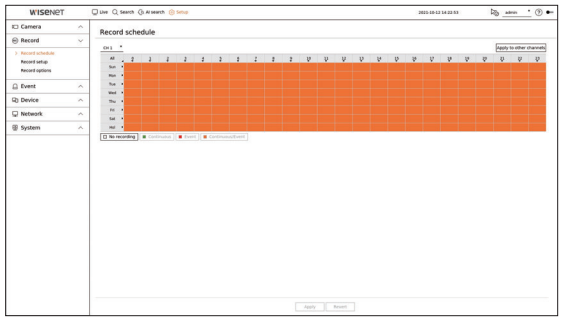
# SETTING THE RECORDING

You can setup scheduled recording, event recording and other recording related settings.

## Record Schedule

If you set a recording schedule for a specific date and time, the recording will start at that specific time.

**Setup > Record > Record schedule**



- Channel : Select the channel you want to set.
- All : The entire time range (Monday through Sunday including holidays, AM 0~ PM 23) will be reserved with the same recording schedule.
- Apply to other channels : If you select <**Apply to other channels**>, "**Apply to other channels**" confirmation window will appear.
  After selecting channels that the settings will be applied to, click on <**OK**> to apply them to the selected channels.

■ Event recording and scheduled recording starts about 3 seconds prior to the event/schedule for guaranteed recording.

**Record setting by the color**

| Color | Function | Description |
|---|---|---|
| **White (  )** | No recording | No schedule / event recording |
| **Green (  )** | Continuous | Scheduled recording only |
| **Red (  )** | Event | Event recording only |
| **Orange (  )** | Continuous/Event | Both scheduled / event recordings |

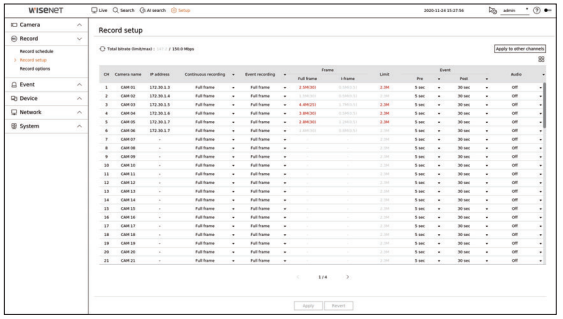
- Each press of a selected cell will cycle through <**No recording**>-<**Continuous**>-<**Event**>-<**Continuous/ Event**>.

## Record Setup

You can set the resolution and number of recordings for each channel when an event occurs or during a normal recording.

You can check frame rates and data transfer amount of Full Frame and Key Frame recordings for each channel, and set the transfer limit for recordings.

**Setup > Record > Record setup**



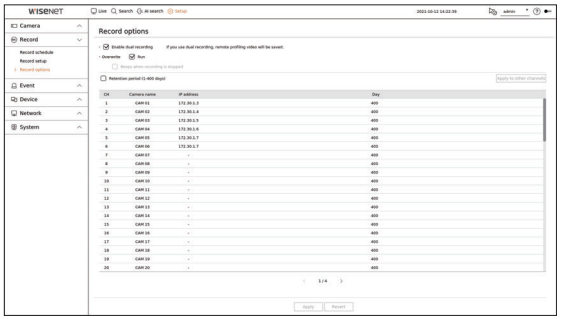
- Apply to other channels : If you select <**Apply to other channels**>, "**Apply to other channels**" confirmation window will appear.
  After selecting channels that the settings will be applied to, click on < **OK**> to apply them to the selected channels.
- : Displays the camera of the corresponding channel as a list or a thumbnail.
- Camera name : Display the camera name.
- IP address : Display the IP address of a camera.
- Continuous recording / Event recording : Set the recording method for Continuous recording or Event recording.
  - Full frame : Records all frames fed by the camera.
  - I-frame : Records only key frames fed by the camera. It depends on the camera's settings.
  - Off : No recording is made.
- Frame
  - Full frame : Shows the amount of data for all the scene recordings.
  - I-frame : Shows the amount of data for the main scene recordings.
- Limit : Set the amount of data allowed for input for each channel.
- Event : When an event occurs, you can set which point you will start or stop recording.
  - Pre : When an event occurs, recording will be started regardless of the time set.
    If you set it to five seconds, recording will start at five seconds before an event occurs.
  - Post : When an event occurs, recording will continue after the time set.
    If you set it to five seconds, recording will continue for a further five seconds after an event is finished.
- Audio : Specify whether to record the sound received from the camera or not.

- If a channel's data transfer exceeds defined allowed limit, then it may affect to other channels, and may force switching to <**I-frame**> recording even when the channel is configured to <**Full frame**> recording mode. For Key Frame recording channels, the icon for limited recording appears on the live screen's top side.
  But if the sum of the limits is below the max limit, you can still receive the entire frames despite exceeding the permitted bitrates for each channel.
- A channel displayed in yellow indicates that the recorded data is not being transferred from the camera and that the recording is being performed temporarily using another profile on the camera.
  Check the channel information to see the applied profile to the channel listed in yellow.
  A channel displayed in orange indicates that the amount of inputted data is greater than the permitted data amount. In this case, it is impossible to record all of the incoming frames. Instead, only part of the frames (1 or 2 frames per second) can be recorded.
  To resolve this issue, you must set the permitted data amount to be greater than the amount of inputted data.
  Refer to the "**Live** > **Live screen mode** > **Check the camera status**" page in the Table of Contents.

## Record Options

You can set recording options, such as enabling dual recording or overwrite of hard disk for repeated recording.

**Setup > Record > Record options**




- Enable dual recording : Select this if you want to record both the recording profile and remote profile at the same time. Enabling dual recording is applied with a profile suitable for split mode during playback.
- Overwrite : Select the recording method when the hard disk storage capacity is full.
  - Checked (☑) : If the HDD is full, this will overwrite the existing data and keep recording.
  - Not checked (☐) : If the HDD is full, this will stop recording automatically.
- Beeps when recording is stopped: If <**Overwrite**> has not been set, this button is enabled. Specifies whether to use beep or not when HDD recording ends.
  If you check it, the beep will sound on the disk full and the recording stops.
- Retention period : If you check this option, the period list box is active, and you can set the automatic deletion period. Specify the deletion period to delete any earlier data than the specified date. However, you can search for data from the current time to the selected date.
  - If <**Overwrite**> has been set, this button is enabled.
  - You can select a channel and set a different recording duration for each channel.
- Apply to other channels : If you select <**Apply to other channels**>, "**Apply to other channels**" confirmation window will appear. After selecting channels that the settings will be applied to, click on <**OK**> to apply them to the selected channels.

- If you press <**Retention period**> when you have completed your settings, all the existing data earlier than the specified period will be deleted automatically. If you need to keep your old data, export it first.

# SETTING THE EVENT

You can set the event-related settings such as whether or not an event is detected for each channel and whether an alarm occurs.

**AI function setup guide**

To use AI function, set any of the following options as necessary : See the relevant page for detailed setup method.

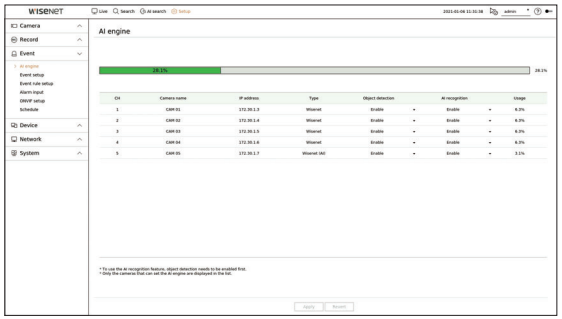
- **Setup** > **Event** > **AI engine**
- **Setup** > **Event** > **Event setup** > **Object**
- **Setup** > **Event** > **Event setup** > **AI recognition**
- **Setup** > **Event** > **Event setup** > **Mask**
- **Setup** > **Event** > **Event setup** > **IVA**
- **Setup** > **Event** > **Event rule setup**

- AI recognition function may have different settings and operation specifications depending on the recorder model and camera.

## AI Engine

You can set whether to use AI events (object detection, AI recognition) from the camera, and check the usage of AI engine.

**Setup > Event > AI engine**




- AI engine status : Shows the AI engine usage status.
  - If the AI engine capacity is full, no additional settings can be made. To set additional AI functions, disable the object detection and AI recognition function from the previously set channel.
- Camera name : Display the camera name.
- IP address : Display the IP address of a camera.
- Type : Displays the camera type.
- Object detection : Sets whether or not to enable object detection for the camera.
- AI recognition : Sets whether or not to enable AI recognition function for the camera.
  - AI recognition works only when the object detection option is set to <**Enable**>.
- Usage : Shows the AI engine usage of the camera.

- The AI engine function is only available on products that support AI. For products that support the AI search function, refer to the "**Functions Supported by Model**" page.

## Event Setup

You can configure whether or not to detect events sent by the camera for each channel and configure detailed settings.

**Setup > Event > Event setup**

- Object : You can set detailed settings for object detection of the connected camera.
- AI recognition : Sets detailed settings for AI detection of the connected camera.
- Mask : Sets detailed settings for mask detection of the connected camera.
- Motion : You can set detailed motion detection for the connected camera.
- IVA : You can set up intelligent video analytics of the connected camera.
- Tampering : You can make detailed settings for tampering detection, such as when the screen of a connected camera is obscured or the camera location is changed.
- Video loss : You can configure the detailed settings for video loss detection on the connected camera.

■ The settings for Object detection may vary depending on the recorder model or the connection of Wisenet AI camera.

### Object

**Setup > Event > Event setup > Object**



- Object detection : You can set whether to enable object detection.
- Object type : You can select the object type to detect.
  - ■ Object items may vary depending on the camera model.
- BestShot : You can set the object to display the bestshot items.
  - ■ Set the same as the item selected in <**Object type**> to display the best shot when an event is detected.
- Detection excluded area : You can set the exclusion area for AI object detection. Click <**Add**> to set the detection exclusion area on the preview screen.
- Sensitivity : Sets the object detection sensitivity.
  - ■ Setting the sensitivity level high increases the object detection rate but also raises the detection error rate.
- Object size : You can set the size of the object to recognize the motion.
  - – Click <**Setup**> to select the minimum/maximum size and set the object size on the preview screen.

■ If detection errors occur frequently, set the detection excluded area or lower the object detection sensitivity.

### AI recognition

**Setup > Event > Event setup > AI recognition**

■ AI recognition function is only available for recorder models that support AI engine function.



- LPR : Sets whether or not to enable license plate number recognition.

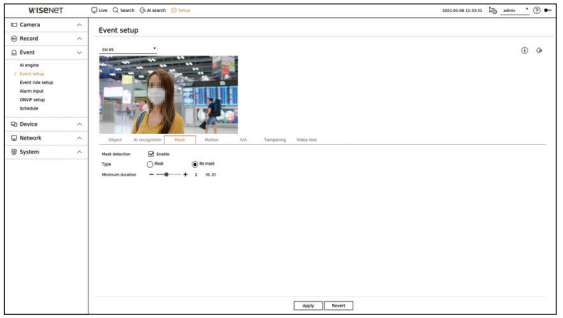
■ AI recognition function may have different settings and operation specifications depending on the recorder model and camera.

■ Clicking <ⓘ> at the top right of the screen shows the AI camera setup guide.

### Mask

**Setup > Event > Event setup > Mask**

■ The settings for Mask detection may vary depending on the recorder model or the connection of Wisenet AI camera.



- Mask detection : Sets whether or not to use mask detection.
- Type : You can select the mask detection type.
- Minimum duration : Sets the minimum observation duration upon mask detection.

## Motion

**Setup > Event > Event setup > Motion**



- Motion detection : You can set whether to enable motion detection.
- MD type : You can set a detection area and a detection excluded area.
  - Detection area : Set the area to detect motion.
  - Detection excluded area : Set the area to not detect motion.
  - Add : After selecting the desired area item, set the area on the preview screen.
  - Area initialization : You can clear all the set areas.
- Object size : You can set the size of the object to recognize the motion.
  - Click <**Setup**> to select the minimum/maximum size and set the object size on the preview screen.
- Detection level : You can set the basic level required for motion detection. Level values can be set for each detection area set in <**MD type**>. If a motion value is bigger than the set level, then a motion detection event is triggered.
- Detection result display : You can overlay the detection area over video.
- Sensitivity : You can set the sensitivity of motion detection for each area. Set a lower sensitivity for an environment where the background and an object are clearly distinguishable and a higher sensitivity for an environment where the background and an object are not clearly distinguishable.
- Activation time : You can set the activation time for motion detection.
  - Always : Detects motion regardless of time.
  - Schedule : Detect motion only during the set period. Click <**Setup**> to set the detection schedule.

■ Each camera product support different features. For more information, see the camera manual or help.

## IVA

**Setup > Event > Event setup > IVA**



- IVA : You can set whether to enable intelligent video analytics.
- Type : You can set a virtual line, virtual area, and detection excluded area.
  - Virtual line : Set the virtual line to enable intelligent video analytics.
  - Virtual area : Set the area to enable intelligent video analytics. You can set the details of virtual areas to fit your purposes.
    - Intrusion : Creates an event when the motion of an object in the designated area is detected.
    - Enter : Creates an event when a moving object enters into the target area from the outside.
    - Exiting : Creates an event when a moving object goes out of the target area.
    - Appear/Disappear : When an object which does not exist inside the area designated by the user appears inside the area without passing the area line and remains for a certain period of time, or if an object which exists inside the area disappears, an event is created. You can enter the duration to be recognized as an event.
    - Loitering : Creates an event when the motion of a loitering object in the virtual area is detected. You can enter the duration to be recognized as an event.
  - Detection excluded area : Set the area to not enable video analytics in the virtual line and the virtual area.
  - Add : After selecting the desired area item, set the area on the preview screen.
  - Area initialization : You can clear all the set areas.
- Sensitivity : You can set the motion detection sensitivity for the virtual line and the virtual area.
- Detection result display : You can overlay the detection area over video.
- Activation time : You can set the activation time to recognize motion analysis.
  - Always : Detects motion analysis regardless of time.
  - Schedule : Detects motion analysis only during the set period. Click <**Setup**> to set the detection schedule.
- Object size : You can set the size of the object to recognize the motion.
  - Click <**Setup**> to select the minimum/maximum size and set the object size on the preview screen.
- Object : You can set the object to enable video analytics.
  - Objects are visible only when an AI camera is connected.
  - Object details may vary depending on the recorder model.

■ Each camera product support different features. For more information, see the camera manual or help.

## Tampering

**Setup > Event > Event setup > Tampering**



- Tampering detection : You can set whether to enable tampering detection.
- Sensitivity : Sets the tampering detection sensitivity.

■ Since tampering detection is designed for optimal performance based on the sensitivity level by the user, there may be no noticeable change in the tampering detection performance depending on the sensitivity level under normal monitoring conditions.

## Video loss

**Setup > Event > Event setup > Video loss**

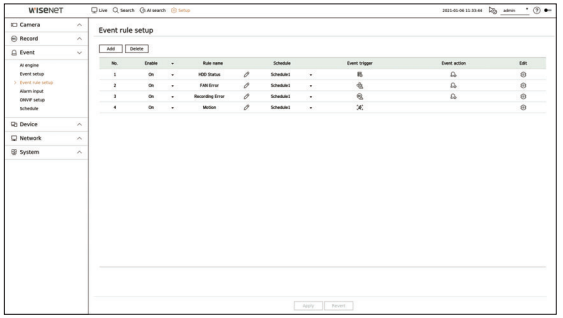


- Sensitivity : You can set the video loss detection sensitivity. Depending on the sensitivity level (5 second intervals), you can delay the occurrence of an event from 15 seconds (level 1) up to 60 seconds (level 10) later.

## Event Rule Setup

You can set the event trigger and action rule to output an alarm when an event occurs.

**Setup > Event > Event rule setup**



- Add : Adds a new event rule by selecting from rule creation or rule copy.
- Delete : Deletes the selected event rule.
- Enable : Specify whether to enable the corresponding event rule.
- Rule name : Displays the name of the event rule. You can change the name of the event rule by clicking < >.
- Schedule : Displays the schedule set in the event rule.
- Event trigger : Displays the event trigger set in the event rule.
  - The event trigger will be displayed in the live video window when an event is received, and will be saved as an event log record.

| Item | Description |
|---|---|
| | Motion detection |
| IVA | IVA |
| | Face detection |
| | Auto tracking |
| | Tampering detection |
| | Defocusing detection |
| | Fog detection |
| | Audio detection |
| | Sound classification |
| | Alarm input (camera), Alarm input (NVR) |

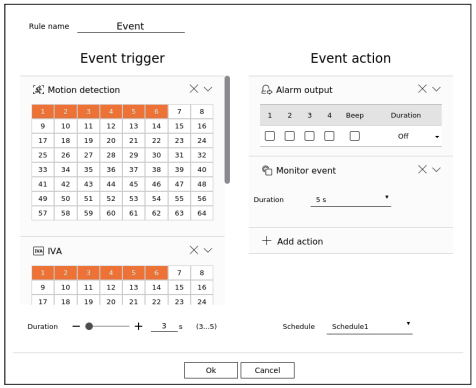
| Item | Description |
|---|---|
| | Video loss detection |
| | SD Card |
| | Dynamic event<br>Example) DigitalAutoTracking, Queue, ShockDetection, MaskDetection |
| | ObjectDetection |
| | Manual trigger |
| | Video loss recovered |
| | System event<br>(Change password, Upgrage, HDD state, Fan failure, Power On/Off, Start manual recording, End manual recording, Recording error, Account locked) |

- Event action : Displays the event action set in the event rule.

| Item | Description |
|---|---|
| | Record/Go to preset |
| | Alarm output |
| | E-mail |
| **FTP** | Transfer images to FTP server |
| | Mobile push notification |
| | Monitor event |
| | Shutdown |
| | User coding |

- Edit : Changes the registered event rule.

## Register a new event rule




1. Click <**Add**> in the <**Event rule setup**> field.
2. Click <**Create rule**>.
   - Copy rule : When you select one of the event rules already created, it is added to the events list. You can click < > to modify the rule name.
3. Set the details when the event rule setting window is displayed.
   - Rule name : Enter the name of the event rule.
   - Event trigger : Click <**+ Add trigger**> to set the event trigger and channel.
     - Up to three event triggers can be added.
     - The event trigger option may vary depending on the recorder model.
     - Duration is the waiting time to recognize the occurrence of a selected event. You have to select two or more event triggers to set this option. The event action will run only when all the selected event triggers occur within the duration time.
     - Event triggers will be displayed on the live screen when an event occurs and are used for event log recording.
     - To select a channel to detect an event trigger, click or drag the desired channel in the channel table. It will be displayed in orange when a channel is selected.
   - Schedule : Select the schedule to run the event action.
   - Event action : Click <**+ Add action**> to set the event action.
     - Record/Go to preset : Set the PTZ preset to be displayed when an event occurs. Click < > to set camera presets for each channel.
     - Alarm output : Set the alarm out to be generated when an event occurs. Select the output terminal according to the number of alarm terminals on the recorder to set the alarm duration.
     - E-mail : Set up users to receive e-mail when an event occurs. Click < > to select users to receive the e-mail.
       - Set the interval for sending events in the "**Setup** > **Network** > **E-mail** > **Events**" menu.
     - FTP: When an event occurs, the images are transferred to the designated FTP server. The overlapping events that occurred during the set delivery interval will be sent as text in an html format file.
       - Set the FTP connection and delivery interval in the "**Setup** > **Network** > **FTP**" menu.

– Mobile push notification : When an event occurs, the event push notification will be displayed on the connected smart phone.

– Monitor event : When an event occurs, the screen of the corresponding channel will be displayed by switching to the live screen. When selecting event monitoring, set the alarm duration in consideration of network conditions.

– Shutdown: When an event occurs, a pop-up window will appear. You can select <**Shutdown**> or <**Cancel**>.

– User coding: It can be selected when <**Manual trigger**> is set. You can set the WISENET camera to execute the SUNAPI command entered in <**User coding**> when an event occurs. Click <**Test**> to test the execution of the entered SUNAPI command.

■ Event action will run only when all set event triggers occur. If only one of the multiple events set has occurred, the event action will not run.

■ Set the event action only when necessary.

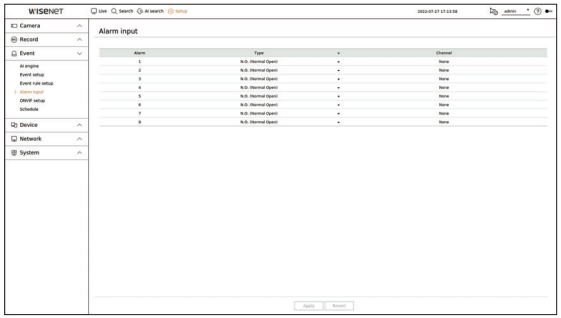
**4.** Click <**OK**> at the bottom of the setting window to register the event rule.

## Alarm Input

You can set the operation of the alarm sensor.

■ This function is not supported in some models.

**Setup > Event > Alarm input**

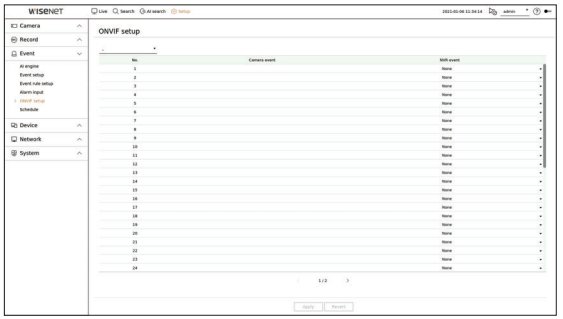



- Type : Set the mode in which the alarm sensor will operate.
  – Off : Alarm sensor is disabled. Alarm is not used.
  – N.O. (Normal Open) : Sensor is opened. If the sensor is closed, it generates alarm.
  – N.C. (Normal Close) : Sensor is closed. If the sensor is opened, it generates alarm.
- Channel : You can set the channel to execute an event action when a signal is input to the selected alarm. This is possible when <**Alarm input(NVR)**> trigger and event action are set up in the "**Event**> **Event rule setup**" menu.

## ONVIF Setup

You can set the details related to camera events registered with the ONVIF protocol.

**Setup > Event > ONVIF setup**

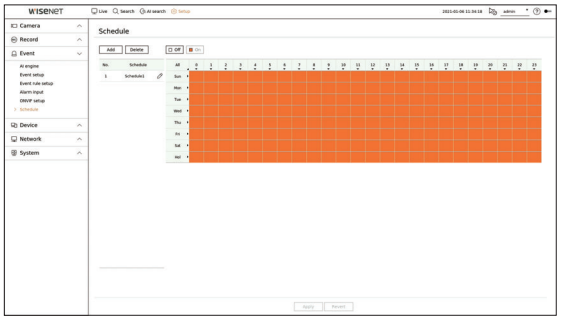



- No. : Select the channel to which the ONVIF camera is registered.
- Camera event : It shows the list of all the events supported by a camera by using the ONVIF protocol.
- NVR event : You can map the list of events supported by a camera to events that the Recorder can detect. There is no default value. It only shows the value sent by a camera.

## Schedule

When setting the event rule, you can set the operating time of the event action.

**Setup > Event > Schedule**



- Add : Add a schedule by setting the desired day and time.
  - Off : Displayed in white and no alarm will be output even if an event occurs.
  - On : Displayed in orange and an alarm will be output only when an event occurs.
    - Click < > to change the schedule name.
- Delete : Delete the selected schedule.

- You cannot delete the schedule in use.
- When the alarm is generated on the scheduled time, you can stop the alarm by canceling the schedule.

# SETTING THE DEVICE

You can make the detailed settings for devices such as storage device and monitors.

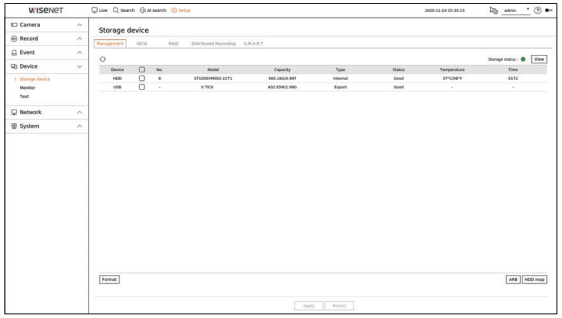
## Storage Device

You can set the storage device usage and check the setting status.

### Checking and formatting the device

You can check storage devices and their capacity, usage as well as status.
The connectable storage devices are HDD and USB.

**Setup > Device> Storage device > Management**



- Device : Displays the storage device type.
- No. : You can check the designated number for the built-in HDD.
  - If you want the find out about the location corresponding to the HDD number, refer to the <**HDD Map**>.
- Model : Displays the model name of the storage device.
- Capacity : Displays the amount of storage device use and the full capacity.
- Type : Displays the usage type of the storage device.
- Status : Displays the current working condition of a storage device.
  - If the Status is set to <**Not Defined**>, format the storage device before use.
- Temperature : You can check the temperature of the HDD mounted in the Recorder.
- Time : Displays the use time of an HDD.
- Format : Select a storage device and click on format after which a format confirmation window appears. Click on the <**OK**> button to format the selected storage device.

- Storage Status : Displays the working status of a storage device. Click the <**View**> to display the storage status window.
  - Red : Displays the situation of video loss.
  - Green : Displays the normal situation without video recording losses.
  - View : Click <**View**> to see detailed information.




  - HDD write : Displays the current rate of recording.
  - Present loss : Displays the current recording loss rate.
  - Worst loss : Displays the maximum amount of losses up until now.
  - If loss is continuously generated, check the following.
    For more information, refer to the "**Troubleshooting (FAQ)**" in the Appendix.
    - When data is lost due to system failure (reset the rate of data transferred from the camera)
    - When there is a problem in HDD recording performance due to an HDD malfunction (check the HDD error or replace the HDD)

  - Formatting will delete all the recording data that has been saved. Be careful.
  - While formatting is ongoing, you cannot record video.
  - Do not remove a formatting device until it is finished.
  - After installing an HDD, if the state of use of the HDD is <**Not Defined**>, format the HDD before use. (If the warning message persists after formatting, replace the HDD with a new one)

- ARB : Video that was not recorded due to a camera disconnection can be backed up after the connection with the camera is re-established. Press the button and an <**Auto recovery backup (ARB)**> window is opened.
  - Select HDD : Select a HDD to be set to ARB.
  - Capacity : Shows the capacity of the HDD to be set as ARB.
  - Select channel : Select a channel to run the ARB.
    - You can select multiple channels. If you select <**All channels**>, all channels will be selected.
  - ARB bandwidth : Select a bandwidth for the ARB function.

  - The ARB feature is available only when your video is saved in the SD card after registering your Wisenet camera using the Wisenet protocol. This is only supported in SUNAPI 2.3.2 or later.
  - Set the profile bitrate used for recording a video in the SD card of camera to 6144 kbps or below.
    For more information on how to set the SD card recording profile, see your camera manual.
  - To use the ARB function correctly, both the camera and Recorder should be time synchronized with the time server.
    Refer to the "**Setup** > **Setting the System** > **Date/Time/Language**" page in the Table of Contents.
  - ARB function is activated when Recorder starts/when the channel camera set is reconnected/when an Recorder recording missing section recurs at regular intervals after Recorder starts.
  - Recorder recording missing section that can be restored with the ARB function is for 24 hours backwards from the point when the ARB function is activated.
  - You can check which channels have ARB function activated through the message on each channel screen that is displayed when selecting a channel.
    Refer to the "**Live** > **Live screen mode** > **Channel Information Display**" page in the Table of Contents.
  - For automatically recovered files through ARB, refer to the "**Search** > **ARB Search**" page in the Table of Contents.
  - ARB storage capacity is recommended to be at least one day.
    **Example)** If you saved 64 channels with 1 Mbps each, the ARB capacity should be set to 0.7 TB or higher.

- HDD map : You can check the location according to the assigned number for the HDDs installed inside.
  - Refer to this when servicing or installing an additional HDD.

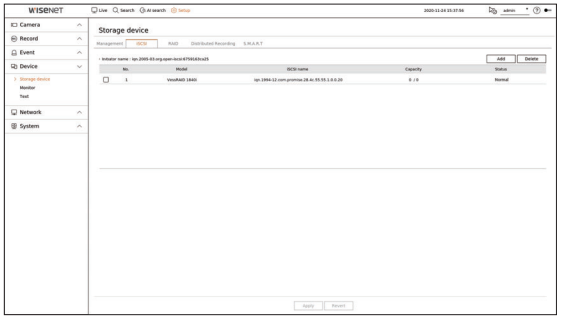
  - Do not add or remove an HDD while Recorder is running.

## Connecting the iSCSI

This function is only available for products that support iSCSI. For products that support iSCSI, refer to the "**Functions Supported by Model**" page.

When connecting an iSCSI device to the recorder, you can search for the iSCSI device and connect and disconnect it.

**Setup > Device> Storage device > iSCSI**

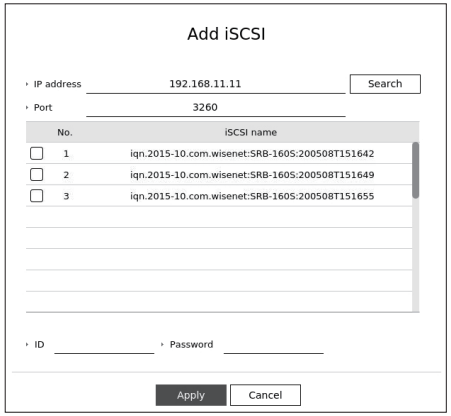



- Add : Add an iSCSI device.
- Delete : Delete the registered iSCSI device.
- Model : Displays the iSCSI model name.
- iSCSI name : It displays the name of iSCSI in compliance with the iSCSI protocol format.
- Capacity : It displays the currently used amount/total capacity of iSCSI devices.
- Status : Displays the status of an installed iSCSI device.

## List of products supported

Promise Technology vessRAID 1740i / 1840i / 2600i 1ea JBOD 3ea / SRB-160S

## Adding an iSCSI device




1. In the iSCSI window, click on the <**Add**> button.
2. In the <**Add iSCSI**> window, enter your IP address and port number and click <**Search**>.
3. In the <**iSCSI name**> list, click on a device to add.
4. After entering ID/password, click on the <**Apply**> button.

- iSCSI device requires an independent port. Use a general port instead of a camera port.
- When using a hub to connect an iSCSI device with recorder, make sure to use the GIGA hub and to use an independent network to save data normally.
- When the Recorder is connected to an iSCSI device, if you change the iSCSI equipment setting, a problem can occur.
- A HDD to be mounted in vessRAID should be listed in the RAID compatibility list.
- Each volume of an iSCSI device is recommended to be 16 HDDs.
- When you register an iSCSI device in the Recorder for the first time, you need to format it first.
- The iSCSI lun mapping function is supported.
- If you activate the LUN mapping function in the iSCSI device, the LUN can only be connected to a Recorder which is mapped.
- More than one mapped lun should be available to connect to the initiator when using lun mapping.
- An internal HDD must be mounted in the Recorder before connecting the iSCSI device.
- For the stable communication of large data, register only one iSCSI device to Recorder to use it.

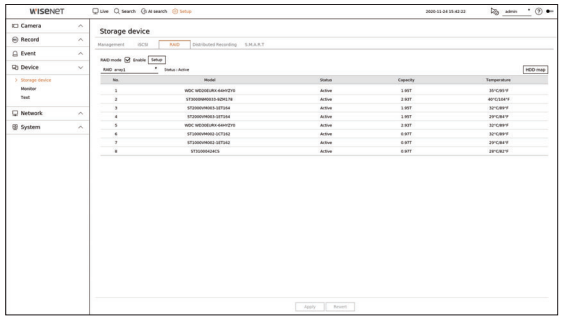
## RAID mode setting

This function is only available for products that support RAID. For products that support RAID, refer to the "**Functions Supported by Model**" page.

If you enable the RAID (Redundant Array of Independent Disks) mode, you can safely recover your data even if your system HDD is damaged.

- **RAID for each product**
  - 8 HDDs model : Supports Array 1
  - 16 HDDs model : Supports Arrays 1 and 2

**Setup > Device> Storage device > RAID**




- RAID status : Displays the operational status of the RAID.
  - Active : Signals the fact that the RAID is operating normally.
  - Degraded : It is displayed when the one or more HDDs that make up the RAID are malfunctioning. When the maximum number of HDDs allowed in the RAID level are malfunctioning, if an additional HDD malfunctions, you cannot use or restore the RAID. Immediately, replace the HDD and proceed with restoration.
    - For more information about how to replace the HDD and recover the RAID array, refer to the "**Setup** > **Setting the Device** > **Storage device**" page in the Table of Contents.
  - Rebuilding : Indicates that the RAID array is in the recovery process. At RAID level 5 or 6, if the max number of HDDs allowed by the RAID level is malfunctioning, and one more HDD caused malfunction during rebuilding, then you cannot recover or use the RAID array.
  - Fail : This means that the RAID cannot be used or restored.
- Model : Displays the registered RAID model.
- Status : Displays the current operating condition of the HDDs installed in a RAID.
  - Active : Displays that the HDD is operating normally.
  - Faulty : It displays that the HDD is malfunctioning. You need to immediately replace the HDD for smooth recovery of the RAID.
  - Check : A problem occurs on the HDD, requiring replacement or inspection.
  - Ready : If recovery of 2 HDDs is required in the RAID 6 state, HDDs for which rebuild is pending are displayed.
- Capacity : It shows the total capacity of the HDDs that composes a RAID.
- Temperature : You can check the temperature of HDD(s) that compose a RAID.

## RAID mode setting

1. Click on the <**Enable**> or <**Setup**> button.
2. In the use RAID window, select settings of RAID and click on the < **OK**> button.
   - Enable : You can select whether or not to use the RAID mode.
   - Shows the RAID types supported by each product.

| Product | RAID type |
|---|---|
| 32-channel model<br>64-channel model | Level 5, level 6 |

3. It will show the list of HDDs that compose a RAID. In the RAID screen, click on <**OK**>.
4. The data deletion and system rebooting message window will appear. You can click on the <**OK**> button to reboot the system for RAID mode setting.
5. When RAID building is complete, select "**Setup** > **Device** > **Storage device** > **RAID**" to check the build.

- If you disable the RAID mode at RAID level 5 or 6, then every RAID array will be canceled. If you want to cancel only one of RAID arrays in use, then go to the setup window and disable that specific RAID array.
- If the Status of HDD is displayed as Check or Replace under <**Management**>, you cannot use it when configuring RAID.
- When the RAID mode is in use, it is recommended to use HDDs with the same storage space from the same manufacturer.
- If you enable or disable the RAID mode, existing data will be deleted. If you need to keep your old data, export it first.
- RAID Array capacity calculation
  - When you build the RAID in level 5, the available capacity of a RAID is (the least HDD capacity) x (total number of HDDs -1).
  - When you build the RAID in level 6, the available capacity of a RAID is (the least HDD capacity) x (total number of HDDs -2).
- If you use HDDs with different capacity, the HDD with the smallest capacity will be used to build a RAID.

## Recovering RAID Array

1. If the HDD number whose <**Status**> is shown as Faulty or Check is recognized, check the location of HDD to be replaced on the HDD map.
2. Replace the malfunctioning HDD from the recorder with a new HDD.
3. When the recovery starts, the LED of the replaced hard disk lights up in yellow.
   In the "**Setup** > **Device** > **Storage device** > **RAID**" menu, you can check the recovery progress.

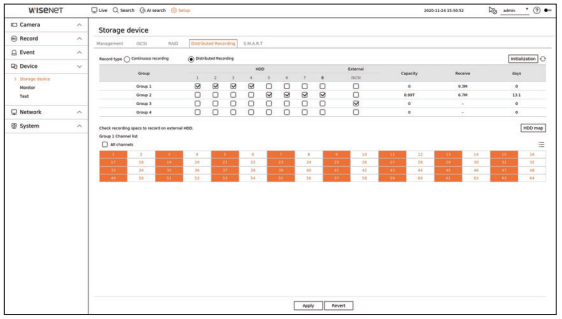
- Replace it with the same model of HDD or an HDD of the same capacity from the same manufacturer.
- A HDD used to build the RAID should be one of the recommended models.
  If it's not possible to use the same model of HDD, then use the HDD with the same capacity from the same manufacturer should be used.
- If you remove the power cord while using the RAID, it can damage it, so be careful.
  For reliable power, it is recommended you use the UPS.
- A new HDD to be replaced should be one that is not RAID configured.

## Distributed Recording

This function is only available for products that support distributed recording. For products that support distributed recording, refer to the "**Functions Supported by Model**" page.

You can save recordings in a distributed manner by distributing HDD(s) of each group.

**Setup > Device > Storage device > Distributed recording**



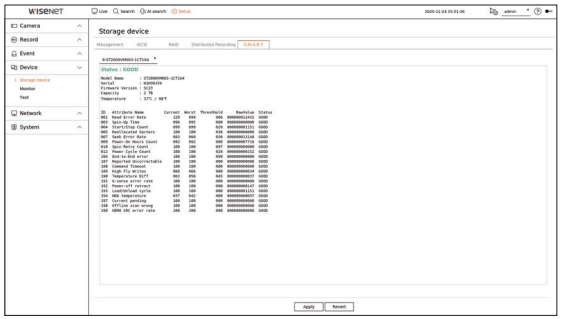
- Record type : Select a storage type from <**Continuous recording**> or <**Distributed recording**>.
- Initialization : Settings that are provided when <**Distributed recording**> is selected are configured as the default settings.
- ↻ : Update values such as hard disk capacity, input, and storage date to the latest data.
- Group : Select a group to distribute the recording. If you select a group, a list to select a camera to assign opens below.
- HDD : The number and kind of currently available HDDs are activated.
- External : Select an external storage device on which recordings will be stored.
- Capacity : Displays the currently used capacity and entire capacity of an HDD that is selected in the group.
- Receive : Displays the recording data volume of a channel selected in the group.
  - If the input value exceeds 200 Mbps, it will be displayed in red.
- Days : Displays the number of storable days for the input from the selected channel in the group on the HDD.
  - **Example)** 3 days and 12 hours is displayed as 3.5.
- HDD map : You can check the location according to the assigned number for the HDDs installed inside.
- Channel list : The button state of the channel list is as follows.
  - – 1 : Channel selected in the current group.
  - – 2 : Channel selected in other group.
  - – 7 : Channel that is not currently selected. Please add this channel to the group.

- Recording cannot be performed while saving changes in distributed recording settings.
- To add more HDDs for distributed recording, install them in the order of 1, 5, 2, 6, 3, 7, 4 and 8.

## S.M.A.R.T

You can check the connection status and details of the hard disk mounted in the recorder.

**Setup > Device> Storage device > S.M.A.R.T**



# Monitor

You can set the information displayed on the monitor as well as the output system.

**Setup > Device > Monitor**

## Monitor settings

You can set the monitor output related screen displays, switching time, video display, etc.



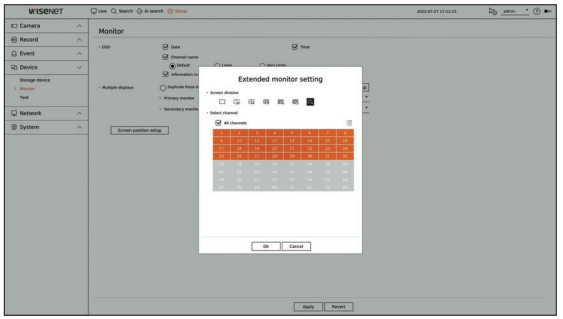
- OSD : Only checked items among date, time, channel name and information icon will be displayed on the monitor screen.
  - You can adjust the size of the channel name displayed on the live screen. Select from among <**Default**>, <**Large**>, <**Very large**>.
- Multiple displays : Set the video display resolution.
  For products that support the extended monitor, you can set the resolution after selecting <**Duplicate these displays**> or <**Extend these displays**> mode for video display.
  - Duplicate these displays : You can set the video display resolution of the primary monitor and secondary monitor to be the same.
    If you set a resolution exceeding 1920 x 1080 while operating in clone mode, the video will not be displayed to the secondary monitor.
  - Extend these displays : You can set the video display resolution of the primary monitor and secondary monitor respectively.
    - Primary monitor supports 4K resolution (or 1080p), and Secondary monitor supports 1080p resolution.

- If the newly selected resolution does not fit with the monitor, the display won't function properly. In this case, wait until the native resolution is restored and then switch to another resolution of your choice.
- The video output for Primary monitor and Secondary monitor may differ depending on the recorder model.
  - Primary monitor: HDMI
  - Secondary monitor: HDMI or VGA

## Extended monitor setting

This function is only available for products that support the use of an extended monitor.

For products that support extended monitor, refer to the "**Functions Supported by Model**" page.

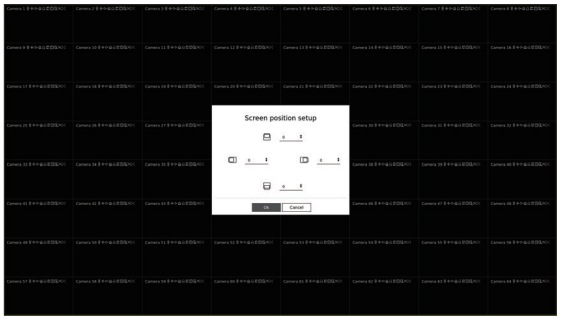


1. Select <**Extend these displays**> for video display and click <**Setup**>. You can change the layout of the extended monitor.
2. Select the Screen division you want.
3. Select as many channels from the channel table as the selected number of Screen division channels to view the videos on the monitor screen.

- When extended mode is selected, the maximum resolution of the image output on the primary monitor (HDMI) is limited to 1920 x 1080.
- If the newly selected resolution does not fit with the monitor, the display won't function properly. In this case, wait until the native resolution is restored and then switch to another resolution of your choice.
- Set up Event Display and Sequence Switching Time in consideration of the network environment time.
- The profile used in the live output of the expanded monitor uses a remote profile. If the user changes the remote profile, the video output of the expanded monitor may be affected.
- If the monitor is in clone mode, you can specify up to the split mode supported by the recorder. When the monitor is set to extended mode, you can split the screen of the Secondary monitor up to 36-split mode depending on the recorder model.
- The dynamic layout function can only be set on the primary monitor.

### Screen position setup

Some monitors many not display information (camera name, icon) about the Recording, depending on the condition. Then, you can change the display position of the data.




1. From the monitor setup menu, select <**Screen position setup**>.
2. Using < ▲▼ > button to adjust the screen that is cut off.
3. Click <**OK**>.

■ This product only supports 30Hz at 4K resolution.

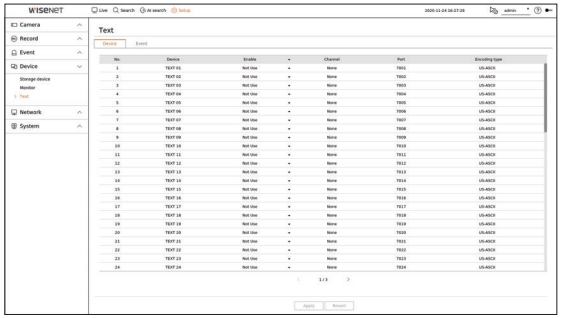
## Text

You can set the POS device setting to send text information and text event information.

### Device Settings

You can make detailed settings for the POS device connected to the recorder.

**Setup > Device > Text > Device**

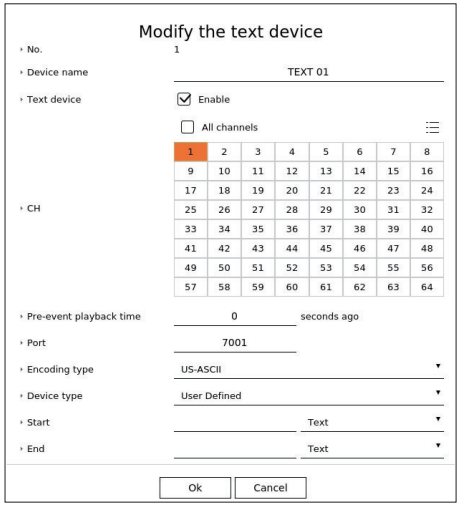



- Device : Displays the text device name registered by the user.
- Enable : Specifies whether to enable text device.
- Channel : Select a channel to add a device from a channel table.
- Port : Display a port number that is set.
- Encoding type : Select an encoding type to use from a list.

■ Epson, Wincor Nixdorf, Axiohom, Radiant System, IBM POS device, and ANPR protocols are supported.

■ POS device connected to Recorder uses TCP/IP communication protocol.

## Registering a Text Device




1. Click the desired item in the text device list.
2. Enter the device information to register in the <**Modify the text device**> window.

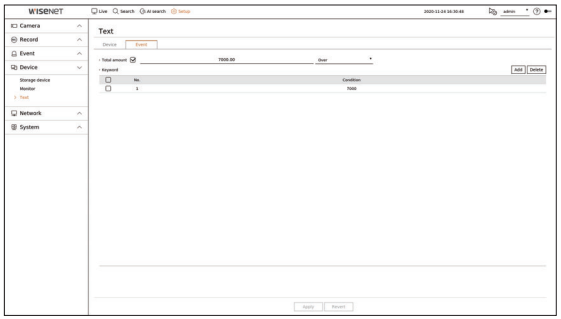
- Device name : Enter the desired text device name.
- Text device : Specify whether to enable text device.
- CH : Select a channel to add a device from a channel table.
- Pre-event playback time : Enter the start time of the playback from how many seconds before when an event occurs.
- Port : Enter the device's port number.
- Encoding type : Select the encoding type of the device.
- Device type : Select the device type.
- Start / End : You can select starting and ending character strings.
  - A text string can be entered by using texts, hex codes, and regular expressions.
  - Text : Enter a text string to search for.
  - Hex Code : Enter a hexadecimal text string to search for.
    (Your input should not be in hexadecimal —e.g. 1b40, 1b69)
  - Regular expression : Enter a regular expression to search for text strings that follow specific rules.

3. Click <**OK**>.

## Text Event Settings

You can set the text to receive an alarm when an event occurs.

**Setup > Device > Text > Event**



- Total amount : Set the condition of the total amount to be notified when a text event occurs. Check whether the total amount is used, and then select the base amount and range.
- Keyword : You can register or delete keywords to be notified when an event occurs.
  - If the <**Add**> button is clicked, a screen to add keywords pops up.
  - If you select one of the added keywords to delete and click the <**Delete**> button, the selected keyword will be deleted.

- When entering the total amount, set it to 15 characters or less, including minus and decimal point.
- When entering keywords, set them within 50 characters. Up to 20 keywords can be specified.

## SETTING THE NETWORK

You can set various network functions, such as monitoring live video by connecting to a network from a remote location and receiving an event by e-mail.

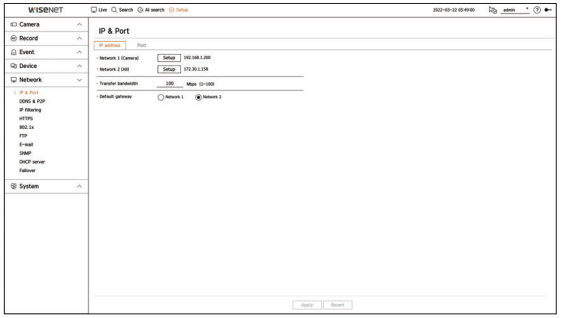
### IP & Port

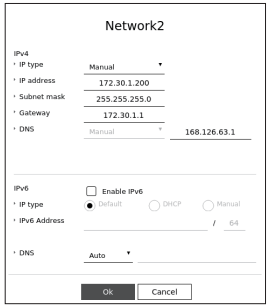
You can set the network connection route and protocol.

#### Setting a network connection

Sets the protocol and environment of the network.

**Setup > Network > IP & Port > IP address**




- Network : Each product supports a different number of network ports. If it supports two or more network ports, you can set the network for each function as follows.
- Network 1(Camera) : It can be used as a port for connecting a camera. If you connect a camera, then the camera video will be transmitted. Using the network information, you can access the web viewer.
- Network 2 (Viewer) : It can be used as a common port for camera and web viewer connection.
- Network 3 (iSCSI) : It can be used as a dedicated port for iSCSI connection.
  - Only provided for products that support Network 3.
- Network (All) : It can be used as a common port for connecting camera, web viewer, and iSCSI.
  - IP type : Select the type of network access.
  - IP address, Subnet Mask, Gateway, DNS
    - Manual : IP address, subnet mask, gateway, and DNS can be directly entered.
    - DHCP : IP address, subnet mask, gateway, and DNS can be automatically set.
- Transfer bandwidth : Enter the max data volume of a rate for transfer.
- Default gateway : Select the default gateway. If there are multiple network ports, set one of them as the default gateway.

- The DNS value of DHCP can be directly entered only if you have selected <**Manual**>.

#### Connecting and Setting the Network

Networking may differ from the connection method, check your environment before setting the connection mode.

##### When no router is used

- **Manual mode**
  - Internet connection : Static IP, leased line, and LAN environments allows connection between the Recorder and remote user.
  - Network Settings : Set the <**IP type**> of the connected recorder to <**Manual**>.
    - Consult your network manager for IP, Gateway and Subnet Mask.
- **DHCP mode**
  - Internet connection : Connect the Recorder directly to a cable modem, DHCP ADSL modem or FTTH network.
  - Network Settings : Set the <**IP type**> of the connected recorder to <**DHCP**>.

##### When a router is used

- To avoid IP address conflict with the Recorder's static IP, check followings :

- **Setting the Recorder with a static IP**
  - Internet connection : Connect the recorder to an IP router where cable modem is connected, or connect the recorder in the local area network (LAN) environment.
- **Setting the Recorder Network**

1. Set the <**IP type**> of the connected recorder to <**Manual**>.
2. Check whether the set IP address is in the static IP range provided by the Broadband Router.
   IP Address, Gateway, and Subnet Mask : Consult your network manager.

- If a DHCP server is configured with starting address (192.168.0.100) and end address (192.168.0.200), you should set the IP address out of the configured DHCP range (192.168.0.2 ~ 192.168.0.99 and 192.168.0.201 ~ 192.168.0.254).

3. Check the Gateway address and subnet mask are equal to those set in the Broadband Router.

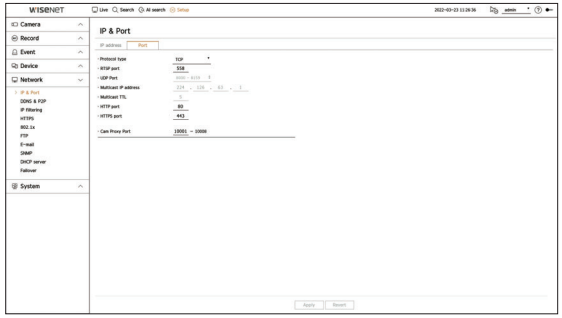
- **Setting the DHCP IP Address of the Broadband Router**

1. To access the Broadband Router's configurations, open a web browser on the local PC that is connected to the Broadband Router and enter the router's address (ex : http://192.168.1.1).
2. At this stage, make the local PC's windows network configurations to the below example :
   **Example)** IP : 192.168.1.2
   Subnet Mask : 255.255.255.0
   Gateway : 192.168.1.1
   - Once connected to the Broadband Router, it prompts with password. While entering nothing to the User Name field, enter "**admin**" into the password field and press <**OK**> to access the router configurations.
   - Access the router's DHCP configuration menu and set its DHCP server activation, and provide the start and end address.
     - Start address : 192.168.0.100
     - End address : 192.168.0.200

■ Above steps may differ from the router devices depending on the manufacturer.

## Port Setting

**Setup > Network > IP & Port > Port**



- Protocol type : Select the protocol type among TCP, UDP Unicast and UDP Multicast.
- RTSP port : It is used to transmit the video over the network. The initial value is <**558**>.
- UDP port : Activated when an UDP item is selected in protocol type. The initial value is <**8000-8159**>, and the setting value changes in 160 units.
  - UDP : It has less stability and faster speed when compared to TCP, and recommended for local area network (LAN) environments.
- Multicast IP address : Enter the IP address directly when selecting an UDP Multicast.
- Multicast TTL : Enter the TTL value when selecting an UDP Multicast. The initial value is set to <**5**>, and enter a value between 0 and 255.
- HTTP port : Enter the port value for the HTTP web viewer. The initial value is set to <**80**>.
- HTTPS port : Enter the port value for the HTTPS web viewer. The initial value is set to <**443**>.
  - HTTPS is an enhanced version of the HTTP web communication protocol. If security is important when accessing the web viewer, enable the HTTPS port.
- Cam proxy port : Sets the camera proxy port. The initial value is set to <**10001**>.

## DDNS & P2P

A remote user can network a recorder using a DDNS address in a dynamic IP system. If you cannot connect with a dynamic IP, you can easily access using a P2P service.

### Accessing using DDNS address in the dynamic IP environment

In the dynamic IP environment such as xDSL/Cable modem, the router's WAN IP can be changed, so we provide DDNS (Dynamic Domain Name Server) service so that you can always access the recorder with only the DDNS address even in the dynamic IP environment.

Before using Wisenet DDNS & P2P, please set up the network connection and DDNS first.

### DDNS Setting

#### Setting DDNS in the Recorder

Set <**Protocol type**> to <**TCP**> in the "**Setup** > **Network** > **IP & Port** > **Port**" menu of the connected recorder.

#### DDNS Settings of the Router

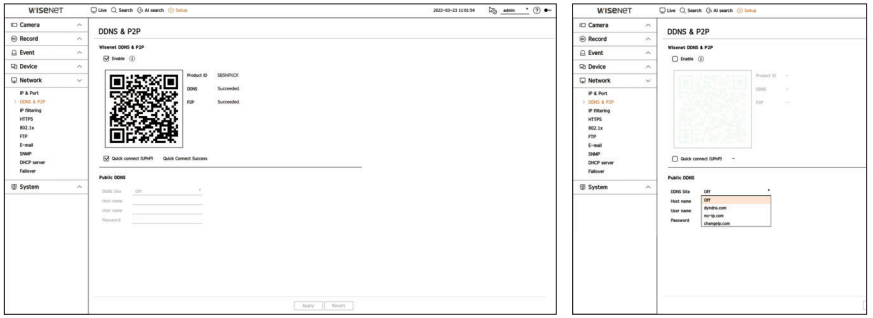
Select the corresponding menu for the network transfer protocol of the router.

#### Setting up UPnP of Router

Refer to the router's documentation to enable the UPnP function of the router.

### Setting the Wisenet DDNS & P2P

**Setup > Network > DDNS & P2P**



- Enable : Click <**Enable**> to test the connection to see if the current recorder can be connected remotely. When the connection is successful, a QR code is created.
  - It connects to Wisenet DDNS first. If it does not connect to DDNS, it automatically connects to P2P.

- In a double NAT environment or if the router's port is not configured, the DDNS status will be displayed as <**Successful**>, but the DDNS connection from the viewer to the recorder may fail.
- You must be connected to an external network for a DDNS connection. (If there are two or more networks, be sure to connect an external network to the network set as the <**Default gateway**>.)
- If you are setting up a port that is already in use, then the connection might fail. Check the port setup of your router.
- If the viewer is connected through P2P instead of DDNS when connecting to a recorder, performance may be lower than that of the DDNS connection. You can check the current connection method (DDNS or P2P) in each viewer.
- DDNS is a short form of Dynamic Domain Naming System.
  DNS (Domain Name System) is a service that routes a domain name consisting of user friendly characters (ex : www.google.com) to an IP address consisting of numbers (64.233.189.104).
  DDNS (Dynamic DNS) is a service that registers a domain name and the floating IP address with the DDNS server so that the domain name can be routed to the IP address even if the IP is changed in a dynamic IP system.

- Quick connect (UPnP) : To use the function, set to <**Enable**> after connecting the Recorder to a UPnP router. The message about the progress appears when connecting to Quick connect (UPnP).
  - **Quick Connect Success** : Message for a successful connection.
  - **Invalid Network Configuration** : Message appears if the network configuration is not valid. Check the configuration.
  - **Please enable UPnP function of the router.** : Message appears if the router requires UPnP function enabled.
  - **Failed to find the router.** : Message appears if the router is not found. Check the router's configurations.
  - **Please restart the router.** : Message appears if the router should be restarted.
  - **Quick Connect not supported in UDP mode.** : Set <**Protocol type**> to <**TCP**> in the "**Setup** > **Network** > **IP & Port** > **Port**" menu of the connected recorder.
  - **Connection Failed.** : If the connection fails due to an unknown error, the message is displayed.

- If there is a port conflict, it will automatically change to another port. You can check the changed port information in the "**Setup** > **Network** > **IP & Port** > **Port**" menu of the connected recorder.
- If there is a port conflict, check the port forwarding or UPnP settings in the user manual of the connected router.

## Setting the Public DDNS

- DDNS site : Select whether to use DDNS and the site registered when using it.
- Host name : Enter the host name registered with the DDNS site.
- User name : Enter the user name registered with the DDNS site.
- Password : Enter the user password registered with the DDNS site.

## Connecting to the Viewer

### To connect to the Wisenet mobile from your smartphone

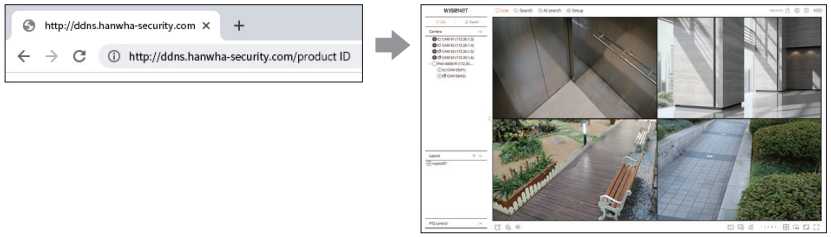
1. Install and run the "**Wisenet mobile**" app on your smartphone.
   You can scan the QR code of the recorder on the <**Add device**> screen.
2. When the QR code is scanned, the <**Product ID**> shown in the recorder is automatically reflected in the mobile viewer, and you can use the mobile viewer by entering the recorder ID/password.
3. Then, when you run the "**Wisenet mobile**" app, it will be automatically connected to the recorder and you can monitor it easily with your smartphone.

### To connect to the Wisenet Viewer from your PC

1. Go to https://www.hanwha-security.com on your PC.
   Install and run the "**Wisenet Viewer**" app.
2. Select <**IP type**> to <**DDNS/P2P**> in the "**Setup** > **Device** > **Device list** > **Add** > **Manual**" menu.
3. Enter the recorder ID/password and <**Product ID**>, and then click <**Register**>.
   The information of the current recorder will be displayed, and you can use the "**Wisenet Viewer**" app.

### To connect to the WebViewer from your PC

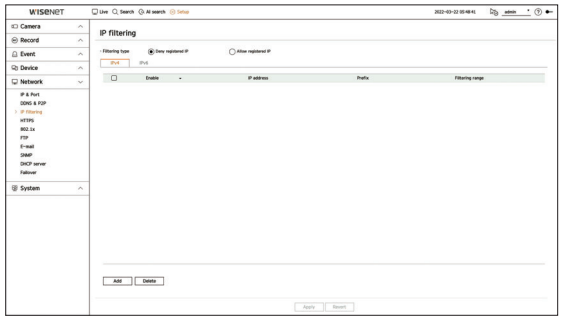
If you connect to **http://ddns.hanwha-security.com/product ID** including <**Product ID**> in the local PC address bar, the recorder's web viewer screen will appear.



## IP Filtering

You can prepare the list of IP addresses to allow or block access to a specific IP address.

**Setup > Network > IP filtering**



- Filtering type
  - Deny registered IP : Access to the registered IP address will be limited.
  - Allow registered IP : Only registered IP addresses can be accessed.
- Enable : Select whether to enable registered IP filtering.
- IP address : Displays the registered IP address. Double click the IP address to change the settings.
- Prefix : Displays the prefix to be filtered. Double-click the prefix to change the settings.
- Filtering range : If you enter an IP address or prefix, then the range of IP addresses blocked or permitted will be displayed.

- If a camera's IP address is not included in the Permit list or is in the Reject list access to it will be rejected.
- For IPv4, camera IP filtering through PoE port is not immediately applied. (Previous connections are maintained, and filtering is applied on next login.)

**To register the IP addresses to filter**

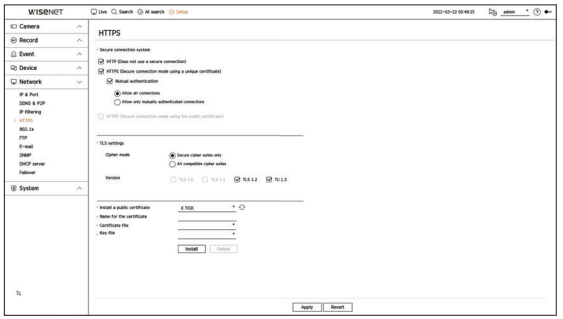
1. Select the IP type tab you want to register from IPv4 or IPv6.
2. Click <**Add**> at the bottom of the screen.
3. When the additional window is displayed, set the details.
   - IP filtering : Select whether to enable IP filtering.
   - IP address : Enter the address to enable IP filtering.
     - When entering an IP address, a value in the range 0-255 must be entered to register.
   - Prefix : Enter the prefix value.
4. Click <**OK**> to complete.

- To delete a registered item, select the check box of the item to be deleted and click <**Delete**> at the bottom of the screen.

## HTTPS

You can choose a secured connection system or install a certificate.

**Setup > Network > HTTPS**



- Secure connection system : You can select a type of secure connection system based on the service environment and the security level.
  HTTPS (Hypertext Transfer Protocol Secure) is a more secure version of HTTP that exchanges data through the encryption and decryption of the user's page request at the TLS (Transport Layer Security).
  - HTTP (Does not use a secure connection) : Transmits data without encryption.
  - HTTPS (Secure connection mode using a unique certificate) : Establishes a secure connection using a unique certificate provided by the recorder.
    - Mutual authentication : Mutual authentication can be performed to enhance security. If you select <**Allow all connections**>, you can access the storage device even if mutual authentication is not performed. If you select <**Allow only mutually authenticated connections**>, you can access the storage device only when mutual authentication was successful.
  - HTTPS (Secure connection mode using the public certificate) : Establishes a secure connection using a public certificate. You can select this after installing a public certificate.
- TLS settings : You can select the Cipher mode or TLS version to use for encrypted communication.
  - Cipher mode : Cipher suites are provided by combining different algorithms for use in TLS-encrypted communications, such as key exchange, authentication, and encryption.
    <**Secure cipher suites only**> uses only high-security cipher suites.
    For backward compatibility, select <**All compatible cipher suites**>. However, security may be poor, as it includes all cipher suites, whether secure or not.
  - Version : You can select the TLS protocol version to use for encrypted communication.
    - If <**Cipher mode**> is set as <**Secure cipher suites only**>, you can select only <**TLS 1.2**> or <**TLS 1.3**>.

- If the recorder is connected to the external internet or installed in an environment with high priority for security, making a secure connection is recommended.

- Install a public certificate : You can scan and register a public certificate to be installed. To install a certificate, you must install a certificate file or key file issued by a certificate authority. Click <**Install**> to register the certificate.
  - In the <**HTTPS (Secure connection mode using the public certificate)**> mode, you cannot install or delete a public certificate. Change to <**HTTP (Does not use a secure connection)**> or <**HTTPS (Secure connection mode using a unique certificate)**> mode before proceeding.
  - Install the certificate file extension as .crt and the key file extension as .key.
  - For certificate and key files, use PEM format generated by RSA (2048 or higher recommended) or ECC.
  - For certificate and key files, use PKCS#1 or PKCS#8 without a password.

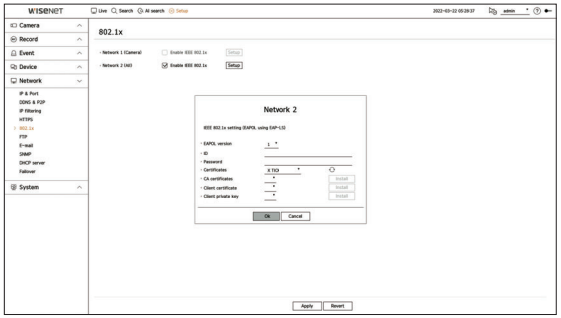
## 802.1x

When connecting to a network, you can select whether to use the 802.1x protocol and install a corresponding certificate.

802.1x is an authentication system between a server and a client, which prevents hacking, virus infection, and information leakage of transmitted and received network data.

802.1x can be used to block the unauthorized client access and increase security by allowing only authenticated users to communicate.

**Setup > Network > 802.1x**



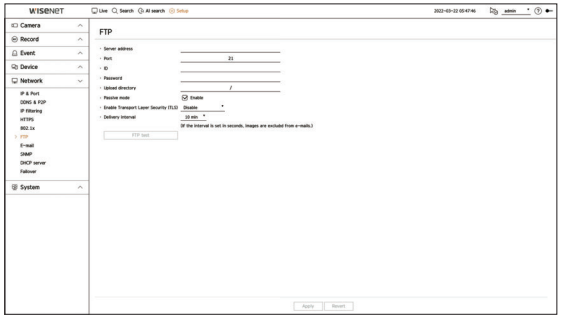

- EAPOL version : Select the EAPOL version to be used as protocol.
  - Some switch hubs will not operate if you set them to version <**2**>. Select the version <**1**>, which is the EAPOL default.
- ID : Enter the ID provided by the RADIUS server administrator.
  - If the entered ID does not match the ID of the client's certificate, it won't be processed properly.
- Password : Enter the password provided by the RADIUS server administrator.
  - If the password you entered does not match that of the client's private key, it won't be processed properly.
- Certificates : Search for a device. Click on <↻> to search for a device again.
- CA certificates : Select this only if your public certificate includes the public key.
- Client certificate : Select if the public certificate includes a client's authentication key.
- Client private key : Select it if the public certificate contains the client private key.

- For successful implementation of the 802.1x operating environment, the administrator must use the RADIUS server. In addition, the switch hub connected to the server must be a device that supports 802.1x.
- If the time setting of the RADIUS server, the switch hub and an recorder do not match, communication between them can fail.
- If a password is assigned to the client's private key, the server administrator should confirm the ID and password. The ID and password allow up to 30 characters each. (But it only supports letters, numbers and special characters ("-", "_", "" 3 types) only. Accessing non password-protected files is allowed without entering a password.
- The 802.1x protocol adopted by the Recorder is EAP-TLS.
- You need to install all three certificates to use 802.1x.

## FTP

When an event occurs, it can be configured to send the event image to the FTP server.

**Setup > Network > FTP**




- Server address : Enter the FTP server address to connect to.
- Port : Enter the connection port. The initial value is set to <**21**>. Enter a value between 1 and 65535.
- ID : Enter the user ID to authenticate when connecting to the FTP server.
- Password : Enter the user password to authenticate when connecting to the FTP server.
- Upload directory : Enter the path of the FTP server where the transmitted event image will be saved.
- Passive mode : Check <**Enable**> if passive mode is required due to firewall or FTP server settings.
- Enable Transport Layer Security (TLS) : Select between <**Disable**> and <**TLS (if available)**>.
- Delivery interval : Select the delivery interval for your event.
  - If a series of events occurs, it will be sent at the set time, not on each event. The overlapped events that occurred during the set delivery interval are sent as text in an html format file.
- FTP test : Conducts the transfer test with the entered FTP server settings.

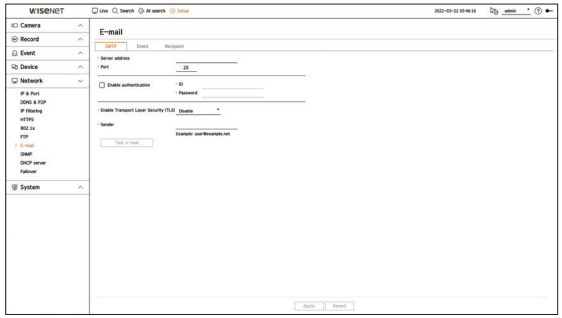
## E-mail

You can send an e-mail to a Recorder-registered user at a specific time interval, or if an event occurs.

### SMTP Setting

Sets the SMTP mail server.

**Setup > Network > E-mail > SMTP**

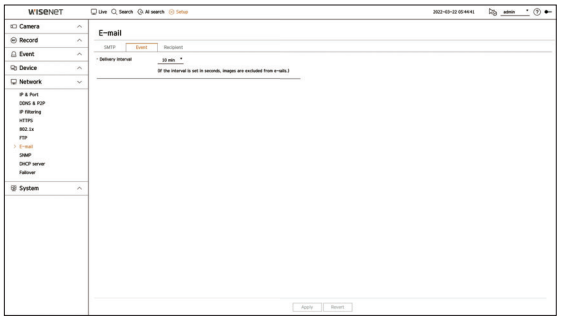


- Server address : Enter the SMTP server address to connect to.
- Port : Enter the connection port.
- Enable authentication : Check this if the SMTP server uses user authentication.
  The ID and password fields will be activated when the authentication is enabled.
  - ID : Enter a ID to use authentication when connecting to the SMTP server.
  - Password : Enter the password of the SMTP server user.
- Enable Transport Layer Security (TLS) : Select one from <**Disable**> and <**TLS (if available)**>.
- Sender : Use the virtual keyboard to enter the sender's e-mail address.
- Test e-mail : Conducts the test on the server settings.

### Event Setting

You can set the interval and type of the event that will be sent to the user.

**Setup > Network > E-mail > Event**

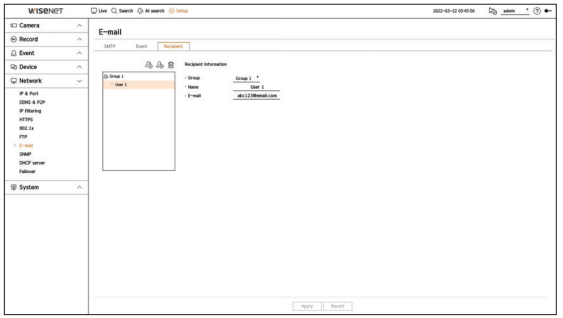


- Delivery interval : Set the event interval.
  - If a series of events occurs, the e-mail will be sent at the specified interval, not on each event.

### Recipient Setting

You can create a group and add users to it or; you can delete users and change a group.

**Setup > Network > E-mail > Recipient**

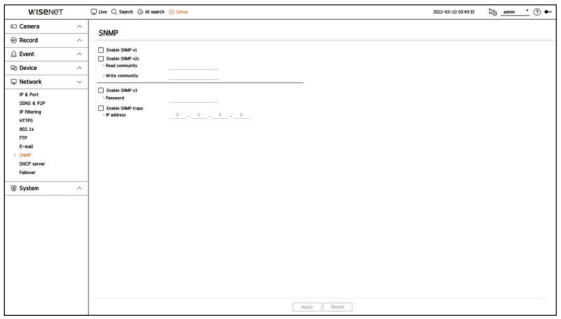


- Click on < > to add a group.
  Enter the group name.
- Select a recipient group to receive emails.
  If a group is added, it will appear in the group list.
- Click on < > to add a recipient.
  Select a group and enter names and email addresses.
  If a group is created, you can add a recipient.

## SNMP

The SNMP protocol allows system or network administrators to remotely monitor and configure the network devices.

**Setup > Network > SNMP**



- Enable SNMP v1 : SNMP v1 is used.
- Enable SNMP v2c : SNMP v2c is used.
  - Read community : Enter the name of read-only community to access the SNMP information.
  - Write community : Enter the name of write-only community to access the SNMP information.
- Enable SNMP v3 : SNMP v3 is used.
  - Password : Set the initial user password for SNMP version 3.
- Enable SNMP traps : SNMP trap is used to send important events and conditions to the Admin System.
  - IP address : Enter the IP address to which messages will be sent.

## DHCP Server

You can set the internal DHCP server and assign an IP address to the network camera.

### Network Setting

**Setup > Network > DHCP server > Network**



- Network : You can set the IP range and time to activate as the recorder's DHCP server.

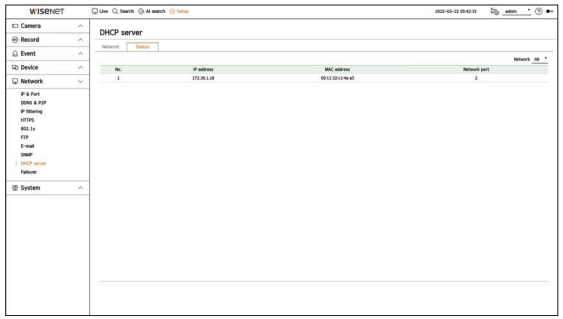
### To set the DHCP server

1. Click <**Setup**> of the network you want to set as a server.
2. When the network setting window is displayed, select <**Run**> for <**Status**>.
3. Enter the starting IP and end IP in the <**IP range**> field.
4. Fill in the <**IP lease time**> field.
5. Click <**OK**>.
   The IP range entered is set as the DHCP server address of the network.

### Checking the status

You can check the IP address assigned to the current DHCP server, MAC address, and the connected network port information.

**Setup > Network > DHCP server > Status**




## Failover

This function is only available for products that support failover. For products that support failover, refer to the "**Functions Supported by Model**" page.

If the recorder cannot record due to a network failure, other recorders that have been prepared can record instead.

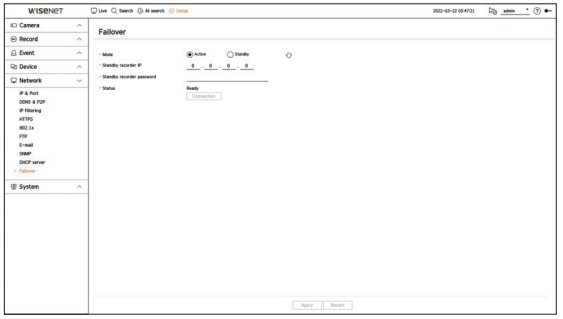
You can connect 32 'Active' recorders to one 'Standby' recorder.

- The recorder you want to configure for failover needs to be connected to both the camera and viewer ports to the local network.
- Failover configurations can only be set with recorders of the same model.
- Troubleshooting network interface supports IPv4 only.
- All recorders must have time synchronized. For more information about time synchronization settings, refer to the "**Setup** > **Setting the System** > **Date/Time/Language**" page in the Table of Contents.
- The network IP band in the recorder must be set to a different band.
  - **Example of IP in a different bandwidth**
    **Example 1**) IP : 192.168.1.200, subnet 255.255.255.0
    In the Example 1) above, since 255 of the subnet corresponds to 192.168.1, any IP in a format of 192.168.1.x has the same bandwidth.
    An IP in a format of 192.168.2.x has a different bandwidth with an IP in a format of 192.168.1.x.
    **Example 2**) IP : 172.16.1.200, subnet 255.255.0.0
    In the Example 2) above, since 255 of the subnet corresponds to 172.16, any IP in a format of 172.16.x.x has the same bandwidth.
    An IP in a format of 172.17.x.x has a different bandwidth with an IP in a format of 172.16.x.x.
- For more information about network settings, refer to the "**Setup** > **Setting the Network**" page in the table of contents.

### To set troubleshooting

1. Set one recorder to <**Standby**> mode and the other recorder to <**Active**> mode.
2. In the recorder set to <**Active**> mode, enter the viewer port IP and administrator password of the <**Standby**> recorder you want to connect to and click <**Connection**> under the status display.
3. Check the IP and status of the connected <**Active**> recorder in the <**Standby**> recorder.

**Setup > Network > Failover**




- Mode : Select either <**Active**> or <**Standby**> mode.
  - Active : Recorder being recorded. Monitored by the <**Standby**> recorder.
  - Standby : Recorder being prepared without recording. It will record instead of the <**Active**> recorder if a problem occurs.

### In the case of active mode

- Standby recorder IP : Enter the viewer port ID of a standby recorder to access.
- Standby recorder password : Enter the administrator password of the standby recorder.
- Status : Displays the current connection status.
- Connection / Disconnection : Click the button to access or disconnect the access.

### In the case of standby mode

- Device list & status : Shows the status of the normal recorder currently connected to the standby recorder. To delete the normal recorder connected, click <**Delete**> on the right side of the recorder.

■ The standby recorder can only enable some functions in the <**System**>, <**Device**>, and <**Network**> menus. You can't use the <**Record**> and <**Event**> menus.

■ In the standby recorder, the previous operation will stop when a failover is performed during the playback or section export, and the screen will move to the live screen.

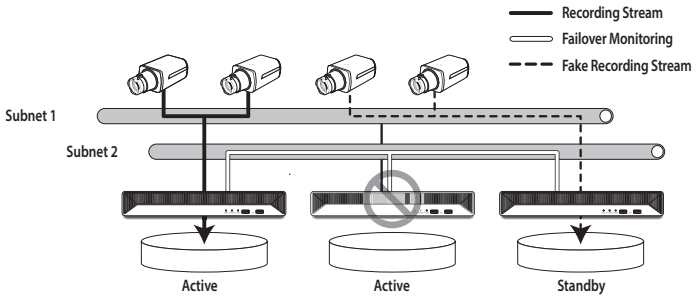
| State name | Description |
|---|---|
| **Ready** | Ready to be connected |
| **Connected** | Normal recorder and standby recorder connected (failover available) |
| **Failover** | Troubleshooting is being performed |
| **Connected fail** | Connection was attempted but failed |
| **Authentication failure** | Auth failed by entering an incorrect standby password when attempting to connect |
| **Connected(Match Time Required)** | Connected without time synchronization with the standby recorder |
| **Connected(check camera port IP)** | Even if the camera port of a normal recorder is connected to the viewer port of the standby recorder or connected to the same viewer port, the IP port of the camera port is not matching. |
| **Connected fail(check camera port IP)** | The connection from the normal recorder's camera port to the standby recorder's camera port failed. |
| **Connected fail (It is a different model.)** | Failed connection by connecting recorders of different models. |

### Example of setting up failover

– Subnet 1 ➡ Network 1 (Camera)

– Subnet 2 ➡ Network 2 (Viewer)

– Subnet 3 ➡ Network 3 (iSCSI)



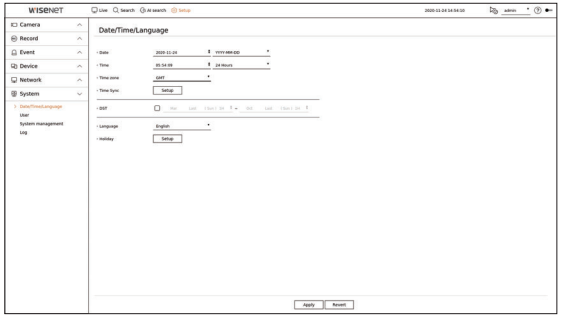

## SETTING THE SYSTEM

You can set the date, language, authority, etc. displayed when using the system, and query system information or log information.

### Date/Time/Language

You can check and setup the current Date/Time and time related properties, as well as the language used for the interface on the screen.

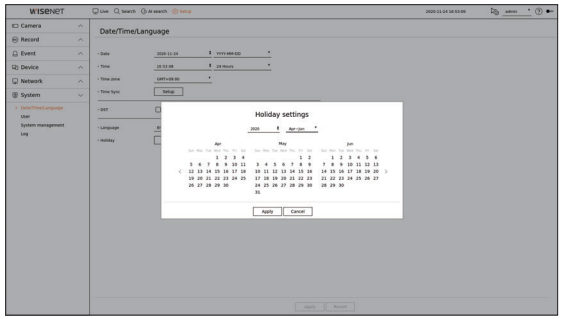
**Setup > System > Date/Time/Language**




- Date : Sets the date and its format that will appear on the screen.
- Time : Sets the time and its format that will appear on the screen.
- Time zone : Sets the time zone of your area based on the Greenwich Mean Time (GMT).
  ■ GMT (Greenwich Mean Time) is standard World Time and the basis of world time zone.
- Time sync : Specify the use of synchronization with the time server.
  Click the <**Setup**> button to display time synchronization setup screen.
  If you enable <**Synchronize with NTP server**>, the current time of the recorder is synchronized by the server specified in <**NTP server address**>, and the time information cannot be manually changed.
  – Synchronize with NTP server : Specify the use of synchronization with the time server.
  – NTP server address : Enter an IP or URL address of the time server.
  – Last sync : Displays the most recent synchronization time from the selected time server.
  – Enable as NTP server : If you select <**Enable**>, this recorder will act as a time server for another recorder or network camera.
- DST : Set up Daylight Saving Time with its period to make the time earlier than the GMT of its time zone by 1 hour during the set period.
- Language : Select your language. Sets the language for the interface.

■ Depending on the location of the product release, the language and standard time setup may vary.

- Holiday : A user can select specific dates as holidays according to their own preferences. Select a holiday from the calendar displayed by clicking <**Setup**>.
  - The same applies to <**Record schedule**> or <**Schedule**> settings as holidays.

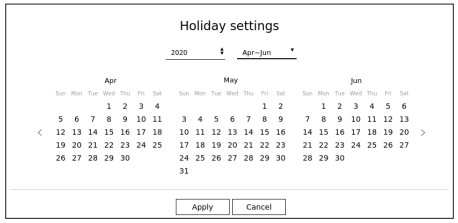






Example) If you select May 1 and check <**May 1Day**>, May 1 will be set as a yearly holiday, and if you check <**May 1Day**> and **<First Friday l May**> May 1 of every year and all Fridays of the first week of May will be set as holidays.

### To use the calendar




1. Select year and month.
   - Click < ▲▼ > on the right side of the year to change the year by one year.
   - Click the < ▼ > to the right side of the month to change the month every 3 months.
2. Select a date and click on the <**Apply**> button.

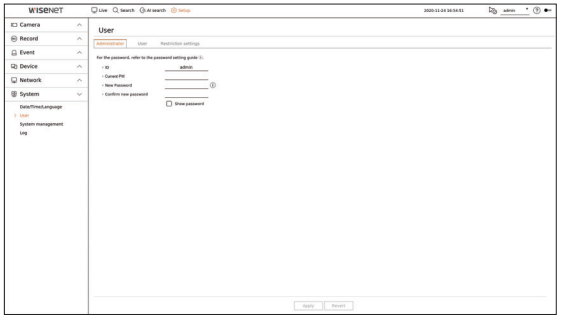
## User

You can manage users, such as adding or deleting users and granting different authorities for each user.

### Setting the Administrator

You can set and change Administrator's ID and password. The administrator can use and set all menu items and functions.

**Setup > System > User > Administrator**



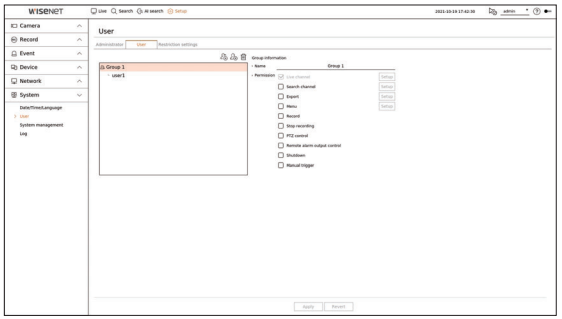

- ID : Change the admin ID.
- Current PW : Enter the current PW.
- New password : Enter new password.
- Confirm new password : Enter the new password again.
  - If <**Show password**> is selected, the password will no longer be hidden on the screen when you type it.

- The initial administrator ID is set to "**admin**" and you will need to configure the password in the installation wizard.
- Please change your password every three months to safely protect personal information and to prevent the damage of the information theft.
  Please, take note that it's a user's responsibility for the security and any other problems caused by mismanaging a password.
- If you click < ⓘ >, a basic guide for password setup is displayed.

## User setting

You can create user groups and set authorities for each group. You can manage user information such as registering and deleting users in the created user group.

**Setup > System > User > User**



### If you want to add a group

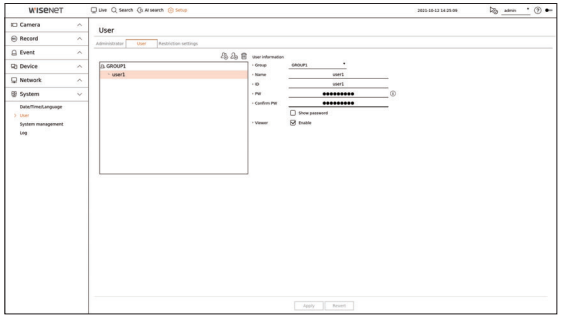
1. Click on the < > button to launch the Group Addition popup window.
   If you want to add a group, click on <**OK**>.
2. If you click the group name item on the right, a virtual keyboard to enter the group name will appear.
   Enter the group name to register.
   - You can add a maximum of 10 groups.

### If you want to set group permission

Set the access authority of the group.
Users in the group can only enable the menu to which they have been granted authority.

1. Select the menu to set group permissions.
   Set the menu and click <**Setup**> on the right to display the detailed settings window.
   - Live channel : You can set permissions to access the live screen for each channel.
   - Search channel : You can set permissions to access the search menu for each channel.
   - Export : You can set the authority to access the export menu for each channel.
   - Menu : You can select and set the setting menu that can be accessed. A group user can only access the menu selected. If you select the menu, the menu permission setting screen will be displayed.
   - Record, Stop recording, PTZ control, Remote alarm output control, Shutdown : You can set the menu to grant access to users in the group.
   - Permission-set menus will show up in the Live menu when users of the group log in.
2. Select <**Apply**>.
   Users in the group will be given access to the set items.

### If you want to register a user



1. Click on the < > button to launch the user addition popup window.
   To add a user, click on <**OK**>.
2. Select a group.
   When registering a user, the selected group will be automatically registered.
   - You can change the group after entering all the user information.
3. Enter a name, ID and password (confirm password) and enable or disable the viewer option.
   If you activate use of <**Viewer**>, you will have the right to use the web viewer and the network viewer.
   - If <**Show password**> is selected, the password will no longer be hidden on the screen when you type it.
4. Click <**Apply**>.
   Registered user information will be saved.

### When you want to delete the group and user information

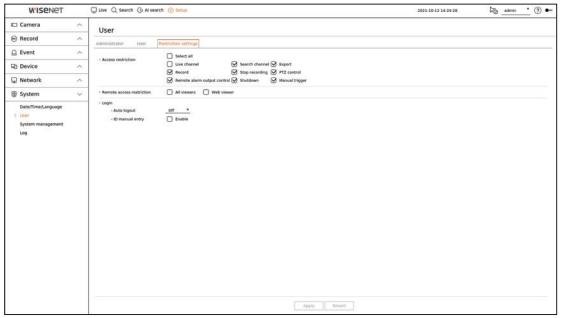
1. Select the group or user to delete and press the < > button.
2. The deletion confirmation window will appear and click on <**OK**>.

## Restriction Settings

Set user's restricted access or network restriction.

Items with restrictions will require logging in for use.

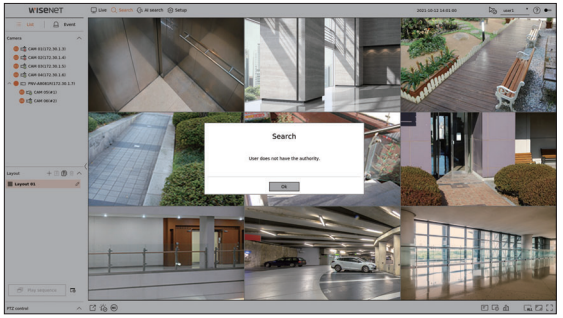
**Setup > System > User > Restriction settings**



- Access restriction : You can set the menu to restrict the access for user.
  - Checked (☑) : Restricted
    - Only those users who were given Permission for the menu in <**User**> can access the menu.
  - Not checked (☐) : Accessible
    - Regardless of the Permission settings for the menu in <**User**> all users can access the menu.
- Remote access restriction : You can restrict remote access for users.
  - All viewers : Set all users to be unable to access the network and the web viewer.
  - Web viewer : Set all users to be unable to access the web viewer.
- Auto logout : A user will be automatically logged out if there is no operation on Recorder for over set period of time.
- ID manual entry : In the login window, select whether to enter ID.

## If the user has restricted access

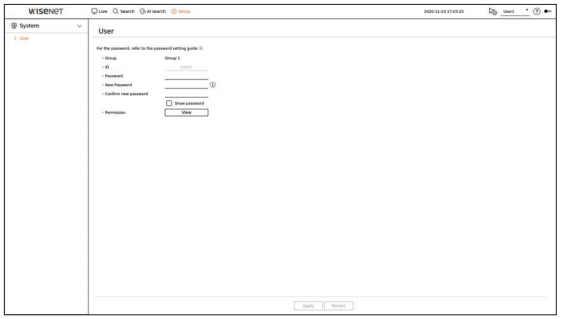
If a general user selects a menu to which they do not have access, an access restriction confirmation window will be displayed. If all rights are restricted, only the accessible menu of the live screen menu will be displayed, and only the user's own password can be changed.




## To change the user password

If you log in with the user account of a group with restricted access, you just can change your own password.

**Setup > System > User**



1. Provide the login information.
2. Select <**User**> in <**System**>.
3. Please enter your current password.
4. Provide a new password. Enter the password you want to change in the password confirmation box again.
5. Select <**Apply**>.
   The old password will be changed to a new one.

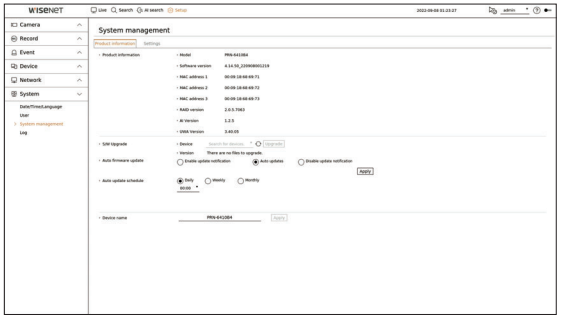
## System Management

You can check the current system version and update to a new version, export data, setting initialization, and more.

### Checking the System information

You can check the current software version and MAC address before proceeding with the upgrade.

**Setup > System > System management > Product information**

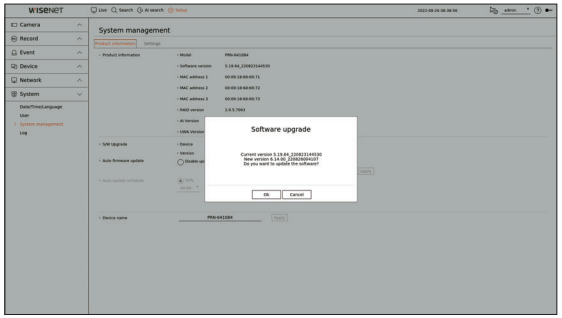



- Product information : Shows the current system's information.
  - Model : Shows the model name of the product.
  - Software version : The software version of the product currently being used is displayed. You can check the software version and upgrade to the latest version.
  - MAC address : Shows the Mac address of the product.
  - RAID version : Shows the RAID version for products that support RAID.
  - AI version : Shows the AI version of products that support AI.
  - UWA version: Shows the UWA version of the product.
- S/W Upgrade : Updates the Recorder's software up to date.
  - If hard disk is unavailable or not properly connected, the software upgrades do not appear.
  - Press the < ⟳ > buttons to search for the software in the USB or on the network.
  - When the updating is done, it automatically restarts. Make sure to not turn off the power during upgrade.
- Auto firmware update: When the network is connected to a recorder, you can receive new firmware notifications. After selecting the setting you want, click <**Apply**>.
  - Enable update notification : You will get a notification when there is new firmware.
  - Auto updates : It checks if there is new firmware on the set date, day, or time, and automatically updates if there is one.
  - Disable update notification : It does not check for the presence of new firmware.
- Auto update schedule: It activates when you select <**Auto updates**> in the <**Auto firmware update**>. Select the date, day, or time to automatically update when new firmware is available.
- Device name : You can enter a device name for your product. To differentiate multiple recorders in VMS, Device Manager, etc., it is recommended to enter a different device name for each device.

■ The system information displayed may differ depending on the recorder model.

### To upgrade the current software version

**Setup > System > System management > Product information**



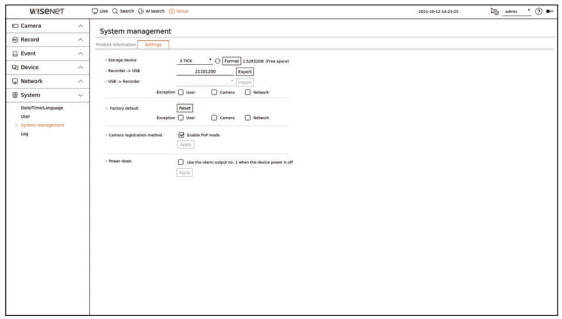

1. Connect a device storing the software to be updated.
   - It may take about 10 seconds to recognize the device.
   - Upgradeable devices include USB memory, and network device.
   - If you want to upgrade it on the network, the product should be connected to an external network. Upgrade via the proxy server may not be enabled due to the restricted access.
2. When the recognized device appears, select <**Upgrade**>.
   - If you connect a device in the upgrade menu window, you can press the < ⟳ > button to search for available software.
   - If there is an upgraded version on the network, a popup window will appear.
   - <**Upgrade**> will be activated only when there is a higher version than the current software version.
3. In the <**Software upgrade**> window, select <**OK**>.
   - While updating, it shows the progress.
4. When the updating is done, it automatically restarts. Do not turn the power off until it finishes restarting.

■ If "**Upgrade Failed**" appears, retry from the step 2. When you experience continued failure, consult the service center for assistance.

## Settings

You can export the information set in the recorder to a storage device and apply the same information to other recorders.

**Setup > System > System management > Settings**



- Storage device : Shows the connected storage device.
  - Press the < ⟳ > button to view the list of storage devices.
  - If you click <**Format**>, the format confirmation window will appear. Click <**Yes**> to format the selected storage device.
- Recorder ➡ USB : Save the information set in the recorder to a storage device.
  - If you select <**Export**>, a confirmation window will appear. If you select <**OK**>, the recorder information will be saved as a file.
- USB ➡ Recorder : Apply the setting information stored in the storage device to the recorder.
  - If you select the exclusion setting, you can import all information but the selected information.
  - If you select <**Import**>, you can recall the setting information stored in the storage device. Select <**OK**> to apply the loaded information to the recorder.
    - The <**Export**> and <**Import**> settings can be used in the same software version only.
- Factory default : Resets the product to its factory default settings. However, logs won't be reset. Anything selected under Exclusion Setting won't be part of the factory reset.
  A confirmation pop-up will appear when you press the <**Reset**> button. Select the <**OK**> button to reset the selected items.
- Camera registration method : Set the camera registration method. This function is only available for products that support PoE. For products that support PoE, refer to the "**Functions Supported by Model**" page.
  - Enable PnP mode: Cameras connected to the PoE port of the product will automatically be registered for each channel in order of port number.
    - When the camera resets to factory defaults, it defaults to the ID and password set in the "**Setup** > **Camera** > **Camera password**" menu.
      If the camera ID and password are not set, the recorder ID and password will be set automatically.
    - If the camera's ID and password have already been set, the information that matches the ID and password set in the "**Setup** > **Camera** > **Camera password**" menu will be registered (up to 3 sets).
    - You may change the passwords of registered cameras all at once in the "**Setup** > **Camera** > **Camera password**" menu.
    - If manual mode is used, you can register cameras connected to the recorder's PoE port and cameras connected to a separate switch in the <**Channel setup**> menu. For more details on camera registration, see the "**Setup** > **Setting the Camera** > **Setting the Channel**" page in the Table of Contents.
- Power down : If the power is off, the first alarm is generated. Select the <**Use the alarm output no. 1 when the device power is off**> check box and click <**Apply**> to clear all alarms set for alarm output 1, and then selecting alarm 1 with another alarm out will not be possible.
  - This function is provided only for products that support alarm output.
  - If that function is set, the first alarm-out checkbox and all alarms in the alarm setup screen are deactivated, to Off.

- If you export setup information, then the data will be saved as a file in the recorder folder of your storage device.
- If you want to import setup information, you have to first make sure that the setup information file is located in the recorder folder of the storage device.

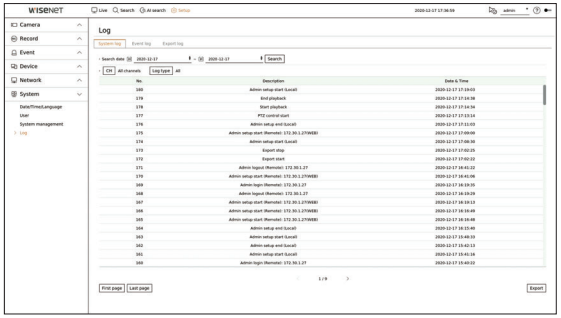
## Log

You can check the log information related to system, events, and export.

### Checking the system log

System Log shows log and timestamp on every system start up, system shutdown, and changes on system settings.

**Setup > System > Log > System log**

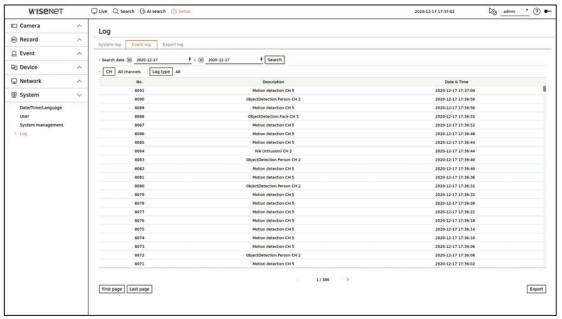


- Search date : Click the Calendar icon to display the calendar window, or use the direction buttons to specify the search period of the system log.
- Search : Specify the date and press this button to display the search result in the log list.
- CH : Select a channel to search.
- Log type : When there are too many logs, you can display logs of the desired format by selecting the type. Select the desired type and click <**Apply**>.
- First page/Last page : Move to the first/last page when there are many search results.
- Export : Save all the logged information recorded in the Recorder into the storage device.

## Checking the event log

You can search recorded events including alarms, camera events and video loss.
It also shows the log and its timestamp.

**Setup > System > Log > Event log**

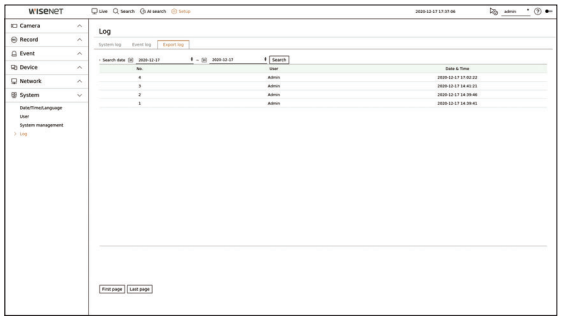


- Search date : Select the date to search the event log by using the calendar window that appears when the calendar icon is selected or by using the arrow buttons.
- Search : Specify the date and press this button to display the search result in the log list.
- CH : Select a channel to search.
- Log type : When there are too many logs, you can display logs of the desired format by selecting the type. Select the desired type and click <**Apply**>.
- First page/Last page : Move to the first/last page when there are many search results.
- Export : Save all the logged information recorded in the Recorder into the storage device.

## Checking the export log

You can search the user who performed the export and the execution time and details (time, channel, device, file type).

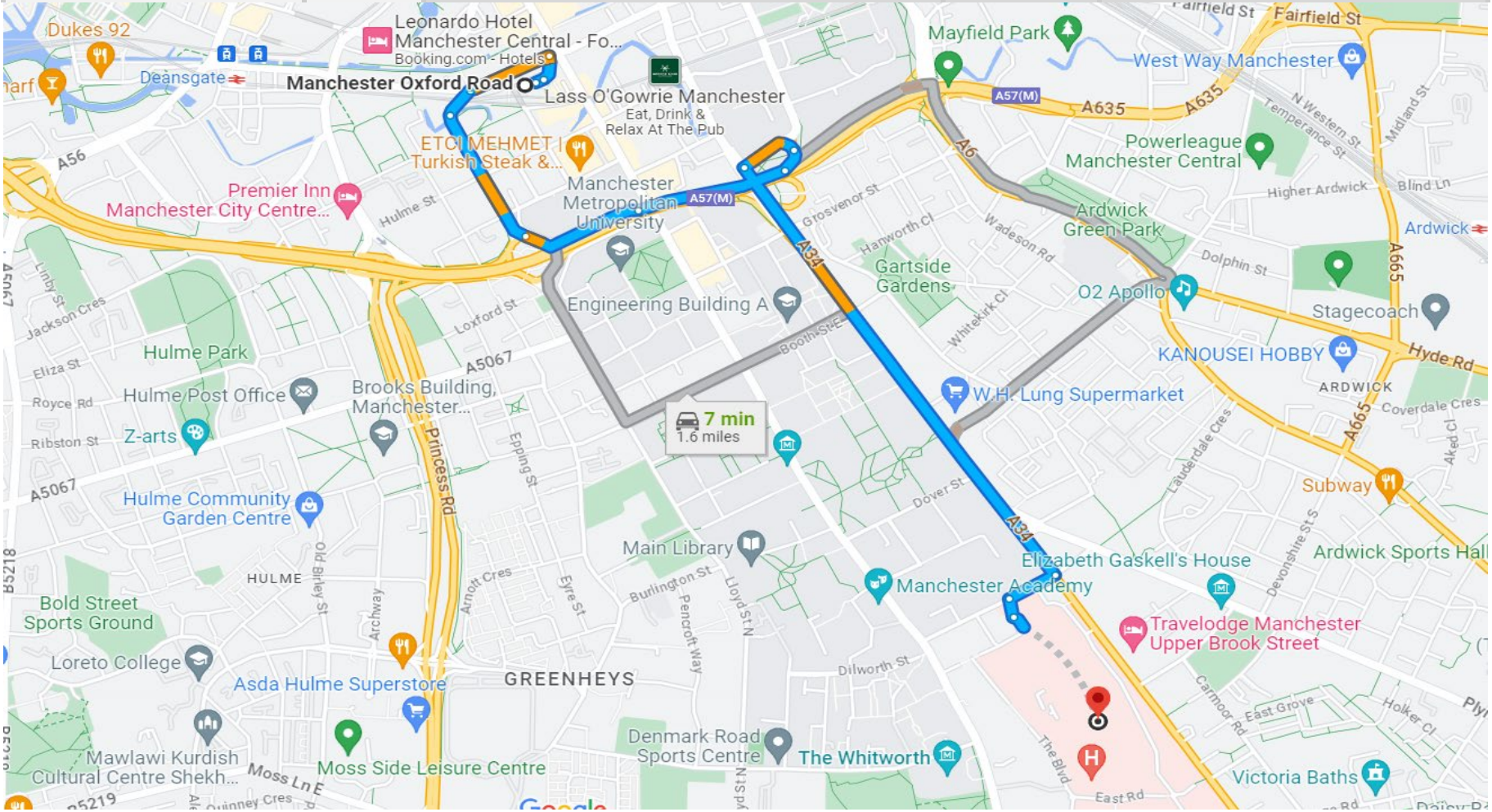
**Setup > System > Log > Export log**



- Search date : Select the date to search the export log by using the calendar window that appears when the calendar icon is selected or by using the arrow buttons.
- Search : Specify the date and press this button to display the search result in the log list.
- First Page/Last Page : Move to the first/last page when there are many search results.

## 8.2 Appendix B – Hospital Maps

| Train Station | Station Postcode | A&E Name | A&E Address | |
|---|---|---|---|---|
| Manchester Oxford Road | M1 6FU | Manchester Royal Infirmary<br>0161 276 1234 | Oxford Road<br>Manchester<br>M13 9WL | |



## 8.3 Appendix C – Asbestos Management Survey Report (ARMS)

| LEGEND for Risk Colours | |
|---|---|
| **Colour** | **Risk** |
| Red | High |
| Yellow | Medium |
| Green | Low |
| Blue | Very Low |
| Orange | Asbestos Presumed – not surveyed/areas not accessed |
| Purple | See Archetype Report |
| Grey | No ACMs Identified |
| White | No Survey Required - no asset exists/NR no longer the asset owner |

# Asbestos Management Survey Report
# Site: MANCHESTER OXFORD RD Rail S
# Status: Authorised
# Survey Risk Colour: LightGreen

| | |
|---|---|
| **Site Reference** | 23722 |
| **Mentor/REID ID** | 168289000 |
| **Site/Property Name** | MANCHESTER OXFORD RD Rail S |
| **Description** | MANCHESTER OXFORD RD Rail S |
| **Site Risk Colour** | LightGreen |
| **Site Risk** | Low |
| **ELR** | COL |
| **Asset Category** | Non-linear Asset |
| **Mileage** | 189.0063 |
| **Mileage From** | |
| **Mileage To** | |
| **Region** | North West & Central |
| **Route** | North West |
| **Block Address** | Station Approach, Oxford Road, Manchester<br>Station Approach<br>Oxford Road<br>Manchester<br>M1 6PU |
| **Category** | Station |
| **Inpsect Asset Prior to Access?** | No |
| **Archetype Report** | N/A |
| **Survey Date** | 25-Aug-2022 |
| **Version** | 8 |

**IMPORTANT - THE FOLLOWING MUST BE READ PRIOR TO UNDERTAKING ANY INSPECTION OR OTHER WORKS**

**Scope of the Asbestos Survey**

The Asbestos Risk Management System (ARMS) is Network Rails bespoke platform for storing and managing asbestos information. It was originally designed in response to the Control of Asbestos at Work Regulations (CAWR), and specifically in relation to the 'Duty to manage asbestos in non-domestic premises' (Regulation 4 of the CAWR 2002). Network Rail is legally required to provide suitable and sufficient written assessments detailing the asbestos materials within the properties it has the duty to manage.

The purpose of a survey is to help manage asbestos in the dutyholder's premises. Unless stated to the contrary, the inspections stored on the ARMS have been carried out in accordance with HSG264 - Asbestos, The Survey Guide, as defined by the HSE. The purpose of these 'Management Surveys' is to locate, as far as reasonably practicable, the presence and extent of any suspect ACMs in the property or non-property asset which could be damaged or disturbed during normal occupancy, including foreseeable maintenance and installation, and to assess their condition.

Management surveys will often involve minor intrusive work and some disturbance. The extent of intrusion will vary between premises and depend on what is reasonably practicable for individual properties/assets, i.e. it will depend on factors such as the type of building/asset, the nature of construction, accessibility etc.

The survey will usually involve sampling and analysis to confirm the presence or absence of ACMs. However a management survey can also involve presuming the presence or absence of asbestos. A management survey can be completed using a combination of sampling ACMs and presuming ACMs or, indeed, just presuming.

## Contractor Details

| | | | |
|---|---|---|---|
| **Prime Contractor** | SOCOTEC Asbestos Limited | **Sub-contractor** | |
| **Address** | Ashbourne House<br>Ashby Road<br>Burton upon Trent<br>Bretby<br>DE15 0YZ | **Address** | |
| **E-Mail** | | **E-Mail** | |
| **Telephone** | 01283 554 499 | **Telephone** | |
| **Surveyor Name** | M Wigley | | |
| **Comments** | A re-inspection survey undertaken by SOCOTEC Asbestos Limited on behalf of Northern Trains Limited. Only photos and plans labelled 213286 are part of this survey. The site consists of a multi storey brick and timber built station with timber pitched roofs. | | |
| **Disclaimer** | **This data is believed to be complete and compliant to the latest HSE regulations at the time of completion** | | |

# Version History

## Version 1

| | | | |
|---|---|---|---|
| **Prime Contractor** | Owen Williams Railways | **Sub-contractor** | Scientifics Ltd |
| **Address** | Minton Place<br>Station Road<br>Swindon<br>SN1 1DA | **Address** | Head Office<br>500 London Road<br>Derby<br>Derbyshire<br>DE24 8BQ |
| **E-Mail** | | **E-Mail** | |
| **Telephone** | 01793 527250 | **Telephone** | 01332 268440 |
| **Surveyor Name** | R Alderton | | |
| **Comments** | | | |
| **Disclaimer** | **This data is believed to be complete and compliant to the latest HSE regulations at the time of completion** | | |

## Version 2

| | | | |
|---|---|---|---|
| **Prime Contractor** | SOCOTEC Asbestos Limited | **Sub-contractor** | |
| **Address** | Ashbourne House<br>Ashby Road<br>Burton upon Trent<br>Bretby<br>DE15 0YZ | **Address** | |
| **E-Mail** | | **E-Mail** | |
| **Telephone** | 01283 554 499 | **Telephone** | |
| **Surveyor Name** | Daniel Harding | | |
| **Comments** | A re-inspection survey undertaken by ESG Asbestos Ltd (formally Scientifics Ltd) on behalf of Network Rail LNW. Only photos and plans labelled 'ESG-1396' are part of his survey. A rail station with various station buildings and several platforms connected via a footbridge. | | |
| **Disclaimer** | **This data is believed to be complete and compliant to the latest HSE regulations at the time of completion** | | |

## Version 3

| | | | |
|---|---|---|---|
| **Prime Contractor** | Asbestos Consultants Europe Ltd. | **Sub-contractor** | |
| **Address** | Asbestos Consultants Europe Ltd.<br>Magnet Road<br>Grays<br>Essex<br>RM20 4DP | **Address** | |
| **E-Mail** | NETWORKRAIL@aceconsultants.co.uk | **E-Mail** | |
| **Telephone** | 01375 366777 | **Telephone** | |
| **Surveyor Name** | David Platt | | |
| **Comments** | The passenger footbridge is constructed of concrete with timber internal panelling and glass panes. There was limited access to all roof areas. The lifts and shafts were installed in 2014 therefore not surveyed. The passenger WCs have plaster ceilings and tiled walls and floors, the retail office and ticket office building is constructed mainly of timber. Platform 5 building is constructed of brick, block brick and timber, ceilings are mainly chipboard. The point shop<br>previously had asbestos to nails identified, this was not identied during is survey, it has either been removed or enclosed during refurbishments. The old phone box has metal wall cladding. The ticket office lobby station managers office and ticket office 1 have fixed mmmf ceiling tiles. Platform 5 building is also part of the cinema, so certain areas are outside of scope. There are structures on the opposite side of platform 5, these are also outside of the scope of the survey. | | |
| **Disclaimer** | **This data is believed to be complete and compliant to the latest HSE regulations at the time of completion** | | |

## Version 4

| | | | |
|---|---|---|---|
| **Prime Contractor** | SOCOTEC Asbestos Limited | **Sub-contractor** | |
| **Address** | Ashbourne House<br>Ashby Road<br>Burton upon Trent<br>Bretby<br>DE15 0YZ | **Address** | |
| **E-Mail** | | **E-Mail** | |
| **Telephone** | 01283 554 499 | **Telephone** | |
| **Surveyor Name** | Daniel Petcher | | |
| **Comments** | A reinspection survey undertaken by ESG Asbestos Ltd (formerly Scientifics Ltd) on behalf of Network Rail. Only photos and plans labelled 'ESG-26999' are part of this survey. Site consists of a railway station with various station buildings & several platforms connected via a footbridge. | | |
| **Disclaimer** | **This data is believed to be complete and compliant to the latest HSE regulations at the time of completion** | | |

## Version 5

| | | | |
|---|---|---|---|
| **Prime Contractor** | SOCOTEC Asbestos Limited | **Sub-contractor** | |
| **Address** | Ashbourne House<br>Ashby Road<br>Burton upon Trent<br>Bretby<br>DE15 0YZ | **Address** | |
| **E-Mail** | | **E-Mail** | |
| **Telephone** | 01283 554 499 | **Telephone** | |
| **Surveyor Name** | Daniel Petcher | | |
| **Comments** | A reinspection survey undertaken by SOCOTEC Asbestos Limited on behalf of Arriva Rail North Limited. Only photos and plans labelled 117303 are part of this survey. Site consists of a railway station with various station buildings & several platforms connected via a footbridge. | | |
| **Disclaimer** | **This data is believed to be complete and compliant to the latest HSE regulations at the time of completion** | | |

## Version 6

| | | | |
|---|---|---|---|
| **Prime Contractor** | SOCOTEC Asbestos Limited | **Sub-contractor** | |
| **Address** | Ashbourne House<br>Ashby Road<br>Burton upon Trent<br>Bretby<br>DE15 0YZ | **Address** | |
| **E-Mail** | | **E-Mail** | |
| **Telephone** | 01283 554 499 | **Telephone** | |
| **Surveyor Name** | Chris Hill | | |
| **Comments** | A re-inspection survey undertaken by SOCOTEC Asbestos Limited on behalf of Northern Rail. Only photos and plans labelled 149174 are part of this survey. The site consists of a modern steel and timber structure over brick built ticket office and platforms. | | |
| **Disclaimer** | **This data is believed to be complete and compliant to the latest HSE regulations at the time of completion** | | |

## Version 7

| | | | |
|---|---|---|---|
| **Prime Contractor** | SOCOTEC Asbestos Limited | **Sub-contractor** | |
| **Address** | Ashbourne House<br>Ashby Road<br>Burton upon Trent<br>Bretby | **Address** | |

| | | | |
|---|---|---|---|
| | DE15 0YZ | | |
| **E-Mail** | | **E-Mail** | |
| **Telephone** | 01283 554 499 | **Telephone** | |
| **Surveyor Name** | Dave Turner | | |
| **Comments** | A re-inspection survey undertaken by SOCOTEC Asbestos Limited on behalf of Northern Rail. Only photos and plans labelled 184084 are part of this survey. The site consists of a modern steel and timber structure over brick built ticket office and platforms. | | |
| **Disclaimer** | **This data is believed to be complete and compliant to the latest HSE regulations at the time of completion** | | |

## Locations Not Inspected

None

## Survey Detail Reports Overview

| Risk Colour | Survey Date | Building Name | Floor Name | External Name | Room Name | ACM Location | Product Type | Surface Treatment |
|---|---|---|---|---|---|---|---|---|
| LightGrey | 29/10/2014 | MANCHESTER OXFORD RD Rail S | Floor -1 | | Subway | All Accessible Elements | | |
| LightBlue | 25/08/2022 | MANCHESTER OXFORD RD Rail S | Floor 0 | | Platform 2 and 3 Station Retail Staff | 213286: Cement Radiator Backing Panel (EN2178) | Asbestos-reinforced composites (plastics, resins, mastics, roofing felts, vinyl floor tiles, semi-rigid paints or decorative finishes) | Composite materials containing asbestos: reinforced plastics, resins, vinyl tiles |
| LightGrey | 29/10/2014 | MANCHESTER OXFORD RD Rail S | Floor 0 | | Passenger Male WC | All Accessible Elements | | |
| LightGrey | 29/10/2014 | MANCHESTER OXFORD RD Rail S | Floor 0 | | Passenger Female WC | All Accessible Elements | | |
| LightGrey | 29/10/2014 | MANCHESTER OXFORD RD Rail S | Floor 0 | | Platform 2 and 3 Distribution Board Cabinet | Bitumen Cable Wrap | | |
| LightBlue | 25/08/2022 | MANCHESTER OXFORD RD Rail S | Floor 0 | | Platform 2 and 3 Distribution Board Cabinet | 213286: Cement Cable Sleeves To Base (EN2179) | Asbestos-reinforced composites (plastics, resins, mastics, roofing felts, vinyl floor tiles, semi-rigid paints or decorative finishes) | Enclosed sprays and lagging, asbestos insulating board (with exposed face painted or encapsulated), asbestos cement sheets etc |
| LightGrey | 29/10/2014 | MANCHESTER OXFORD RD Rail S | Floor 0 | | Platform 2 and 3 Shelter | All Accessible Elements | | |
| LightGrey | 29/10/2014 | MANCHESTER OXFORD RD Rail S | Floor 0 | | Platform 1 Shelter | All Accessible Elements | | |
| LightGrey | 29/10/2014 | MANCHESTER OXFORD RD Rail S | Floor 0 | | Customer Information Office | All Accessible Elements | | |
| LightGrey | 29/10/2014 | MANCHESTER OXFORD RD Rail S | Floor 0 | | Boiler House | Insulating Board Ceiling Panels | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| LightGrey | 29/10/2014 | MANCHESTER OXFORD RD Rail S | Floor 0 | Switch Room | Bitumen Cable Wrap To English Electrical Units | | |
| LightBlue | 25/08/2022 | MANCHESTER OXFORD RD Rail S | Floor 0 | Switch Room | 213286: Woven material within live electrics multiple (P005) | Asbestos Insulating Board (AIB), millboards, other low-density insulation boards, ropes, asbestos paper | Enclosed sprays and lagging, asbestos insulating board (with exposed face painted or encapsulated), asbestos cement sheets etc |
| LightGrey | 29/10/2014 | MANCHESTER OXFORD RD Rail S | Floor 0 | Slice Pizza Shop Lobby | Insulating Board Boxing Panel Above Door | | |
| LightGreen | 25/08/2022 | MANCHESTER OXFORD RD Rail S | Floor 0 | Slice Pizza Shop Lobby | 213286: Insulating Board Panel Above Door Within Boxing (P002) | Asbestos Insulating Board (AIB), millboards, other low-density insulation boards, ropes, asbestos paper | Enclosed sprays and lagging, asbestos insulating board (with exposed face painted or encapsulated), asbestos cement sheets etc |
| LightGreen | 25/08/2022 | MANCHESTER OXFORD RD Rail S | Floor 0 | Slice Pizza Shop | 213286: Insulating Board Panel Above Counter Within Boxing (P001) | Asbestos Insulating Board (AIB), millboards, other low-density insulation boards, ropes, asbestos paper | Enclosed sprays and lagging, asbestos insulating board (with exposed face painted or encapsulated), asbestos cement sheets etc |
| LightGrey | 29/10/2014 | MANCHESTER OXFORD RD Rail S | Floor 0 | Staff Locker Room | Insulating Board Panel To Wall Behind Lockers | | |
| LightGrey | 29/10/2014 | MANCHESTER OXFORD RD Rail S | Floor 0 | Staff Kitchen | All Accessible Elements | | |
| LightGrey | 29/10/2014 | MANCHESTER OXFORD RD Rail S | Floor 0 | Staff WC Lobby | All Accessible Elements | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| LightGrey | 29/10/2014 | MANCHESTER OXFORD RD Rail S | Floor 0 | Staff Female WC | All Accessible Elements | | |
| LightGrey | 29/10/2014 | MANCHESTER OXFORD RD Rail S | Floor 0 | Staff Male WC | All Accessible Elements | | |
| LightGrey | 29/10/2014 | MANCHESTER OXFORD RD Rail S | Floor 0 | Drivers Mess Room | All Accessible Elements | | |
| LightGrey | 29/10/2014 | MANCHESTER OXFORD RD Rail S | Floor 0 | Electrical Switch Room 2 | Cable Wrap | | |
| LightBlue | 25/08/2022 | MANCHESTER OXFORD RD Rail S | Floor 0 | Electrical Switch Room 2 | 213286: Presumed flash guards to electrical units (P003) | Asbestos Insulating Board (AIB), millboards, other low-density insulation boards, ropes, asbestos paper | Enclosed sprays and lagging, asbestos insulating board (with exposed face painted or encapsulated), asbestos cement sheets etc |
| LightBlue | 25/08/2022 | MANCHESTER OXFORD RD Rail S | Floor 0 | Electrical Switch Room 2 | 213286: Cement Cable Sleeves Running Through Rear Wall (EN2186) | Asbestos-reinforced composites (plastics, resins, mastics, roofing felts, vinyl floor tiles, semi-rigid paints or decorative finishes) | Enclosed sprays and lagging, asbestos insulating board (with exposed face painted or encapsulated), asbestos cement sheets etc |
| LightGrey | 29/10/2014 | MANCHESTER OXFORD RD Rail S | Floor 0 | Pumpkin Servery | All Accessible Elements | | |
| LightGrey | 29/10/2014 | MANCHESTER OXFORD RD Rail S | Floor 0 | Pumpkin WC Lobby | All Accessible Elements | | |
| LightGrey | 25/08/2022 | MANCHESTER OXFORD RD Rail S | Floor 0 | Pumpkin WC | 213286: Cistern (EN2188) REMOVED | | |
| LightBlue | 25/08/2022 | MANCHESTER OXFORD RD Rail S | Floor 0 | Pumpkin Electrical Cupboard | 213286: Bill Electrical Unit (P004) | Asbestos Insulating Board (AIB), millboards, other low-density insulation boards, ropes, asbestos paper | Enclosed sprays and lagging, asbestos insulating board (with exposed face painted or encapsulated), asbestos cement sheets etc |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| LightGrey | 29/10/2014 | MANCHESTER OXFORD RD Rail S | Floor 0 | | Pumpkin Kitchen | All Accessible Elements | | |
| LightGrey | 29/10/2014 | MANCHESTER OXFORD RD Rail S | Floor 0 | | Old Phone Box (store) | All Accessible Elements | | |
| LightGrey | 29/10/2014 | MANCHESTER OXFORD RD Rail S | Floor 0 | | Male WC Cleaners Store | All Accessible Elements | | |
| LightGrey | 29/10/2014 | MANCHESTER OXFORD RD Rail S | Floor 0 | | Dissabled WC | All Accessible Elements | | |
| LightGrey | 29/10/2014 | MANCHESTER OXFORD RD Rail S | Floor 0 | | Ticket Office | All Accessible Elements | | |
| LightGrey | 29/10/2014 | MANCHESTER OXFORD RD Rail S | Floor 0 | | Ticket Office 1 | All Accessible Elements | | |
| LightGrey | 29/10/2014 | MANCHESTER OXFORD RD Rail S | Floor 0 | | Ticket Office Electrical Cupboard | Bitumen Cable Wrap | | |
| LightBlue | 25/08/2022 | MANCHESTER OXFORD RD Rail S | Floor 0 | | Ticket Office Electrical Cupboard | 213286: Woven material within live electrics multiple (P006) | Asbestos Insulating Board (AIB), millboards, other low-density insulation boards, ropes, asbestos paper | Enclosed sprays and lagging, asbestos insulating board (with exposed face painted or encapsulated), asbestos cement sheets etc |
| LightGrey | 29/10/2014 | MANCHESTER OXFORD RD Rail S | Floor 0 | | Ticket Office Lobby | Composite Wall Panels Each Side Of Room | | |
| LightGrey | 29/10/2014 | MANCHESTER OXFORD RD Rail S | Floor 0 | | Station Managers Office | All Accessible Elements | | |
| LightGrey | 29/10/2014 | MANCHESTER OXFORD RD Rail S | Floor 0 | | Pumpkin Cafe Area | All Accessible Elements | | |
| LightGrey | 29/10/2014 | MANCHESTER OXFORD RD Rail S | Floor 0 | | Passenger Male WC Lobby | All Accessible Elements | | |
| LightGrey | 29/10/2014 | MANCHESTER OXFORD RD Rail S | Floor 0 | | Passenger Female WC Lobby | All Accessible Elements | | |
| LightGrey | 29/10/2014 | MANCHESTER OXFORD RD Rail S | Floor 0 | | Passenger Footbridge | All Accessible Elements | | |
| LightGrey | 29/10/2014 | MANCHESTER OXFORD RD Rail S | | Platforms 1 to 5 | | All Accessible Elements | | |

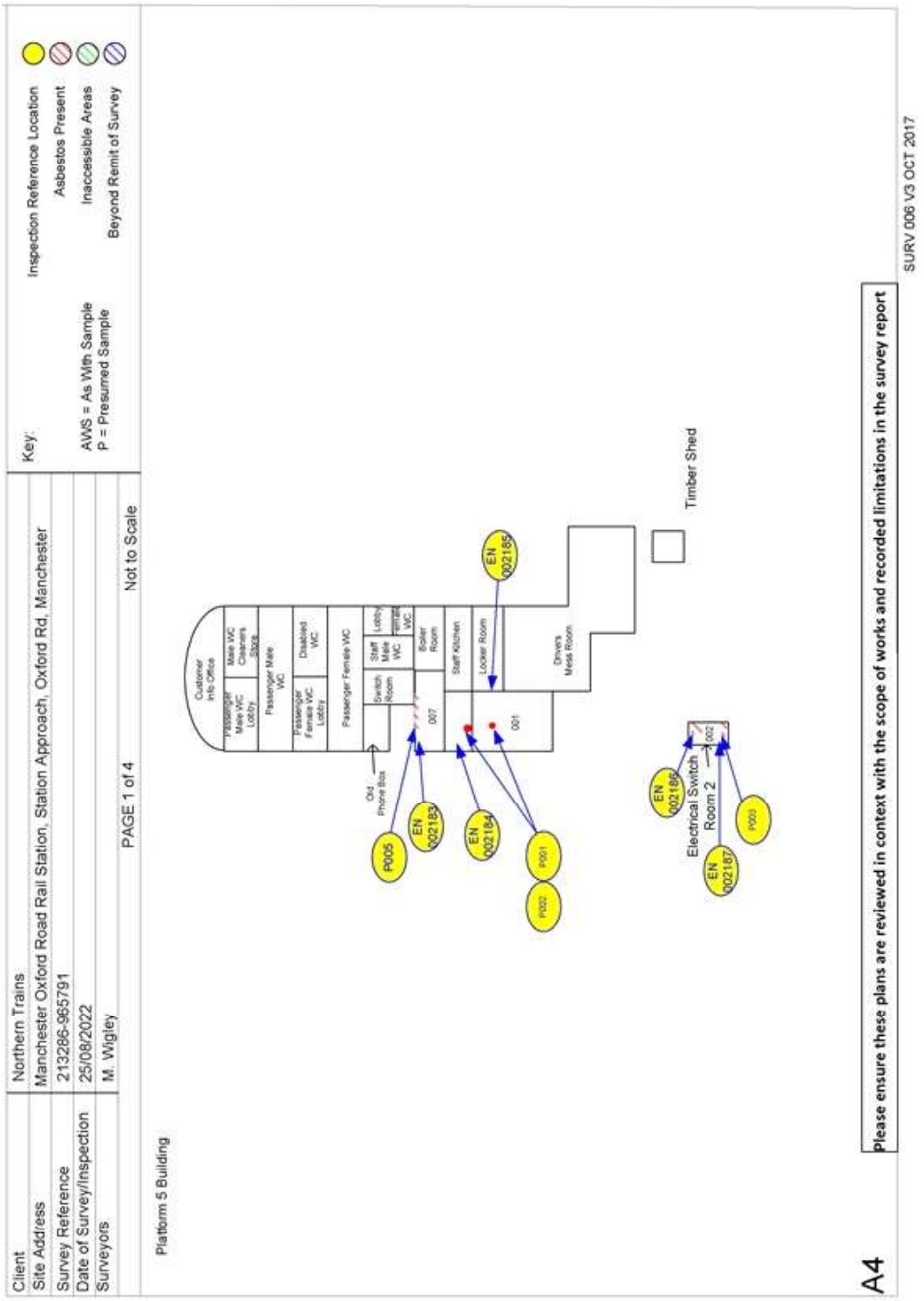
| | | | | | | |
|---|---|---|---|---|---|---|
| LightGrey | 29/10/2014 | MANCHESTER OXFORD RD Rail S | Platform Canopys | All Accessible Elements | | |
| LightGrey | 29/10/2014 | MANCHESTER OXFORD RD Rail S | Timber Shed | Roof Felt | | |
| LightBlue | 25/08/2022 | MANCHESTER OXFORD RD Rail S | Platform 5 Building Roof | 213286: Roof Felt (EN2192) | Asbestos-reinforced composites (plastics, resins, mastics, roofing felts, vinyl floor tiles, semi-rigid paints or decorative finishes) | Composite materials containing asbestos: reinforced plastics, resins, vinyl tiles |
| LightBlue | 25/08/2022 | MANCHESTER OXFORD RD Rail S | Ticket Office Building Roof | 213286: Roof Felt (EN2191) | Asbestos-reinforced composites (plastics, resins, mastics, roofing felts, vinyl floor tiles, semi-rigid paints or decorative finishes) | Composite materials containing asbestos: reinforced plastics, resins, vinyl tiles |
| LightBlue | 25/08/2022 | MANCHESTER OXFORD RD Rail S | Boiler House | 213286: Roof Felt (EN2182) | Asbestos-reinforced composites (plastics, resins, mastics, roofing felts, vinyl floor tiles, semi-rigid paints or decorative finishes) | Composite materials containing asbestos: reinforced plastics, resins, vinyl tiles |

## Site Images

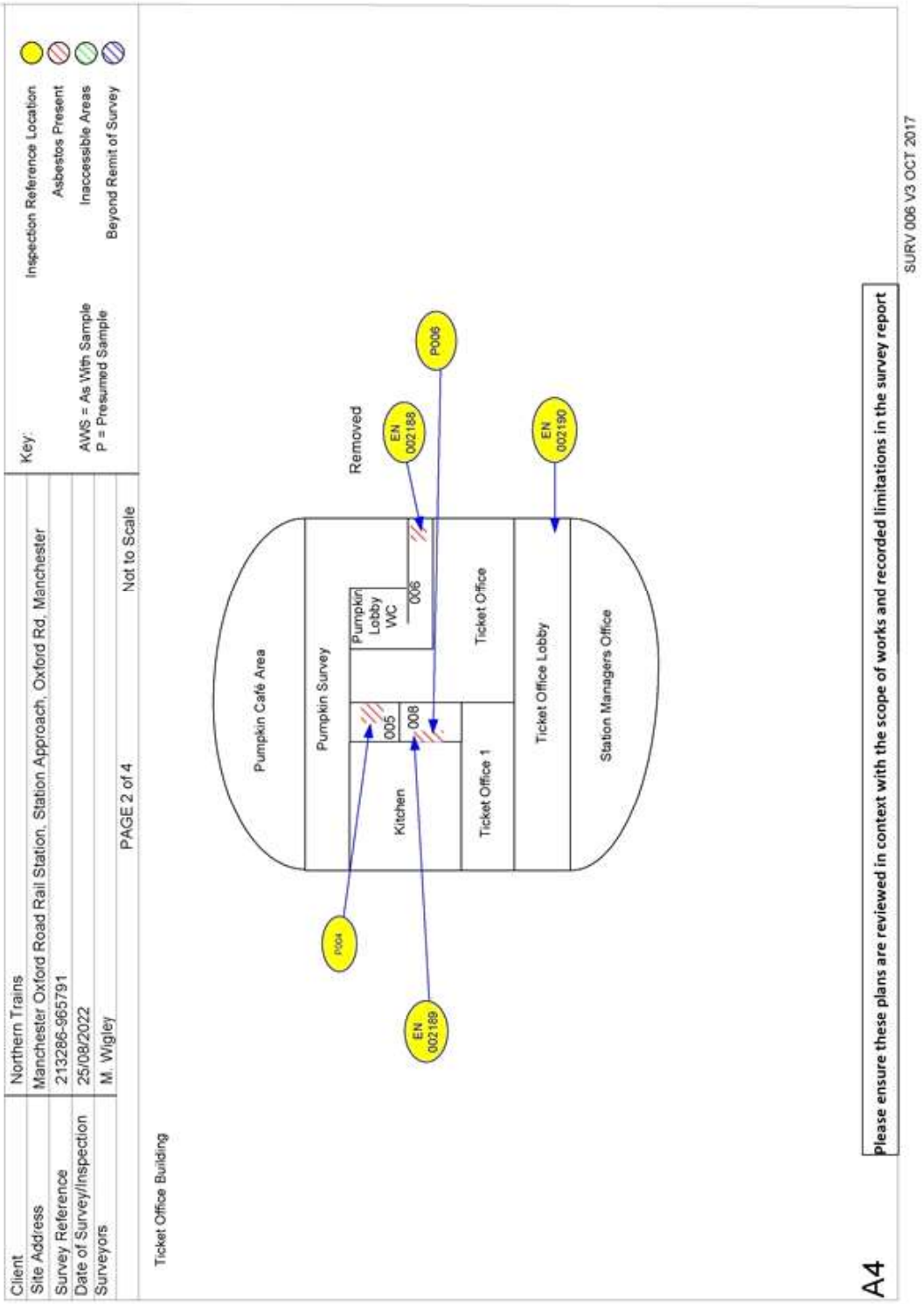



213286: Site Photo

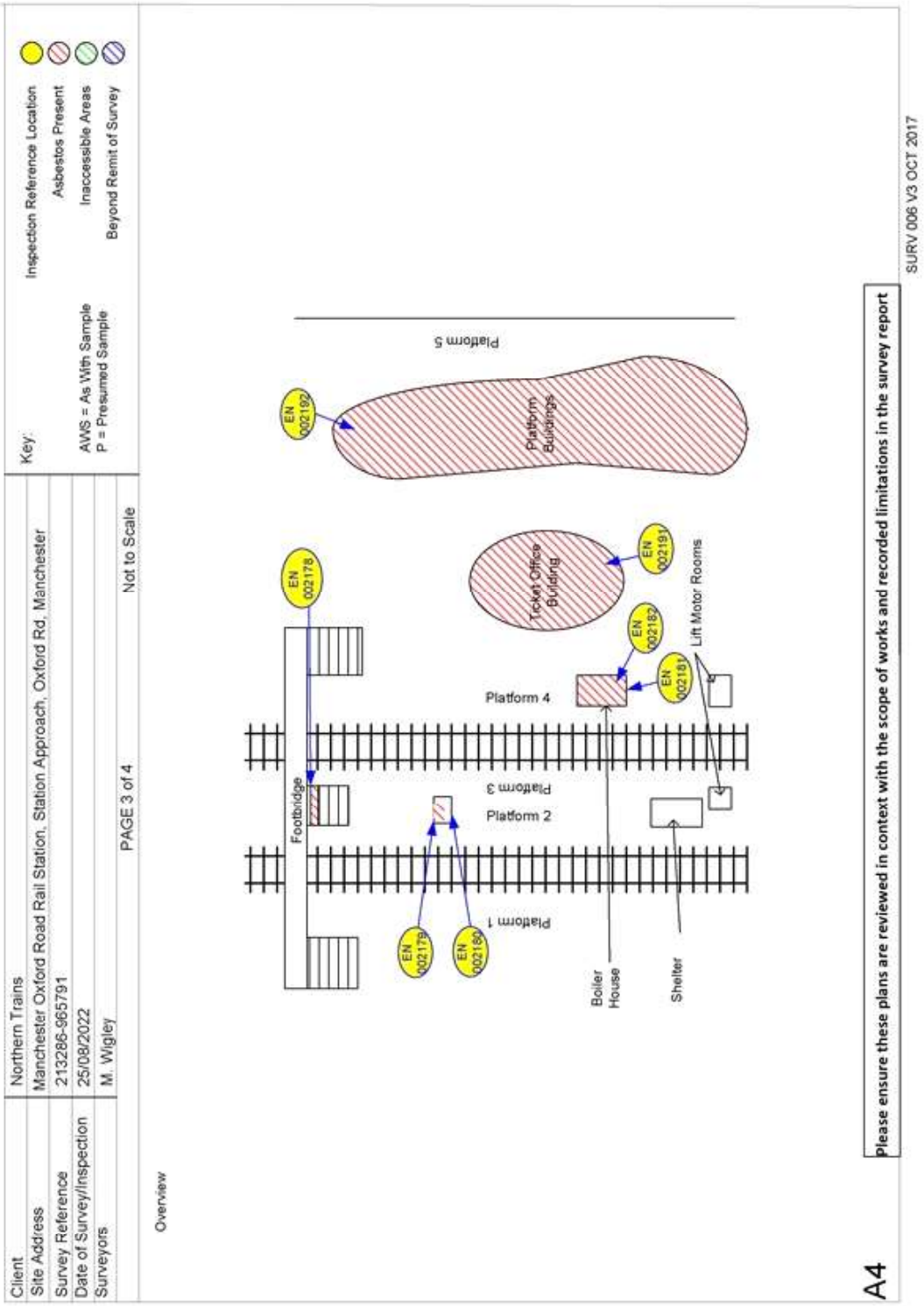
## Site Drawings



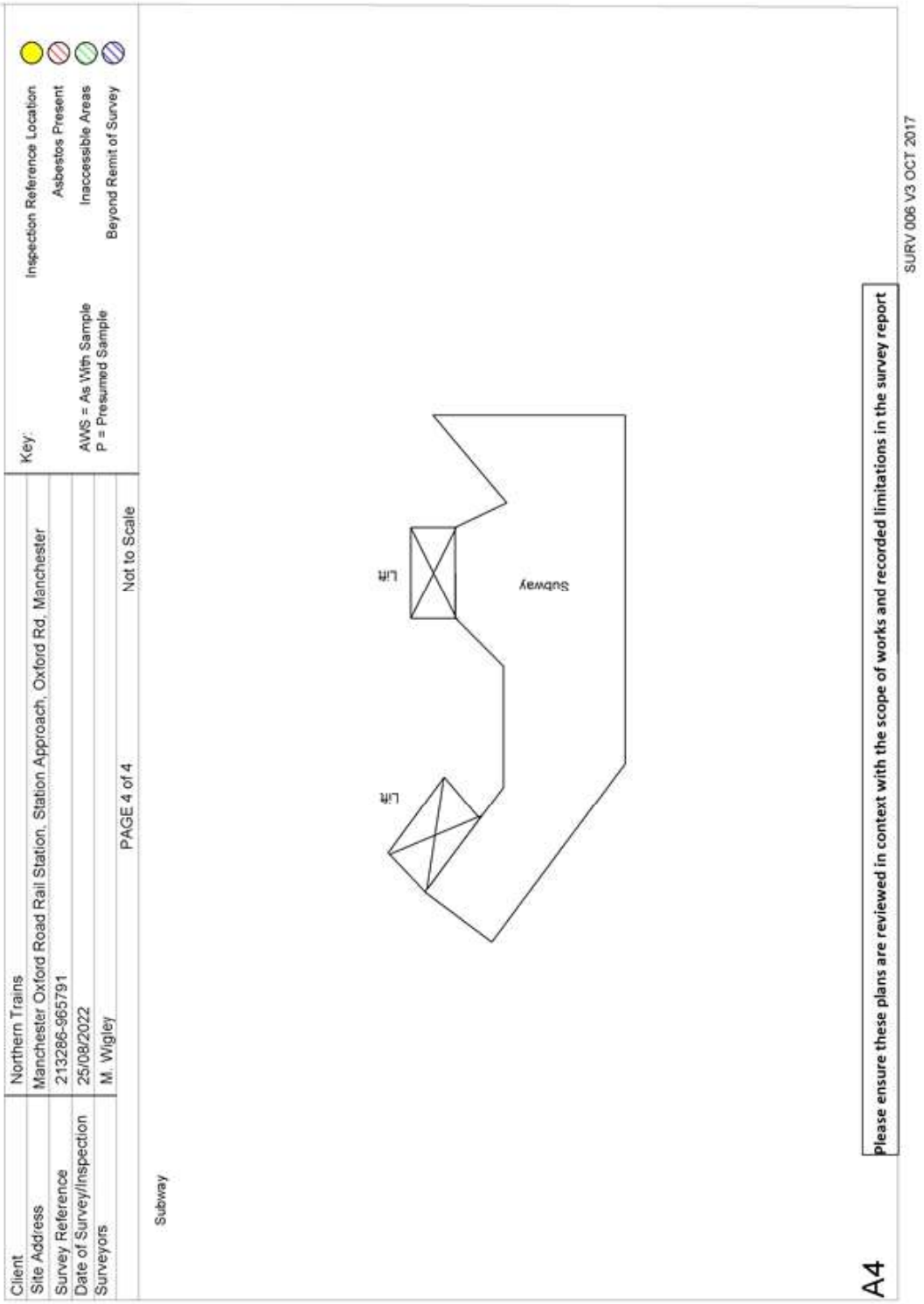

213286: Site Plan 1




213286: Site Plan 2




213286: Site Plan 3




213286: Site Plan 4

# MANCHESTER OXFORD RD Rail S
## Floor 0
## Electrical Switch Room 2

| | | | |
|---|---|---|---|
| **Survey Reference** | 1006558 | | |
| **Primary Contractor Name** | SOCOTEC Asbestos Limited | | |
| **ACM Location** | 213286: Cement Cable Sleeves Running Through Rear Wall (EN2186) | | |
| **ACM Type** | Chrysotile | | |
| **Asbestos Known or Presumed?** | Asbestos Known | | |
| **Extent of Damage or Deterioration** | Low damage, scratches or surface marks, broken edges of boards, tiles, etc | | |
| **Surface Treatment** | Enclosed sprays and lagging, asbestos insulating board (with exposed face painted or encapsulated), asbestos cement sheets etc | | |
| **Product Type** | Asbestos-reinforced composites (plastics, resins, mastics, roofing felts, vinyl floor tiles, semi-rigid paints or decorative finishes) | | |
| **Secondary Product Type** | | | |
| **Quantity of Asbestos Present** | . | | |
| **Referred to Sample** | | | |
| **Assement Factor** | **Normal Occupant Activity** | **Score** | 0 |
| **Main type of activity in area** | Rare disturbance activity (e.g. little used store room) | | |
| **Description of activity** | Cement Cable Sleeves Running Through Rear Wall | | |
| **Secondary activities for area** | | | |
| **Description of activities** | | | |
| **Assement Factor** | **Likelihood of disturbance** | **Score** | 1 |
| **Location** | Rooms up to 100 m2 | | |
| **Accessibility** | Occasionally likely to be disturbed | | |
| **Extent/amount** | Small amounts or items (eg strings, gaskets) | | |
| **Assement Factor** | **Human exposure potential** | **Score** | 0 |
| **Number of occupants** | None | | |
| **Frequence of use of area** | Infrequent | | |
| **Average time area is in use** | <= 1 hour | | |
| **Assement Factor** | **Maintenance Activity** | **Score** | 0 |
| **Type of maintenance activity** | Minor disturbance (eg possibility of contact when gaining access) | | |
| **Frequency of maintenance activity** | ACM unlikely to be disturbed for maintenance | | |

### Automatic Risk Assessment

| | |
|---|---|
| **Material Assessment Score** | 4 |
| **Material Assessment Rating** | Very Low |
| **Priority Assessment Score** | 1 |
| **Risk Score** | 5 |
| **Risk Rating** | Very Low |
| **Risk Colour** | LightBlue |
| **Recommendation** | Manage in situ. Remove only if serious damage or deterioration. Label material. Make periodic check inspections. Asbestos treatment works is not necessary. Implement a management plan that allows for the regular assessment to confirm the materials continued very low health risk potential category. An ACM in this category is indicative of a material requiring little attention, as it is not at risk from disturbance and will already be encapsulated and sealed, or will be an asbestos reinforced composite material, which have little opportunity to release fibres unless the matrix is removed or subject to high levels of abrasion. |

**Surveyor's Risk Assessment**

| | | | |
|---|---|---|---|
| **Re-inspection Frequency (in months)** | **36** | **Re-inspection Frequency description** | Inspect Triennially |
| **Next Inspection Date** | **25-Aug-2025** | **Next Inspection Date Override** | |
| **Overridden Reinspection Frequency** | | **Overridden Reinspection Frequency Description** | |

**Risk Assessment**

| | |
|---|---|
| **Comments** | Small Amounts (3) - Cement Cable Sleeves Running Through Rear Wall - Repair & Seal - Asbestos Identified (EN2186).<br><br>No change on 2022 reinspection – continue to monitor. |
| **Surveyor's Recommended Action** | Manage in Situ |
| **Exact Quantity of removal work required** | |

## Images



**213286: Cement Cable Sleeves Running Through Rear Wall (EN2186)**

| | | | |
|---|---|---|---|
| **Survey Reference** | 1006557 | | |
| **Primary Contractor Name** | SOCOTEC Asbestos Limited | | |
| **ACM Location** | 213286: Presumed flash guards to electrical units (P003) | | |
| **ACM Type** | Chrysotile | | |
| **Asbestos Known or Presumed?** | Asbestos Presumed | | |
| **Extent of Damage or Deterioration** | Good Condition; no visible damage | | |
| **Surface Treatment** | Enclosed sprays and lagging, asbestos insulating board (with exposed face painted or encapsulated), asbestos cement sheets etc | | |
| **Product Type** | Asbestos Insulating Board (AIB), millboards, other low-density insulation boards, ropes, asbestos paper | | |
| **Secondary Product Type** | | | |
| **Quantity of Asbestos Present** | . | | |
| **Referred to Sample** | | | |
| **Assement Factor** | **Normal Occupant Activity** | **Score** | 0 |
| **Main type of activity in area** | Rare disturbance activity (e.g. little used store room) | | |
| **Description of activity** | Electrical Units | | |
| **Secondary activities for area** | | | |
| **Description of activities** | | | |
| **Assement Factor** | **Likelihood of disturbance** | **Score** | 1 |
| **Location** | Rooms up to 100 m2 | | |
| **Accessibility** | Usually inaccessible or unlikely to be disturbed | | |
| **Extent/amount** | Small amounts or items (eg strings, gaskets) | | |
| **Assement Factor** | **Human exposure potential** | **Score** | 0 |
| **Number of occupants** | None | | |
| **Frequence of use of area** | Infrequent | | |
| **Average time area is in use** | <= 1 hour | | |
| **Assement Factor** | **Maintenance Activity** | **Score** | 0 |
| **Type of maintenance activity** | Minor disturbance (eg possibility of contact when gaining access) | | |
| **Frequency of maintenance activity** | ACM unlikely to be disturbed for maintenance | | |

### Automatic Risk Assessment

| | |
|---|---|
| **Material Assessment Score** | 4 |
| **Material Assessment Rating** | Very Low |
| **Priority Assessment Score** | 1 |
| **Risk Score** | 5 |
| **Risk Rating** | Very Low |
| **Risk Colour** | LightBlue |
| **Recommendation** | Manage in situ. Remove only if serious damage or deterioration. Label material. Make periodic check inspections. Asbestos treatment works is not necessary. Implement a management plan that allows for the regular assessment to confirm the materials continued very low health risk potential category. An ACM in this category is indicative of a material requiring little attention, as it is not at risk from disturbance and will already be encapsulated and sealed, or will be an asbestos reinforced composite material, which have little opportunity to release fibres unless the matrix is removed or subject to high levels of abrasion. |

### Surveyor's Risk Assessment

| | | | |
|---|---|---|---|
| **Re-inspection Frequency (in months)** | **12** | **Re-inspection Frequency description** | Inspect Yearly |
| **Next Inspection Date** | **25-Aug-2023** | **Next Inspection Date Override** | |
| **Overridden Reinspection Frequency** | | **Overridden Reinspection Frequency Description** | |

**Risk Assessment**

**Comments** Small Amounts - Electrical Units - Inspect at Intervals - Asbestos Presumed.

No change on 2022 reinspection – continue to monitor.

**Surveyor's Recommended Action** Manage in Situ

**Exact Quantity of removal work required**

## Images



**213286: Presumed flash guards to electrical units (P003)**

# MANCHESTER OXFORD RD Rail S
## Floor 0
## Platform 2 and 3 Distribution Board Cabinet

| | | | |
|---|---|---|---|
| **Survey Reference** | 1006540 | | |
| **Primary Contractor Name** | SOCOTEC Asbestos Limited | | |
| **ACM Location** | 213286: Cement Cable Sleeves To Base (EN2179) | | |
| **ACM Type** | Chrysotile | | |
| **Asbestos Known or Presumed?** | Asbestos Known | | |
| **Extent of Damage or Deterioration** | Low damage, scratches or surface marks, broken edges of boards, tiles, etc | | |
| **Surface Treatment** | Enclosed sprays and lagging, asbestos insulating board (with exposed face painted or encapsulated), asbestos cement sheets etc | | |
| **Product Type** | Asbestos-reinforced composites (plastics, resins, mastics, roofing felts, vinyl floor tiles, semi-rigid paints or decorative finishes) | | |
| **Secondary Product Type** | | | |
| **Quantity of Asbestos Present** | . | | |
| **Referred to Sample** | | | |
| **Assement Factor** | **Normal Occupant Activity** | **Score** | 0 |
| **Main type of activity in area** | Rare disturbance activity (e.g. little used store room) | | |
| **Description of activity** | Cement Cable Sleeves To Base | | |
| **Secondary activities for area** | | | |
| **Description of activities** | | | |
| **Assement Factor** | **Likelihood of disturbance** | **Score** | 2 |
| **Location** | Confined spaces | | |
| **Accessibility** | Usually inaccessible or unlikely to be disturbed | | |
| **Extent/amount** | <=10 m2 or <=10 m pipe run. | | |
| **Assement Factor** | **Human exposure potential** | **Score** | 0 |
| **Number of occupants** | None | | |
| **Frequence of use of area** | Infrequent | | |
| **Average time area is in use** | <= 1 hour | | |
| **Assement Factor** | **Maintenance Activity** | **Score** | 0 |
| **Type of maintenance activity** | Minor disturbance (eg possibility of contact when gaining access) | | |
| **Frequency of maintenance activity** | ACM unlikely to be disturbed for maintenance | | |

### Automatic Risk Assessment

| | |
|---|---|
| **Material Assessment Score** | 4 |
| **Material Assessment Rating** | Very Low |
| **Priority Assessment Score** | 2 |
| **Risk Score** | 6 |
| **Risk Rating** | Very Low |
| **Risk Colour** | LightBlue |
| **Recommendation** | Manage in situ. Remove only if serious damage or deterioration. Label material. Make periodic check inspections. Asbestos treatment works is not necessary. Implement a management plan that allows for the regular assessment to confirm the materials continued very low health risk potential category. An ACM in this category is indicative of a material requiring little attention, as it is not at risk from disturbance and will already be encapsulated and sealed, or will be an asbestos reinforced composite material, which have little opportunity to release fibres unless the matrix is removed or subject to high levels of abrasion. |

**Surveyor's Risk Assessment**

| | | | |
|---|---|---|---|
| **Re-inspection Frequency (in months)** | **36** | **Re-inspection Frequency description** | Inspect Triennially |
| **Next Inspection Date** | **25-Aug-2025** | **Next Inspection Date Override** | |
| **Overridden Reinspection Frequency** | | **Overridden Reinspection Frequency Description** | |

**Risk Assessment**

| | |
|---|---|
| **Comments** | Small Amounts 2 - Cement Cable Sleeves To Base - Inspect at Intervals - Asbestos Identified - (EN2179).<br><br>No changes to scores on 2022 re-inspection – continue to monitor. |
| **Surveyor's Recommended Action** | Manage in Situ |
| **Exact Quantity of removal work required** | |

## Images



**213286: Cement Cable Sleeves To Base (EN2179)**

# MANCHESTER OXFORD RD Rail S
## Floor 0
## Platform 2 and 3 Station Retail Staff

| | | | |
|---|---|---|---|
| **Survey Reference** | 1006536 | | |
| **Primary Contractor Name** | SOCOTEC Asbestos Limited | | |
| **ACM Location** | 213286: Cement Radiator Backing Panel (EN2178) | | |
| **ACM Type** | Chrysotile | | |
| **Asbestos Known or Presumed?** | Asbestos Known | | |
| **Extent of Damage or Deterioration** | Low damage, scratches or surface marks, broken edges of boards, tiles, etc | | |
| **Surface Treatment** | Composite materials containing asbestos: reinforced plastics, resins, vinyl tiles | | |
| **Product Type** | Asbestos-reinforced composites (plastics, resins, mastics, roofing felts, vinyl floor tiles, semi-rigid paints or decorative finishes) | | |
| **Secondary Product Type** | | | |
| **Quantity of Asbestos Present** | . | | |
| **Referred to Sample** | | | |
| **Assement Factor** | **Normal Occupant Activity** | **Score** | 0 |
| **Main type of activity in area** | Rare disturbance activity (e.g. little used store room) | | |
| **Description of activity** | Cement Radiator Backing Panel | | |
| **Secondary activities for area** | | | |
| **Description of activities** | | | |
| **Assement Factor** | **Likelihood of disturbance** | **Score** | 2 |
| **Location** | Rooms up to 100 m2 | | |
| **Accessibility** | Occasionally likely to be disturbed | | |
| **Extent/amount** | <=10 m2 or <=10 m pipe run. | | |
| **Assement Factor** | **Human exposure potential** | **Score** | 2 |
| **Number of occupants** | 1 to 3 | | |
| **Frequence of use of area** | Daily | | |
| **Average time area is in use** | >3 to <=6 hours | | |
| **Assement Factor** | **Maintenance Activity** | **Score** | 0 |
| **Type of maintenance activity** | Minor disturbance (eg possibility of contact when gaining access) | | |
| **Frequency of maintenance activity** | ACM unlikely to be disturbed for maintenance | | |

### Automatic Risk Assessment

| | |
|---|---|
| **Material Assessment Score** | 3 |
| **Material Assessment Rating** | Very Low |
| **Priority Assessment Score** | 4 |
| **Risk Score** | 7 |
| **Risk Rating** | Very Low |
| **Risk Colour** | LightBlue |
| **Recommendation** | Manage in situ. Remove only if serious damage or deterioration. Label material. Make periodic check inspections. Asbestos treatment works is not necessary. Implement a management plan that allows for the regular assessment to confirm the materials continued very low health risk potential category. An ACM in this category is indicative of a material requiring little attention, as it is not at risk from disturbance and will already be encapsulated and sealed, or will be an asbestos reinforced composite material, which have little opportunity to release fibres unless the matrix is removed or subject to high levels of abrasion. |

### Surveyor's Risk Assessment

| | | | |
|---|---|---|---|
| **Re-inspection Frequency (in months)** | **36** | **Re-inspection Frequency description** | Inspect Triennially |
| **Next Inspection Date** | **25-Aug-2025** | **Next Inspection Date Override** | |
| **Overridden Reinspection Frequency** | | **Overridden Reinspection Frequency Description** | |

**Risk Assessment**

**Comments** 1 Meter Squared - Cement Radiator Backing Panel - Inspect at Intervals - Asbestos Identified - (EN2178).

Some change to score 2022 - Continue to monitor.

**Surveyor's Recommended Action** Manage in Situ

**Exact Quantity of removal work required**

## Images



**213286: Cement Radiator Backing Panel (EN2178)**

# MANCHESTER OXFORD RD Rail S
## Floor 0
## Pumpkin Electrical Cupboard

| | | | |
|---|---|---|---|
| **Survey Reference** | 1006562 | | |
| **Primary Contractor Name** | SOCOTEC Asbestos Limited | | |
| **ACM Location** | 213286: Bill Electrical Unit (P004) | | |
| **ACM Type** | Chrysotile | | |
| **Asbestos Known or Presumed?** | Asbestos Presumed | | |
| **Extent of Damage or Deterioration** | Good Condition; no visible damage | | |
| **Surface Treatment** | Enclosed sprays and lagging, asbestos insulating board (with exposed face painted or encapsulated), asbestos cement sheets etc | | |
| **Product Type** | Asbestos Insulating Board (AIB), millboards, other low-density insulation boards, ropes, asbestos paper | | |
| **Secondary Product Type** | | | |
| **Quantity of Asbestos Present** | . | | |
| **Referred to Sample** | | | |
| **Assement Factor** | **Normal Occupant Activity** | **Score** | 0 |
| **Main type of activity in area** | Rare disturbance activity (e.g. little used store room) | | |
| **Description of activity** | Bill Electrical Unit | | |
| **Secondary activities for area** | | | |
| **Description of activities** | | | |
| **Assement Factor** | **Likelihood of disturbance** | **Score** | 1 |
| **Location** | Rooms up to 100 m2 | | |
| **Accessibility** | Usually inaccessible or unlikely to be disturbed | | |
| **Extent/amount** | Small amounts or items (eg strings, gaskets) | | |
| **Assement Factor** | **Human exposure potential** | **Score** | 0 |
| **Number of occupants** | None | | |
| **Frequence of use of area** | Infrequent | | |
| **Average time area is in use** | <= 1 hour | | |
| **Assement Factor** | **Maintenance Activity** | **Score** | 0 |
| **Type of maintenance activity** | Minor disturbance (eg possibility of contact when gaining access) | | |
| **Frequency of maintenance activity** | ACM unlikely to be disturbed for maintenance | | |

### Automatic Risk Assessment

| | |
|---|---|
| **Material Assessment Score** | 4 |
| **Material Assessment Rating** | Very Low |
| **Priority Assessment Score** | 1 |
| **Risk Score** | 5 |
| **Risk Rating** | Very Low |
| **Risk Colour** | LightBlue |
| **Recommendation** | Manage in situ. Remove only if serious damage or deterioration. Label material. Make periodic check inspections. Asbestos treatment works is not necessary. Implement a management plan that allows for the regular assessment to confirm the materials continued very low health risk potential category. An ACM in this category is indicative of a material requiring little attention, as it is not at risk from disturbance and will already be encapsulated and sealed, or will be an asbestos reinforced composite material, which have little opportunity to release fibres unless the matrix is removed or subject to high levels of abrasion. |

### Surveyor's Risk Assessment

| | | | |
|---|---|---|---|
| **Re-inspection Frequency (in months)** | **12** | **Re-inspection Frequency description** | Inspect Yearly |
| **Next Inspection Date** | **25-Aug-2023** | **Next Inspection Date Override** | |
| **Overridden Reinspection Frequency** | | **Overridden Reinspection Frequency Description** | |

**Risk Assessment**

**Comments** Small Amounts - Bill Electrical Unit - Inspect at Intervals - Asbestos Presumed.

No change on 2022 reinspection – continue to monitor.

**Surveyor's Recommended Action** Manage in Situ

**Exact Quantity of removal work required**

## Images



**213286: Bill Electrical Unit (P004)**

# MANCHESTER OXFORD RD Rail S
## Floor 0
## Slice Pizza Shop

| | | | |
|---|---|---|---|
| **Survey Reference** | 1006549 | | |
| **Primary Contractor Name** | SOCOTEC Asbestos Limited | | |
| **ACM Location** | 213286: Insulating Board Panel Above Counter Within Boxing (P001) | | |
| **ACM Type** | Chrysotile | | |
| **Asbestos Known or Presumed?** | Asbestos Presumed | | |
| **Extent of Damage or Deterioration** | Good Condition; no visible damage | | |
| **Surface Treatment** | Enclosed sprays and lagging, asbestos insulating board (with exposed face painted or encapsulated), asbestos cement sheets etc | | |
| **Product Type** | Asbestos Insulating Board (AIB), millboards, other low-density insulation boards, ropes, asbestos paper | | |
| **Secondary Product Type** | | | |
| **Quantity of Asbestos Present** | . | | |
| **Referred to Sample** | | | |
| **Assement Factor** | **Normal Occupant Activity** | **Score** | 1 |
| **Main type of activity in area** | Low disturbance activities (e.g. office type activity) | | |
| **Description of activity** | Insulating Board Panel Above Counter Within Boxing | | |
| **Secondary activities for area** | | | |
| **Description of activities** | | | |
| **Assement Factor** | **Likelihood of disturbance** | **Score** | 1 |
| **Location** | Rooms up to 100 m2 | | |
| **Accessibility** | Usually inaccessible or unlikely to be disturbed | | |
| **Extent/amount** | <=10 m2 or <=10 m pipe run. | | |
| **Assement Factor** | **Human exposure potential** | **Score** | 3 |
| **Number of occupants** | 1 to 3 | | |
| **Frequence of use of area** | Daily | | |
| **Average time area is in use** | >6 hours | | |
| **Assement Factor** | **Maintenance Activity** | **Score** | 0 |
| **Type of maintenance activity** | Minor disturbance (eg possibility of contact when gaining access) | | |
| **Frequency of maintenance activity** | ACM unlikely to be disturbed for maintenance | | |

### Automatic Risk Assessment

| | |
|---|---|
| **Material Assessment Score** | 4 |
| **Material Assessment Rating** | Very Low |
| **Priority Assessment Score** | 5 |
| **Risk Score** | 9 |
| **Risk Rating** | Low |
| **Risk Colour** | LightGreen |
| **Recommendation** | No immediate remedial measures. Plan for removal. Label material. Make periodic check inspections. The ACM presents a risk to health and there is a low potential to release fibres if disturbed. The minimum asbestos treatment works necessary to render the material completely safe should be undertaken as soon as reasonably practicable, adopting appropriate asbestos working conditions and prioritising other risk category medium or high materials first. Decontamination of associated areas affected by the ACM may also be necessary. |

### Surveyor's Risk Assessment

| | | | |
|---|---|---|---|
| **Re-inspection Frequency (in months)** | **12** | **Re-inspection Frequency description** | Inspect Yearly |
| **Next Inspection Date** | **25-Aug-2023** | **Next Inspection Date Override** | |
| **Overridden Reinspection Frequency** | | **Overridden Reinspection Frequency Description** | |

**Risk Assessment**

**Comments** 4 Meters Squared - Insulating Board Panel Above Counter Within Boxing - Inspect at Intervals - Asbestos Presumed.

No change on 2022 reinspection – continue to monitor.

**Surveyor's Recommended Action** Manage in Situ

**Exact Quantity of removal work required**

## Images



**213286: Insulating Board Panel Above Counter Within Boxing (P001)**

## MANCHESTER OXFORD RD Rail S
### Floor 0
### Slice Pizza Shop Lobby

| | | | |
|---|---|---|---|
| **Survey Reference** | 1006548 | | |
| **Primary Contractor Name** | SOCOTEC Asbestos Limited | | |
| **ACM Location** | 213286: Insulating Board Panel Above Door Within Boxing (P002) | | |
| **ACM Type** | Chrysotile | | |
| **Asbestos Known or Presumed?** | Asbestos Presumed | | |
| **Extent of Damage or Deterioration** | Good Condition; no visible damage | | |
| **Surface Treatment** | Enclosed sprays and lagging, asbestos insulating board (with exposed face painted or encapsulated), asbestos cement sheets etc | | |
| **Product Type** | Asbestos Insulating Board (AIB), millboards, other low-density insulation boards, ropes, asbestos paper | | |
| **Secondary Product Type** | | | |
| **Quantity of Asbestos Present** | . | | |
| **Referred to Sample** | | | |
| **Assement Factor** | **Normal Occupant Activity** | **Score** | 1 |
| **Main type of activity in area** | Low disturbance activities (e.g. office type activity) | | |
| **Description of activity** | Insulating Board Panel Above Door Within Boxing | | |
| **Secondary activities for area** | | | |
| **Description of activities** | | | |
| **Assement Factor** | **Likelihood of disturbance** | **Score** | 1 |
| **Location** | Rooms up to 100 m2 | | |
| **Accessibility** | Usually inaccessible or unlikely to be disturbed | | |
| **Extent/amount** | <=10 m2 or <=10 m pipe run. | | |
| **Assement Factor** | **Human exposure potential** | **Score** | 3 |
| **Number of occupants** | 1 to 3 | | |
| **Frequence of use of area** | Daily | | |
| **Average time area is in use** | >6 hours | | |
| **Assement Factor** | **Maintenance Activity** | **Score** | 0 |
| **Type of maintenance activity** | Minor disturbance (eg possibility of contact when gaining access) | | |
| **Frequency of maintenance activity** | ACM unlikely to be disturbed for maintenance | | |

### Automatic Risk Assessment

| | |
|---|---|
| **Material Assessment Score** | 4 |
| **Material Assessment Rating** | Very Low |
| **Priority Assessment Score** | 5 |
| **Risk Score** | 9 |
| **Risk Rating** | Low |
| **Risk Colour** | LightGreen |
| **Recommendation** | No immediate remedial measures. Plan for removal. Label material. Make periodic check inspections. The ACM presents a risk to health and there is a low potential to release fibres if disturbed. The minimum asbestos treatment works necessary to render the material completely safe should be undertaken as soon as reasonably practicable, adopting appropriate asbestos working conditions and prioritising other risk category medium or high materials first. Decontamination of associated areas affected by the ACM may also be necessary. |

### Surveyor's Risk Assessment

| | | | |
|---|---|---|---|
| **Re-inspection Frequency (in months)** | **12** | **Re-inspection Frequency description** | Inspect Yearly |
| **Next Inspection Date** | **25-Aug-2023** | **Next Inspection Date Override** | |
| **Overridden Reinspection Frequency** | | **Overridden Reinspection Frequency Description** | |

**Risk Assessment**

**Comments** <1 meter squared - Insulating Board Panel Above Door Within Boxing - Inspect at Intervals - Asbestos Presumed.

No change on 2022 reinspection – continue to monitor.

**Surveyor's Recommended Action** Manage in Situ

**Exact Quantity of removal work required**

## Images



**213286: Insulating Board Panel Above Door Within Boxing (P002)**

## MANCHESTER OXFORD RD Rail S
### Floor 0
### Switch Room

| | | | |
|---|---|---|---|
| **Survey Reference** | 1006546 | | |
| **Primary Contractor Name** | SOCOTEC Asbestos Limited | | |
| **ACM Location** | 213286: Woven material within live electrics multiple (P005) | | |
| **ACM Type** | Chrysotile | | |
| **Asbestos Known or Presumed?** | Asbestos Presumed | | |
| **Extent of Damage or Deterioration** | Good Condition; no visible damage | | |
| **Surface Treatment** | Enclosed sprays and lagging, asbestos insulating board (with exposed face painted or encapsulated), asbestos cement sheets etc | | |
| **Product Type** | Asbestos Insulating Board (AIB), millboards, other low-density insulation boards, ropes, asbestos paper | | |
| **Secondary Product Type** | | | |
| **Quantity of Asbestos Present** | . | | |
| **Referred to Sample** | | | |
| **Assement Factor** | **Normal Occupant Activity** | **Score** | 0 |
| **Main type of activity in area** | Rare disturbance activity (e.g. little used store room) | | |
| **Description of activity** | English Electrical Units | | |
| **Secondary activities for area** | | | |
| **Description of activities** | | | |
| **Assement Factor** | **Likelihood of disturbance** | **Score** | 1 |
| **Location** | Rooms up to 100 m2 | | |
| **Accessibility** | Usually inaccessible or unlikely to be disturbed | | |
| **Extent/amount** | Small amounts or items (eg strings, gaskets) | | |
| **Assement Factor** | **Human exposure potential** | **Score** | 0 |
| **Number of occupants** | None | | |
| **Frequence of use of area** | Infrequent | | |
| **Average time area is in use** | <= 1 hour | | |
| **Assement Factor** | **Maintenance Activity** | **Score** | 0 |
| **Type of maintenance activity** | Minor disturbance (eg possibility of contact when gaining access) | | |
| **Frequency of maintenance activity** | ACM unlikely to be disturbed for maintenance | | |

### Automatic Risk Assessment

| | |
|---|---|
| **Material Assessment Score** | 4 |
| **Material Assessment Rating** | Very Low |
| **Priority Assessment Score** | 1 |
| **Risk Score** | 5 |
| **Risk Rating** | Very Low |
| **Risk Colour** | LightBlue |
| **Recommendation** | Manage in situ. Remove only if serious damage or deterioration. Label material. Make periodic check inspections. Asbestos treatment works is not necessary. Implement a management plan that allows for the regular assessment to confirm the materials continued very low health risk potential category. An ACM in this category is indicative of a material requiring little attention, as it is not at risk from disturbance and will already be encapsulated and sealed, or will be an asbestos reinforced composite material, which have little opportunity to release fibres unless the matrix is removed or subject to high levels of abrasion. |

### Surveyor's Risk Assessment

| | | | |
|---|---|---|---|
| **Re-inspection Frequency (in months)** | **12** | **Re-inspection Frequency description** | Inspect Yearly |
| **Next Inspection Date** | **25-Aug-2023** | **Next Inspection Date Override** | |
| **Overridden Reinspection Frequency** | | **Overridden Reinspection Frequency Description** | |

**Risk Assessment**

**Comments** Small Amounts - Fuse Pads - Inspect at Intervals - Asbestos Presumed.

No change on 2022 reinspection – continue to monitor.

**Surveyor's Recommended Action** Manage in Situ

**Exact Quantity of removal work required**

## Images



**213286: Woven material within live electrics multiple (P005)**

# MANCHESTER OXFORD RD Rail S
## Floor 0
## Ticket Office Electrical Cupboard

| | | | |
|---|---|---|---|
| **Survey Reference** | 1006570 | | |
| **Primary Contractor Name** | SOCOTEC Asbestos Limited | | |
| **ACM Location** | 213286: Woven material within live electrics multiple (P006) | | |
| **ACM Type** | Chrysotile | | |
| **Asbestos Known or Presumed?** | Asbestos Presumed | | |
| **Extent of Damage or Deterioration** | Good Condition; no visible damage | | |
| **Surface Treatment** | Enclosed sprays and lagging, asbestos insulating board (with exposed face painted or encapsulated), asbestos cement sheets etc | | |
| **Product Type** | Asbestos Insulating Board (AIB), millboards, other low-density insulation boards, ropes, asbestos paper | | |
| **Secondary Product Type** | | | |
| **Quantity of Asbestos Present** | . | | |
| **Referred to Sample** | | | |
| **Assement Factor** | **Normal Occupant Activity** | **Score** | 0 |
| **Main type of activity in area** | Rare disturbance activity (e.g. little used store room) | | |
| **Description of activity** | Simplex Electrical Units | | |
| **Secondary activities for area** | | | |
| **Description of activities** | | | |
| **Assement Factor** | **Likelihood of disturbance** | **Score** | 1 |
| **Location** | Rooms up to 100 m2 | | |
| **Accessibility** | Usually inaccessible or unlikely to be disturbed | | |
| **Extent/amount** | Small amounts or items (eg strings, gaskets) | | |
| **Assement Factor** | **Human exposure potential** | **Score** | 0 |
| **Number of occupants** | None | | |
| **Frequence of use of area** | Infrequent | | |
| **Average time area is in use** | <= 1 hour | | |
| **Assement Factor** | **Maintenance Activity** | **Score** | 0 |
| **Type of maintenance activity** | Minor disturbance (eg possibility of contact when gaining access) | | |
| **Frequency of maintenance activity** | ACM unlikely to be disturbed for maintenance | | |

### Automatic Risk Assessment

| | |
|---|---|
| **Material Assessment Score** | 4 |
| **Material Assessment Rating** | Very Low |
| **Priority Assessment Score** | 1 |
| **Risk Score** | 5 |
| **Risk Rating** | Very Low |
| **Risk Colour** | LightBlue |
| **Recommendation** | Manage in situ. Remove only if serious damage or deterioration. Label material. Make periodic check inspections. Asbestos treatment works is not necessary. Implement a management plan that allows for the regular assessment to confirm the materials continued very low health risk potential category. An ACM in this category is indicative of a material requiring little attention, as it is not at risk from disturbance and will already be encapsulated and sealed, or will be an asbestos reinforced composite material, which have little opportunity to release fibres unless the matrix is removed or subject to high levels of abrasion. |

### Surveyor's Risk Assessment

| | | | |
|---|---|---|---|
| **Re-inspection Frequency (in months)** | **12** | **Re-inspection Frequency description** | Inspect Yearly |
| **Next Inspection Date** | **25-Aug-2023** | **Next Inspection Date Override** | |
| **Overridden Reinspection Frequency** | | **Overridden Reinspection Frequency Description** | |

**Risk Assessment**

**Comments** Small Amounts - Fuse Pads - Inspect at Intervals - Asbestos Presumed.

No change to score on 2022 re-inspection - Continue to monitor.

**Surveyor's Recommended Action** Manage in Situ

**Exact Quantity of removal work required**

## Images




**213286: Woven material within live electrics multiple (P006)**

## MANCHESTER OXFORD RD Rail S
### Boiler House

| | | | |
|---|---|---|---|
| **Survey Reference** | 1006534 | | |
| **Primary Contractor Name** | SOCOTEC Asbestos Limited | | |
| **ACM Location** | 213286: Roof Felt (EN2182) | | |
| **ACM Type** | Chrysotile | | |
| **Asbestos Known or Presumed?** | Asbestos Known | | |
| **Extent of Damage or Deterioration** | Low damage, scratches or surface marks, broken edges of boards, tiles, etc | | |
| **Surface Treatment** | Composite materials containing asbestos: reinforced plastics, resins, vinyl tiles | | |
| **Product Type** | Asbestos-reinforced composites (plastics, resins, mastics, roofing felts, vinyl floor tiles, semi-rigid paints or decorative finishes) | | |
| **Secondary Product Type** | | | |
| **Quantity of Asbestos Present** | . | | |
| **Referred to Sample** | | | |
| **Assement Factor** | **Normal Occupant Activity** | **Score** | 0 |
| **Main type of activity in area** | Rare disturbance activity (e.g. little used store room) | | |
| **Description of activity** | Roof Felt | | |
| **Secondary activities for area** | | | |
| **Description of activities** | | | |
| **Assement Factor** | **Likelihood of disturbance** | **Score** | 1 |
| **Location** | Outdoors | | |
| **Accessibility** | Usually inaccessible or unlikely to be disturbed | | |
| **Extent/amount** | <=10 m2 or <=10 m pipe run. | | |
| **Assement Factor** | **Human exposure potential** | **Score** | 0 |
| **Number of occupants** | None | | |
| **Frequence of use of area** | Infrequent | | |
| **Average time area is in use** | <= 1 hour | | |
| **Assement Factor** | **Maintenance Activity** | **Score** | 0 |
| **Type of maintenance activity** | Minor disturbance (eg possibility of contact when gaining access) | | |
| **Frequency of maintenance activity** | ACM unlikely to be disturbed for maintenance | | |

### Automatic Risk Assessment

| | |
|---|---|
| **Material Assessment Score** | 3 |
| **Material Assessment Rating** | Very Low |
| **Priority Assessment Score** | 1 |
| **Risk Score** | 4 |
| **Risk Rating** | Very Low |
| **Risk Colour** | LightBlue |
| **Recommendation** | Manage in situ. Remove only if serious damage or deterioration. Label material. Make periodic check inspections. Asbestos treatment works is not necessary. Implement a management plan that allows for the regular assessment to confirm the materials continued very low health risk potential category. An ACM in this category is indicative of a material requiring little attention, as it is not at risk from disturbance and will already be encapsulated and sealed, or will be an asbestos reinforced composite material, which have little opportunity to release fibres unless the matrix is removed or subject to high levels of abrasion. |

### Surveyor's Risk Assessment

| | | | |
|---|---|---|---|
| **Re-inspection Frequency (in months)** | **36** | **Re-inspection Frequency description** | Inspect Triennially |
| **Next Inspection Date** | **25-Aug-2025** | **Next Inspection Date Override** | |
| **Overridden Reinspection Frequency** | | **Overridden Reinspection Frequency Description** | |

**Risk Assessment**

**Comments** 1 Meter Squared - Roof Felt - Repair & Seal - Asbestos Identified - (EN2182).

No change to scores on 2022 re-inspection - Continue to monitor

**Surveyor's Recommended Action** Manage in Situ

**Exact Quantity of removal work required**

## Images



**213286: Roof Felt (EN2182)**

# MANCHESTER OXFORD RD Rail S
## Platform 5 Building Roof

| | | | |
|---|---|---|---|
| **Survey Reference** | 1006532 | | |
| **Primary Contractor Name** | SOCOTEC Asbestos Limited | | |
| **ACM Location** | 213286: Roof Felt (EN2192) | | |
| **ACM Type** | Chrysotile | | |
| **Asbestos Known or Presumed?** | Asbestos Known | | |
| **Extent of Damage or Deterioration** | Low damage, scratches or surface marks, broken edges of boards, tiles, etc | | |
| **Surface Treatment** | Composite materials containing asbestos: reinforced plastics, resins, vinyl tiles | | |
| **Product Type** | Asbestos-reinforced composites (plastics, resins, mastics, roofing felts, vinyl floor tiles, semi-rigid paints or decorative finishes) | | |
| **Secondary Product Type** | | | |
| **Quantity of Asbestos Present** | . | | |
| **Referred to Sample** | | | |
| **Assement Factor** | **Normal Occupant Activity** | **Score** | 0 |
| **Main type of activity in area** | Rare disturbance activity (e.g. little used store room) | | |
| **Description of activity** | Roof Felt | | |
| **Secondary activities for area** | | | |
| **Description of activities** | | | |
| **Assement Factor** | **Likelihood of disturbance** | **Score** | 1 |
| **Location** | Outdoors | | |
| **Accessibility** | Usually inaccessible or unlikely to be disturbed | | |
| **Extent/amount** | >10 m2 to <=50 m2 or >10 m to <=50 m pipe run | | |
| **Assement Factor** | **Human exposure potential** | **Score** | 0 |
| **Number of occupants** | None | | |
| **Frequence of use of area** | Infrequent | | |
| **Average time area is in use** | <= 1 hour | | |
| **Assement Factor** | **Maintenance Activity** | **Score** | 0 |
| **Type of maintenance activity** | Minor disturbance (eg possibility of contact when gaining access) | | |
| **Frequency of maintenance activity** | ACM unlikely to be disturbed for maintenance | | |

### Automatic Risk Assessment

| | |
|---|---|
| **Material Assessment Score** | 3 |
| **Material Assessment Rating** | Very Low |
| **Priority Assessment Score** | 1 |
| **Risk Score** | 4 |
| **Risk Rating** | Very Low |
| **Risk Colour** | LightBlue |
| **Recommendation** | Manage in situ. Remove only if serious damage or deterioration. Label material. Make periodic check inspections. Asbestos treatment works is not necessary. Implement a management plan that allows for the regular assessment to confirm the materials continued very low health risk potential category. An ACM in this category is indicative of a material requiring little attention, as it is not at risk from disturbance and will already be encapsulated and sealed, or will be an asbestos reinforced composite material, which have little opportunity to release fibres unless the matrix is removed or subject to high levels of abrasion. |

### Surveyor's Risk Assessment

| | | | |
|---|---|---|---|
| **Re-inspection Frequency (in months)** | **36** | **Re-inspection Frequency description** | Inspect Triennially |
| **Next Inspection Date** | **25-Aug-2025** | **Next Inspection Date Override** | |
| **Overridden Reinspection Frequency** | | **Overridden Reinspection Frequency Description** | |

**Risk Assessment**

**Comments** 500 Meters Squared - Roof Felt - Inspect at Intervals - Asbestos Identified - (EN2192).

No change to score on 2022 re-inspection - Continue to monitor.

**Surveyor's Recommended Action** Manage in Situ

**Exact Quantity of removal work required**

## Images




**213286: Roof Felt (EN2192)**

# MANCHESTER OXFORD RD Rail S

## Ticket Office Building Roof

| | | | |
|---|---|---|---|
| **Survey Reference** | 1006533 | | |
| **Primary Contractor Name** | SOCOTEC Asbestos Limited | | |
| **ACM Location** | 213286: Roof Felt (EN2191) | | |
| **ACM Type** | Chrysotile | | |
| **Asbestos Known or Presumed?** | Asbestos Known | | |
| **Extent of Damage or Deterioration** | Low damage, scratches or surface marks, broken edges of boards, tiles, etc | | |
| **Surface Treatment** | Composite materials containing asbestos: reinforced plastics, resins, vinyl tiles | | |
| **Product Type** | Asbestos-reinforced composites (plastics, resins, mastics, roofing felts, vinyl floor tiles, semi-rigid paints or decorative finishes) | | |
| **Secondary Product Type** | | | |
| **Quantity of Asbestos Present** | . | | |
| **Referred to Sample** | | | |
| **Assement Factor** | **Normal Occupant Activity** | **Score** | 0 |
| **Main type of activity in area** | Rare disturbance activity (e.g. little used store room) | | |
| **Description of activity** | Roof Felt | | |
| **Secondary activities for area** | | | |
| **Description of activities** | | | |
| **Assement Factor** | **Likelihood of disturbance** | **Score** | 2 |
| **Location** | Rooms up to 100 m2 | | |
| **Accessibility** | Usually inaccessible or unlikely to be disturbed | | |
| **Extent/amount** | >10 m2 to <=50 m2 or >10 m to <=50 m pipe run | | |
| **Assement Factor** | **Human exposure potential** | **Score** | 0 |
| **Number of occupants** | None | | |
| **Frequence of use of area** | Infrequent | | |
| **Average time area is in use** | <= 1 hour | | |
| **Assement Factor** | **Maintenance Activity** | **Score** | 0 |
| **Type of maintenance activity** | Minor disturbance (eg possibility of contact when gaining access) | | |
| **Frequency of maintenance activity** | ACM unlikely to be disturbed for maintenance | | |

### Automatic Risk Assessment

| | |
|---|---|
| **Material Assessment Score** | 3 |
| **Material Assessment Rating** | Very Low |
| **Priority Assessment Score** | 2 |
| **Risk Score** | 5 |
| **Risk Rating** | Very Low |
| **Risk Colour** | LightBlue |
| **Recommendation** | Manage in situ. Remove only if serious damage or deterioration. Label material. Make periodic check inspections. Asbestos treatment works is not necessary. Implement a management plan that allows for the regular assessment to confirm the materials continued very low health risk potential category. An ACM in this category is indicative of a material requiring little attention, as it is not at risk from disturbance and will already be encapsulated and sealed, or will be an asbestos reinforced composite material, which have little opportunity to release fibres unless the matrix is removed or subject to high levels of abrasion. |

### Surveyor's Risk Assessment

| | | | |
|---|---|---|---|
| **Re-inspection Frequency (in months)** | **36** | **Re-inspection Frequency description** | Inspect Triennially |
| **Next Inspection Date** | **25-Aug-2025** | **Next Inspection Date Override** | |
| **Overridden Reinspection Frequency** | | **Overridden Reinspection Frequency Description** | |

**Risk Assessment**

| | |
|---|---|
| **Comments** | 5 Meters Squared - Roof Felt - Remove - Asbestos Identified - (EN2191).<br><br>No change to scores on 2022 re-inspection - Continue to monitor. |
| **Surveyor's Recommended Action** | Remove |
| **Exact Quantity of removal work required** | |

## Images




**213286: Roof Felt (EN2191)**

## 8.4 Appendix D – Refurbishment & Demolition Survey Report (R&D)

Not Applicable

## 8.5 Appendix E – Listed Building

# Manchester Oxford Road Station (including platform structures)

## Official list entry

Heritage Category: **Listed Building**

Grade: **II**

List Entry Number: **1255053**

Date first listed: **24-Nov-1995**

Date of most recent amendment: **26-Feb-2013**

List Entry Name: **Manchester Oxford Road Station (including platform structures)**

Statutory Address 1: **Manchester Oxford Road Station (including platform structures), Oxford Road**

This List entry helps identify the building designated at this address for its special architectural or historic interest.

Unless the List entry states otherwise, it includes both the structure itself and any object or structure fixed to it (whether inside or outside) as well as any object or structure within the curtilage of the building.

For these purposes, to be included within the curtilage of the building, the object or structure must have formed part of the land since before 1st July 1948.

Understanding list entries *(https://historicengland.org.uk/listing/the-list/understanding-list-entries/)*

Corrections and minor amendments *(https://historicengland.org.uk/listing/the-list/minor-amendments/)*

# Location

Statutory Address: **Manchester Oxford Road Station (including platform structures), Oxford Road**

The building or site itself may lie within the boundary of more than one authority.

District: **Manchester (Metropolitan Authority)**

Parish: **Non Civil Parish**

National Grid Reference: **SJ8402097475**

# Summary

Railway station building and platform structures, 1958-60, by Max Clendinning of British Railways' Midland Region with Hugh Tottenham of the Timber Development Association. Laminated-timber structure of three conoid shells, with hardwood strip ceilings to the shell roofs and canopies. Single-storey.

# Reasons for Designation

Manchester Oxford Road Station, including platform structures, is designated at Grade II for the following principal reasons: * Architectural interest: it is one of the best post-war railway stations in the country, with a striking and highly elegant design constructed of laminated timber; * Design interest: the station's unique design employs a high level of sophistication and innovation through its use of conoid shells supported on a cruck-like frame, which not only create a dramatic aesthetic form, but endow the building with a light and spacious interior; * Architect: it was designed by Max Clendinning of British Railways' Midland Region and Hugh Tottenham of the Timber Development Association, and represents Tottenham's finest work; * Technological interest: it is the most dramatic example of the use of timber-shell roofs in England; utilising techniques pioneered and developed by the Timber Development Association; * Rarity: it is the only large station in Britain to have been re-built in prefabricated materials.

# History

The creation of British Railways in 1948 amalgamated four companies: the Great Western Railway (GWR), London, Midland & Scottish Railway (LMS), London & North Eastern Railway (LNER) and Southern Railway (SR). Each company had its own architects' department, and this did not change after nationalisation. Leslie Martin established the LMS as

the 'cradle of prefabrication' when he designed three stations in 1945, which was followed by his successors adopting a lightweight steel system for a series of small stations north of Crewe when the lines between London, Manchester and Liverpool began to be electrified in 1957.

Manchester Oxford Road Station, which was constructed in 1958-60 on top of the Manchester South Junction & Altrincham Railway viaduct and replaced an earlier station of 1874, was the only large-scale station in England rebuilt using prefabricated methods. The station building and platform structures were designed by Max Clendinning of British Railways' Midland Region in conjunction with the engineer, Hugh Tottenham of the Timber Development Association who had been researching timber-shell roofs since 1956; the building's lightweight roof structure partly being designed to reduce loads on the viaduct beneath. Following his work with British Railways' Midland Region, Clendinning went on to become a successful interior and furniture designer.

Since its construction the station has been subject to improvements works, including the installation of new passenger shelters and disabled toilets, the erection of a new customer information point, and re-surfacing of the concourse area and footbridge steps, predominantly in the early-C21.

## Details

Railway station building and platform structures, 1958-60, by Max Clendinning of British Railways' Midland Region with Hugh Tottenham of the Timber Development Association. Laminated-timber structure of three conoid shells with hardwood strip ceilings to the shell roofs and canopies. Single-storey.

DESCRIPTION: the main station building is covered by three shell roofs of diminishing size (the largest being at the eastern front and the smallest at the western rear) that range between 13m and 29m in span and are supported on a cruck-like frame. The front (east) elevation is reminiscent of the styling of Sydney Opera House and has a recessed, glazed upper section, underneath which lies the main entrance and eastern end of the booking office. The station's booking office, buffet, toilets and staff facilities are constructed of timber and concrete, with the two former facilities forming a lozenge-shaped island along the southern side of the main building.

The main building sits between two railway tracks with tall, curved canopies that extend out over the platforms and are supported by similarly styled crucks to the main building. Similar canopies incorporating a central spine with raised, arched glazing cover the station's two central island platforms, which, along with a far platform, are accessed via an enclosed footbridge, which is not of special interest. All the canopies have lozenge shaped skylights that echo

the lozenge shape of the booking office and buffet in the main building, and deep fascias to their front edge. The main concourse incorporates an original semi-circular, concrete and timber bench and two curved, back-to-back timber benches exist to the central island platforms. Two sympathetically styled waiting shelters of c2011 located on the central island platforms and far platform are not of special interest.

## Legacy

The contents of this record have been generated from a legacy data system.

Legacy System number: **458646**

Legacy System: **LBS**

## Sources

**Books and journals**

Hartwell, C, Pevsner Architectural Guides: Manchester, (2001)

Harwood, E, England A Guide to Post War Listed Buildings, (2003)

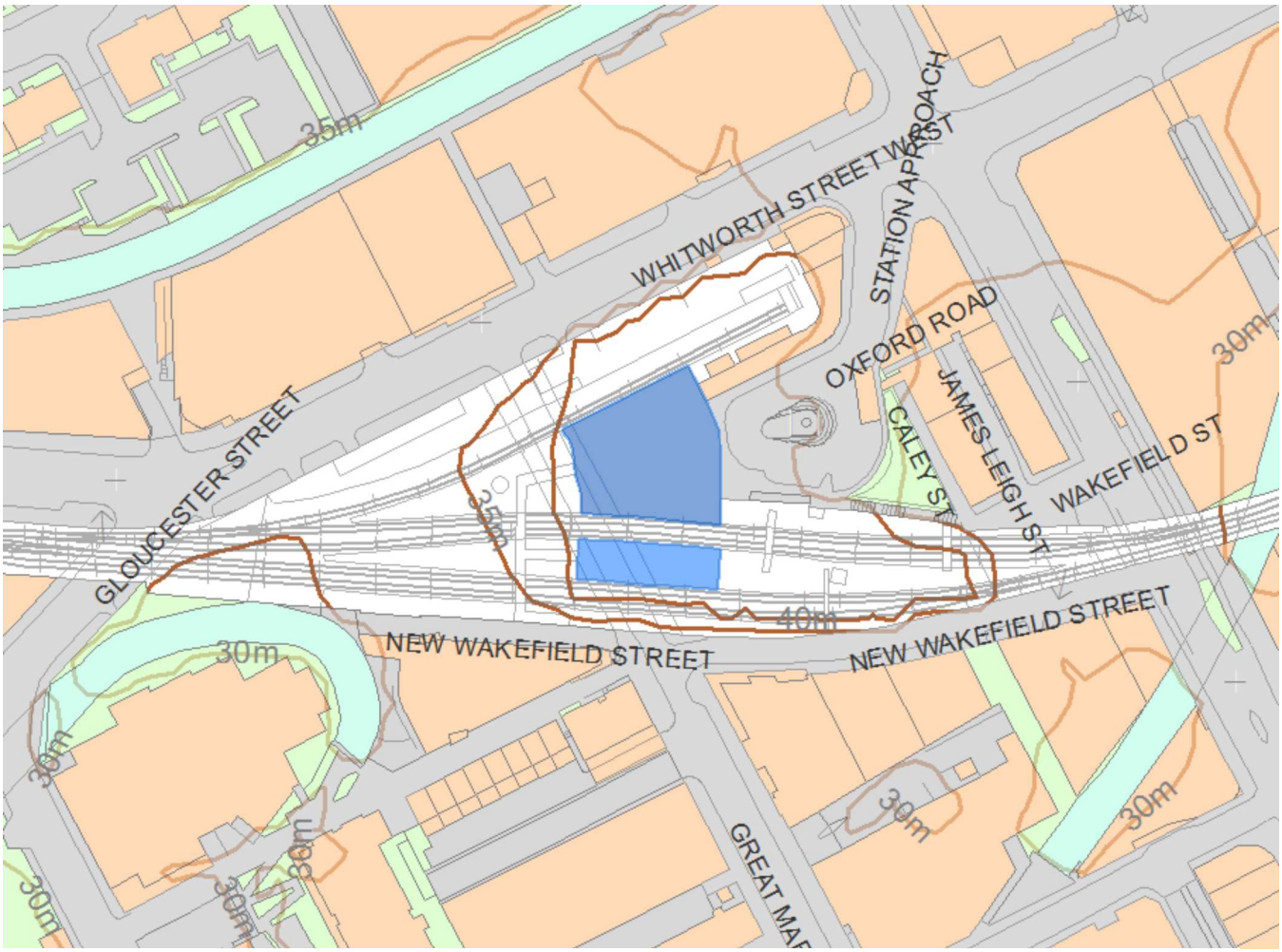
Parkinson-Bailey, J J, Manchester: An Architectural History, (2000)

**Websites**

A Guide to Civil Engineering in Manchester. Manchester Oxford Road Railway Station, accessed from **http://maceserv.mace.man.ac.uk/apache2-default/trail/xml/Features/oxford%20road%20station.html** ***(http://maceserv.mace.man.ac.uk/apache2-default/trail/xml/Features/oxford%20road%20station.html)***

## Legal

This building is listed under the Planning (Listed Buildings and Conservation Areas) Act 1990 as amended for its special architectural or historic interest.




## Map

This map is for quick reference purposes only and may not be to scale. This copy shows the entry on 31-Aug-2023 at 16:02:42.

© Crown Copyright and database right 2023. All rights reserved. Ordnance Survey Licence number 100024900.© British Crown and SeaZone Solutions Limited 2023. All rights reserved. Licence number 102006.006.

Use of this data is subject to Terms and Conditions *(https://historicengland.org.uk/terms/website-terms-conditions/)*.

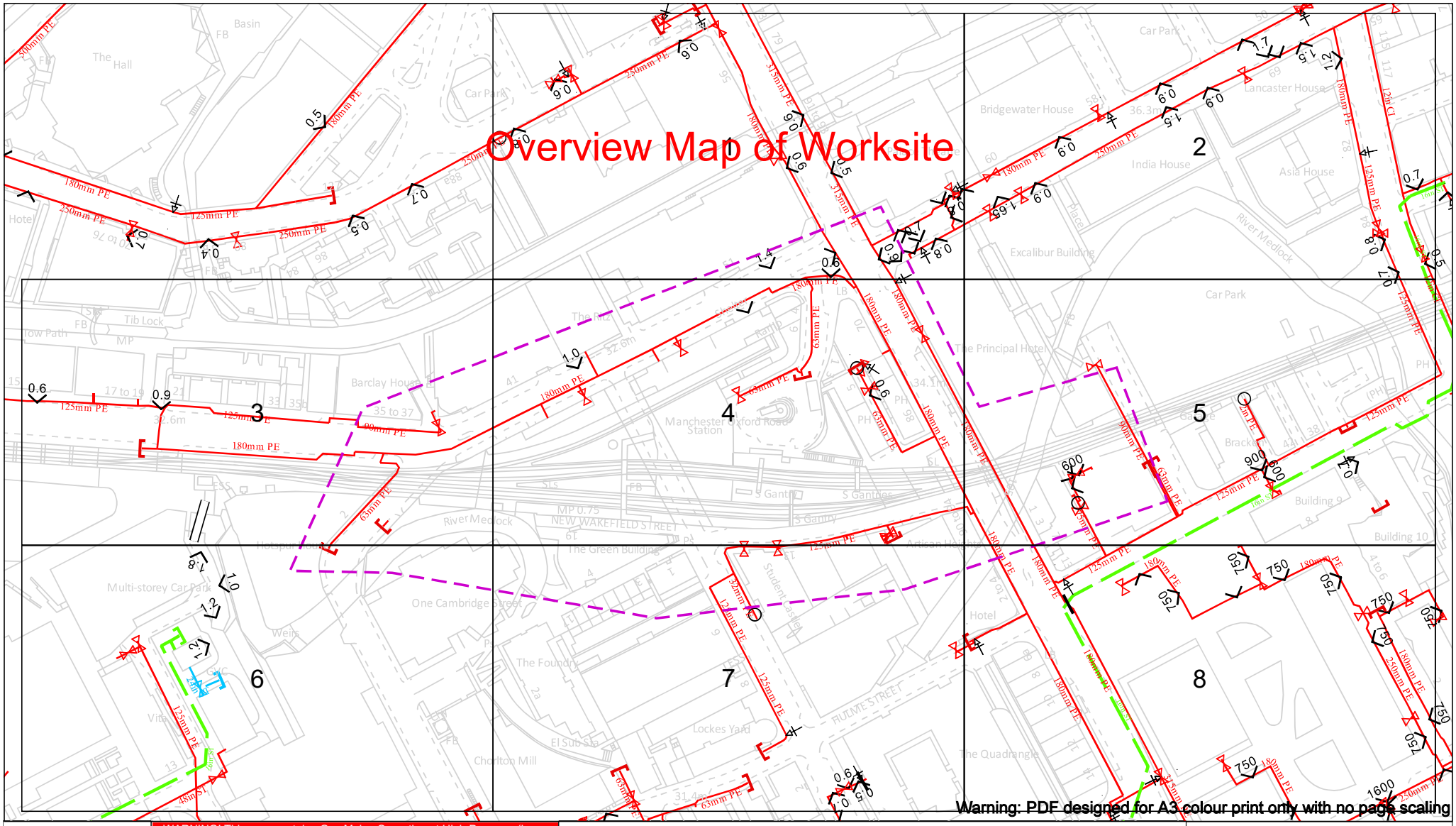
**End of official list entry**



Back to top

## 8.6 Appendix F – Utilities Layout Drawings

# Overview Map of Worksite




Warning: PDF designed for A3 colour print only with no page scaling

WARNING! This area contains Gas Mains Operating at High Pressure (in excess of 7 bar) and/or Intermediate Pressure (between 2 and 7 bar). Before excavating in the area contact the Plant Protection team on 0800 688 588 or plantprotection@cadentgas.com

**In case of an emergency call 0800 111 999**

Date Requested: 04/12/2022
Job Reference: 27818370
Site Location: 384042 397490
Requested by:
Mr Rob Fowler
Your Scheme/Reference:
NW19463

Scale: 1:1537 (When plotted at A3)

This plan shows these pipes owned by Cadent Gas Limited in its role as a Licensed Gas Transporter (GT). Gas pipes owned by other GT's or otherwise privately owned may be present in this area. Information with regards to such pipes should be obtained from the relevant owners. The information shown on this plan is given without warranty, the accuracy thereof cannot be guaranteed. Service pipes, valves, syphons, stub connections etc. are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by Cadent Gas Limited or their agents, servants or contractors for any errors or omission. Safe digging practices, in accordance with HS(G)47, must be used to verify and establish the actual position of mains, pipes, services and other apparatus on site before any mechanical plant is used. It is your responsibility to ensure that this information is provided to all persons (either direct labour or contractors) working for you on or near gas apparatus. The information included on this plan should not be referred to beyond a period of 28 days from the date of issue.

Dig Sites

Area:

Line:

- LP Mains
- MP Mains
- IP Mains
- LHP Mains
- Valve
- Depth of cover
- Syphon
- Diameter Change
- Material Change
- Out of Standard Service

Cadent
Your Gas Network

Crown Copyright © - This plan is reproduced from or based on the OS map by Cadent Gas Limited, with the sanction of the controller of HM Stationary Office. Crown Copyright Reserved. Ordnance Survey Licence number 100024886

# Network Rail - Drainage




## Legend

**Company Ownership**

- Freehold Ownership
- Leasehold Ownership
- Prohibitive Interest
- Bridge (Rail over Rail)
- Bridge (Rail over River)
- Bridge (Rail over Road)
- Bridge (Road over Rail)
- Level Crossing
- Tunnel
- Order Polygon

- DB Asset Line
- Chamber (DD)
- Outfall (DK)
- Inflow (DL)
- Point (DM)
- Soakaway (DN)
- Pond (DY)
- Structure (DZ)
- DC Asset Line
- Channel (ELR, Mileage)
- Channel (Coordinates)
- Covered Channel (ELR, Mileage)
- Covered Channel (Coordinates)
- Culvert (ELR, Mileage)
- Culvert (Coordinates)
- Granular Drain (ELR, Mileage)
- Granular Drain (Coordinates)
- Pipe (ELR and Mileage)
- Pipe (Coordinates)
- Syphon (ELR, Mileage)
- Syphon (Coordinates)

**Order Ref: 153406**
**Plot Scale: 1:1250**
**Page Index: 1**
**Centre X, Y: 384014, 397542**
**Plot Date: 04/12/22**

**Crown copyright and database rights 2022**
**Ordnance Survey 0100040692**




bitmap_layout select_raster

# LEGEND

EXISTING PLANT

EXISTING PLANT

bitmap_layout select_raster

Head Office
CityFibre Holdings Ltd
15 Bedford Street,
London,
WC2E 9HE

Tel: 0845 293 0774
Web: www.cityfibre.com

Asset Office
CityFibre Holdings Ltd,
Rutherford House,
Birchwood,
Warrington,
WA3 6ZH

Email: asset.team@cityfibre.com

Disclaimer:

Information shown on this plan is for general guidance only.
No warranty is made as to its accuracy.
This plan must not be solely relied upon in the event of excavation or other works being carried out in the vicinity of Cityfibre plant.
No liability of any kind is accepted by Cityfibre, its agents or servants for any error, omission, discrepancy or deviation. This information is valid for the date printed.

Project

Plant Enquiry

Drawing

Existing Plant

Drawn by:

smallworld

Date: 04/12/2022

Drawing No.

CFH_EP_000001

Revision

001

Scale: 1:2500

A4

0m 20m 40m 60m 80m 100m

N

# Maps by email Plant Information Reply




## IMPORTANT WARNING

Information regarding the location of BT apparatus is given for your assistance and is intended for general guidance only. No guarantee is given of its accuracy. It should not be relied upon in the event of excavations or other works being made near to BT apparatus which may exist at various depths and may deviate from the marked route.

openreach

## CLICK BEFORE YOU DIG

FOR PROFESSIONAL FREE ON SITE ASSISTANCE PRIOR TO COMMENCEMENT OF EXCAVATION WORKS INCLUDING LOCATE AND MARKING SERVICE

email cbyd@openreach.co.uk

ADVANCE NOTICE REQUIRED
(Office hours: Monday - Friday 08.00 to 17.00)
www.openreach.co.uk/cbyd

**Accidents happen**

If you do damage any Openreach equipment please let us know by calling 0800 023 2023 (opt 1 + opt 1) and we can get it fixed ASAP

Reproduced from the Ordnance Survey map by BT
by permission of Ordnance Survey on behalf of the
Controller of Her Majesty's Stationary Office
(C) Crown Copyright British Telecommunications plc 100028040

## KEY TO BT SYMBOLS

| | Planned | Live |
|---|---|---|
| PCP | | |
| Pole | | |
| Box | | |
| Manhole | | |
| Cabinet | | |

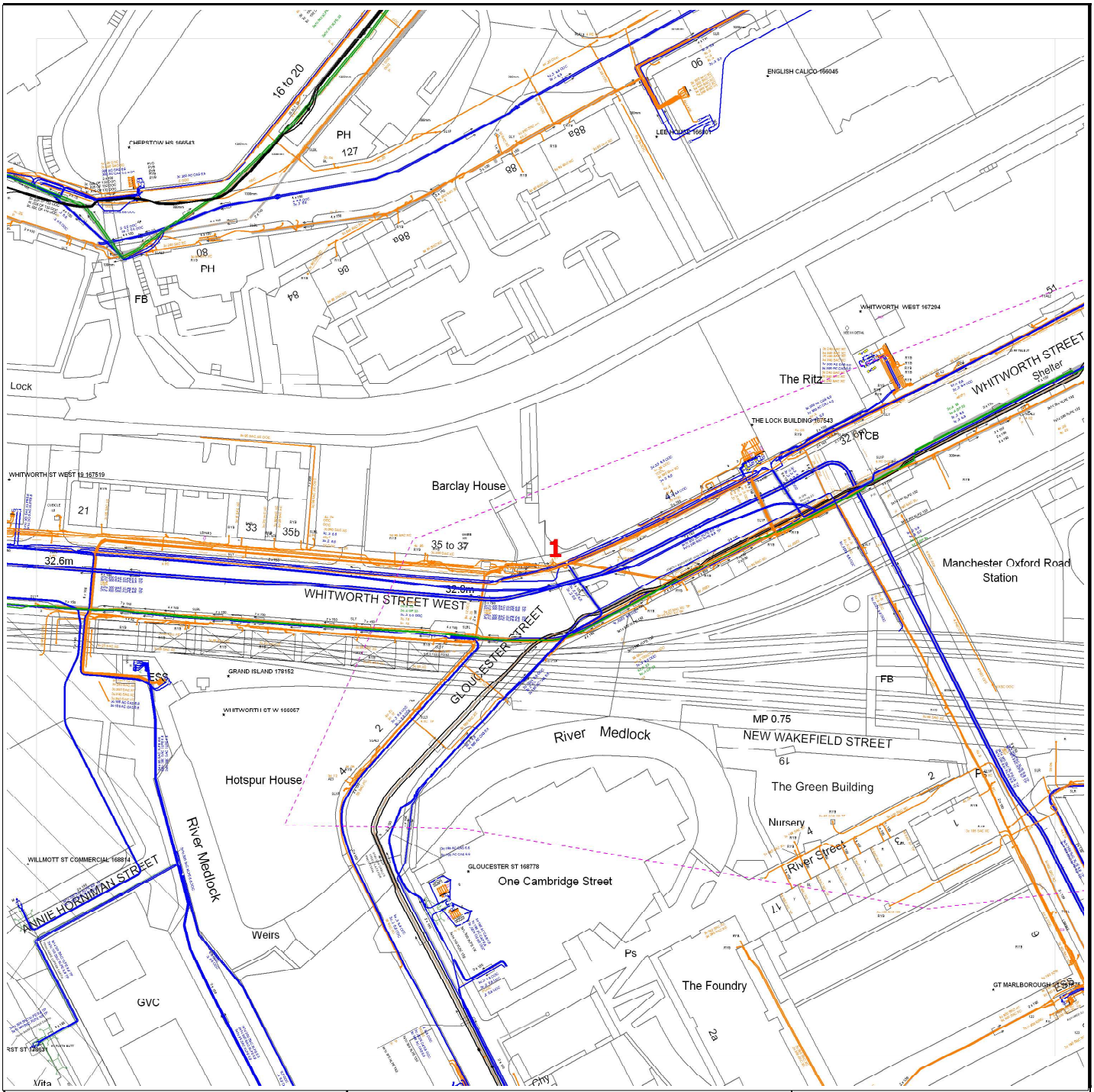
| | | | |
|---|---|---|---|
| Change Of State | + | Hatchings | |
| Split Coupling | | Built | |
| Duct Tee | | Planned | |
| Building | | Inferred | |
| Kiosk | K | Duct | |

Other proposed plant is shown using dashed lines.
BT Symbols not listed above may be disregarded.
Existing BT Plant may not be recorded.
Information valid at time of preparation. Maps are only valid for 90 days after the date of publication.

| | Pending Add | In Place | Pending Remove | Not In Use |
|---|---|---|---|---|
| Power Cable | | | | |
| Power Duct | | | | N/A |

BT Ref : DCO11348F
Map Reference : (centre) SJ8404297489
Easting/Northing : (centre) 384042,397489
Issued : 04/12/2022 11:35:02

WARNING: IF PLANNED WORKS FALL INSIDE HATCHED AREA IT IS ESSENTIAL BEFORE PROCEEDING THAT YOU CONTACT THE NATIONAL NOTICE HANDLING CENTRE. PLEASE SEND E-MAIL TO: nnhc@openreach.co.uk




Requested by: Rob Fowler
Company: Network Rail
Date Requested: 04/12/2022
Job Reference: 27818370
Your Scheme/Reference: NW19463

Dig Sites:

Area Line

| Operating Voltage | Colour Code | Line Colour |
|---|---|---|
| 132kV | Black | |
| 33kV | Green | |
| 22kV-25kV | Yellow | |
| 11kV | Red | |
| 6kV-6.6kV | Blue | |
| 1kV-6kV | Violet | |
| LV | Orange | |
| Unknown Voltage | Brown | |

electricity north west


Data Management
Electricity North West
Linley House
Dickinson Street
Manchester, M1 4LF
Phone: 0800 195 4141
Email: planrequest@enwl.co.uk


Scales on A4 paper:
1:1250 Area dig site
1:250 Line dig site

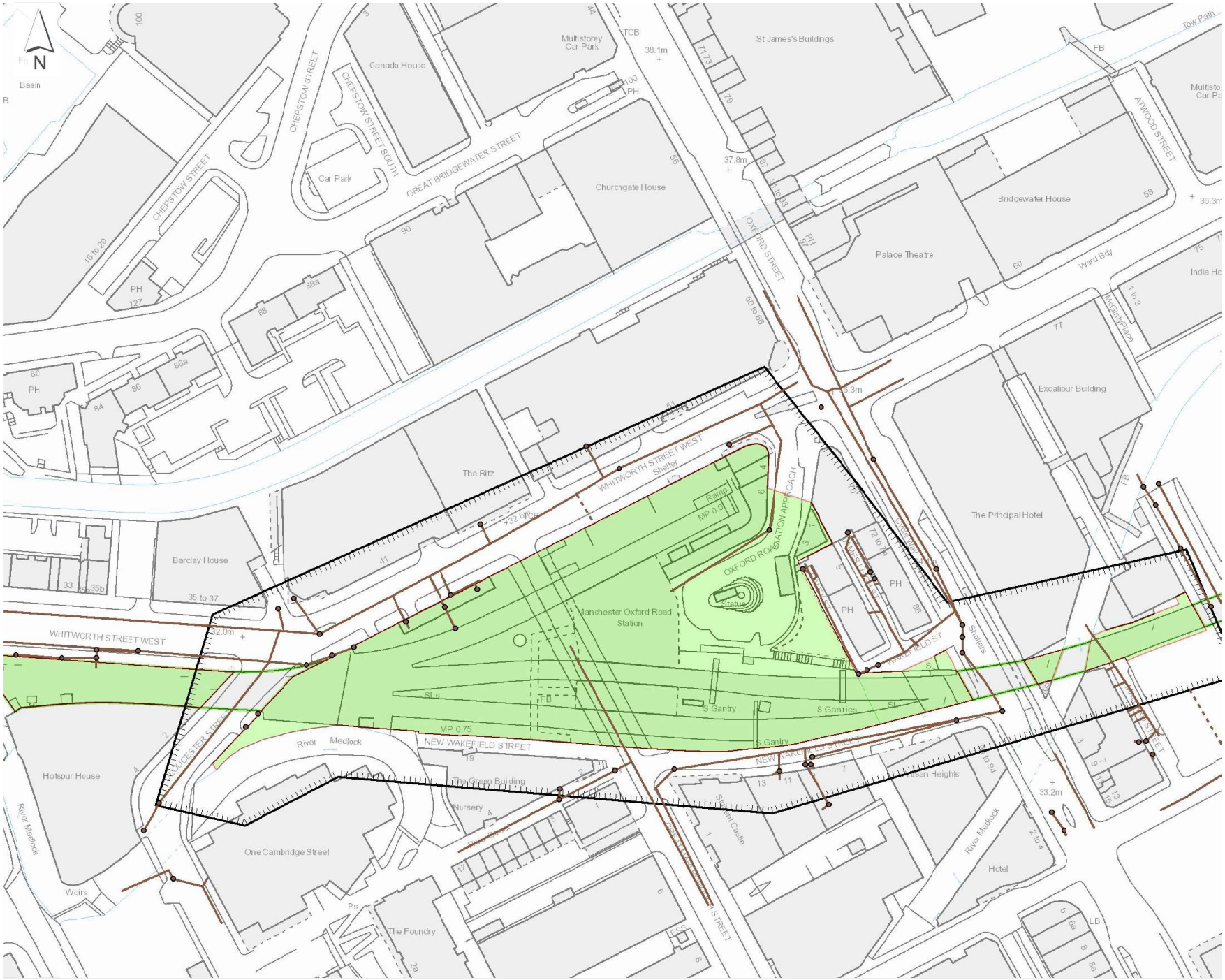

Unless otherwise indicated the depth of Electricity North West Limited cables are in accordance with NJUG (450mm for Low Voltage & 600mm for 11kV cables) 33kV and 132kV cables are laid at depths as marked. The depth and positions of Electricity North West Limited equipment was accurate as shown when the equipment was installed. However third parties may have altered the level & other reference data. Therefore Electricity North West Limited accept no responsibility for the position of Electricity North West Limited equipment being different from shown. No person, body or company, shall be relieved from liability for damage caused to Electricity North West Limited equipment by reason of being located differently to the indications on this drawing or from any regulatory loss of income or incentive, or expense, which may be suffered by Electricity North West Limited and which is caused or contributed to by any loss of supply as a result of any damage caused to Electricity North West Limited's equipment. Service cables are not necessarily shown but must be assumed to exist to all premises, streetlights and signs. There may be other Electricity North West Limited apparatus in the vicinity which is not indicated on the cable records. Other apparatus may also be present which is owned by a third party other than Electricity North West Limited.

Reproduced from or based upon Ordnance Survey's map with the permission of Her Majesty's Stationary Office. Crown Copyright Reserved. LICENCE No. 100017892. Unauthorised reproduction may lead to Prosecution or Civil Proceedings.

Reference should be made to HSE Guidance, HS(G)47 "Avoiding Danger from Underground Services" and GS6 "Avoidance of Danger from Overhead Power Lines".

Electricity North West Limited 304 Bridgewater Place, Birchwood Park, Warrington WA3 6XG. Registered in England and Wales. Registered No 02366949

# Third Party - United Utilities (Sewers)




## Legend

**Company Ownership**

- Freehold Ownership
- Leasehold Ownership
- Prohibitive Interest
- Bridge (Rail over Rail)
- Bridge (Rail over River)
- Bridge (Rail over Road)
- Bridge (Road over Rail)
- Level Crossing
- Tunnel
- Order Polygon

- United Utilities Abandoned Sewer
- United Utilities Manhole
- United Utilities Sewer

**Order Ref: 153406**
**Plot Scale: 1:1250**
**Page Index: 1**
**Centre X, Y: 384014, 397542**
**Plot Date: 04/12/22**

NetworkRail

Crown copyright and database rights 2022
Ordnance Survey 0100040692

# Third Party - Vodafone




## Legend

**Company Ownership**

- Freehold Ownership
- Leasehold Ownership
- Prohibitive Interest
- Bridge (Rail over Rail)
- Bridge (Rail over River)
- Bridge (Rail over Road)
- Bridge (Road over Rail)
- Level Crossing
- Tunnel
- Order Polygon

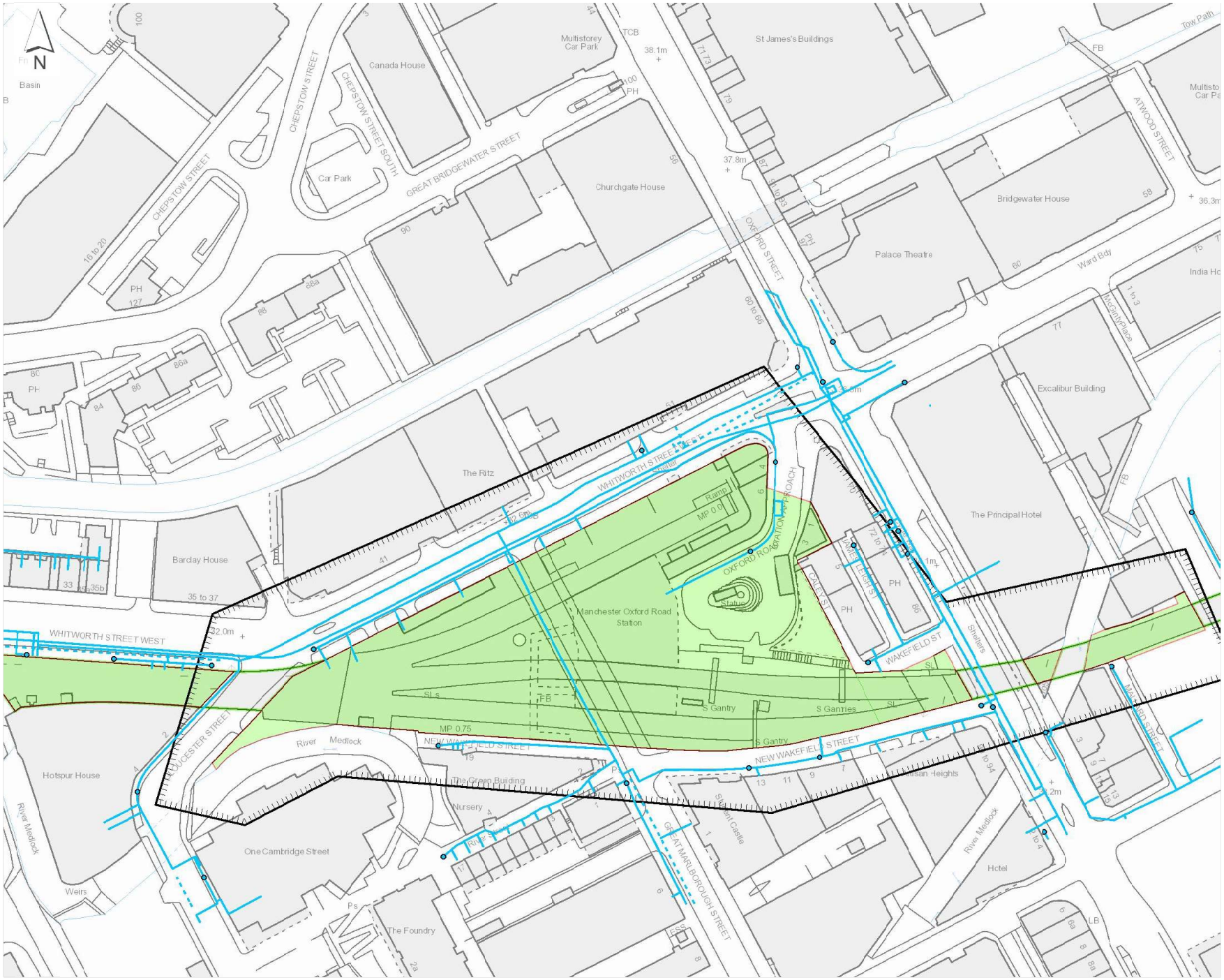
- Vodafone lines
- Vodafone points

**Order Ref: 153406**
**Plot Scale: 1:1250**
**Page Index: 1**
**Centre X, Y: 384014, 397542**
**Plot Date: 04/12/22**

NetworkRail

**Crown copyright and database rights 2022**
**Ordnance Survey 0100040692**

# Third Party - United Utilities (Water)




## Legend

**Company Ownership**

- Freehold Ownership
- Leasehold Ownership
- Prohibitive Interest
- Bridge (Rail over Rail)
- Bridge (Rail over River)
- Bridge (Rail over Road)
- Bridge (Road over Rail)
- Level Crossing
- Tunnel
- Order Polygon

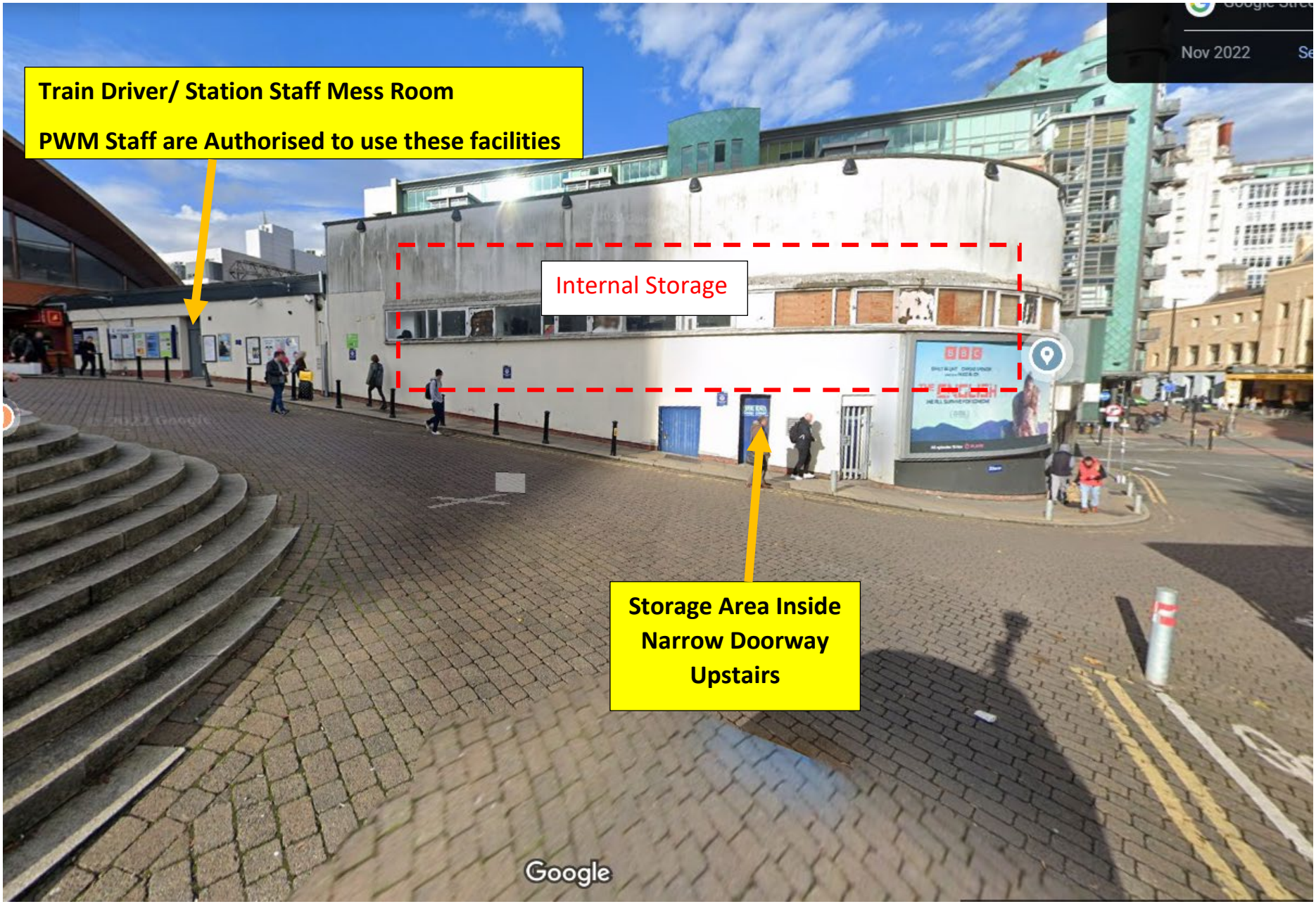
- United Utilities Hydrant
- United Utilities Watermain
- United Utilities Abandoned Watermain

**Order Ref: 153406**
**Plot Scale: 1:1250**
**Page Index: 1**
**Centre X, Y: 384014, 397542**
**Plot Date: 04/12/22**

NetworkRail

**Crown copyright and database rights 2022**
**Ordnance Survey 0100040692**

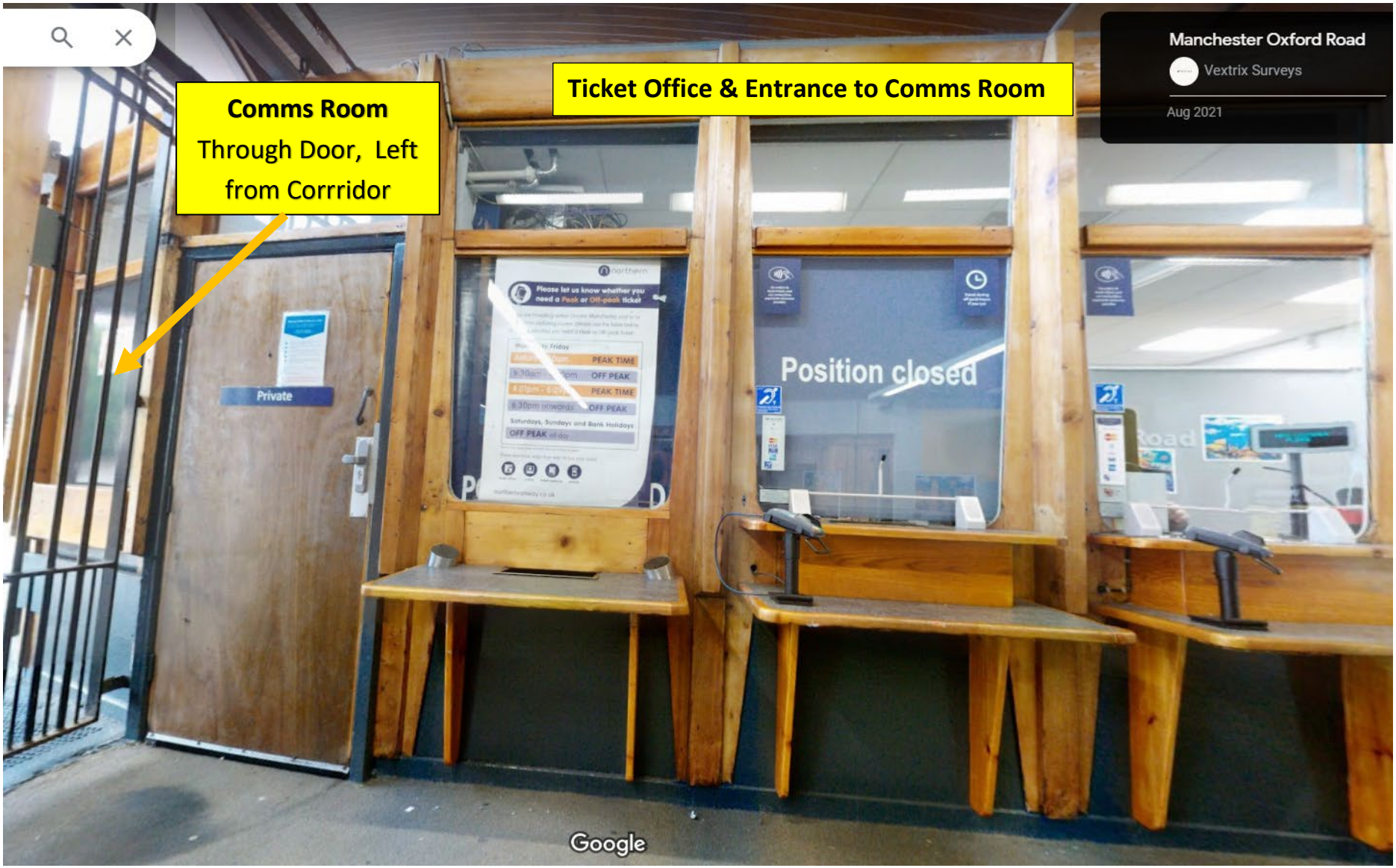
## 8.7 Appendix G – Site Setup & Arrangements


Train Driver/ Station Staff Mess Room
PWM Staff are Authorised to use these facilities
Internal Storage
Storage Area Inside
Narrow Doorway
Upstairs
Nov 2022
Google

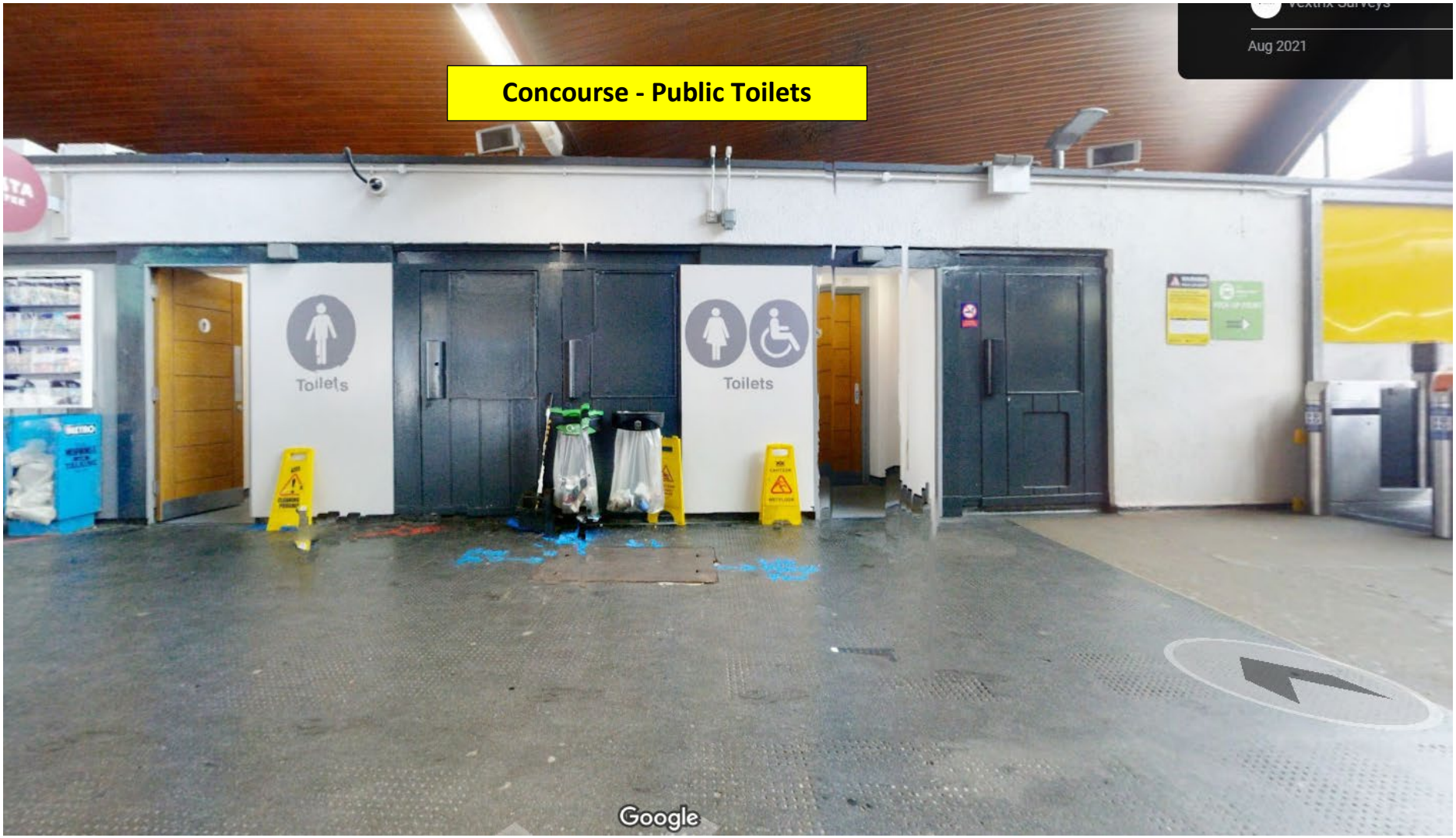

Storage Area Access
Train Driver/ Station Staff Mess Room


Emergency Escape for Lift Underpass


Main Station Entrance
Ticket Office
Station Manager
Google Stre
Nov 2022

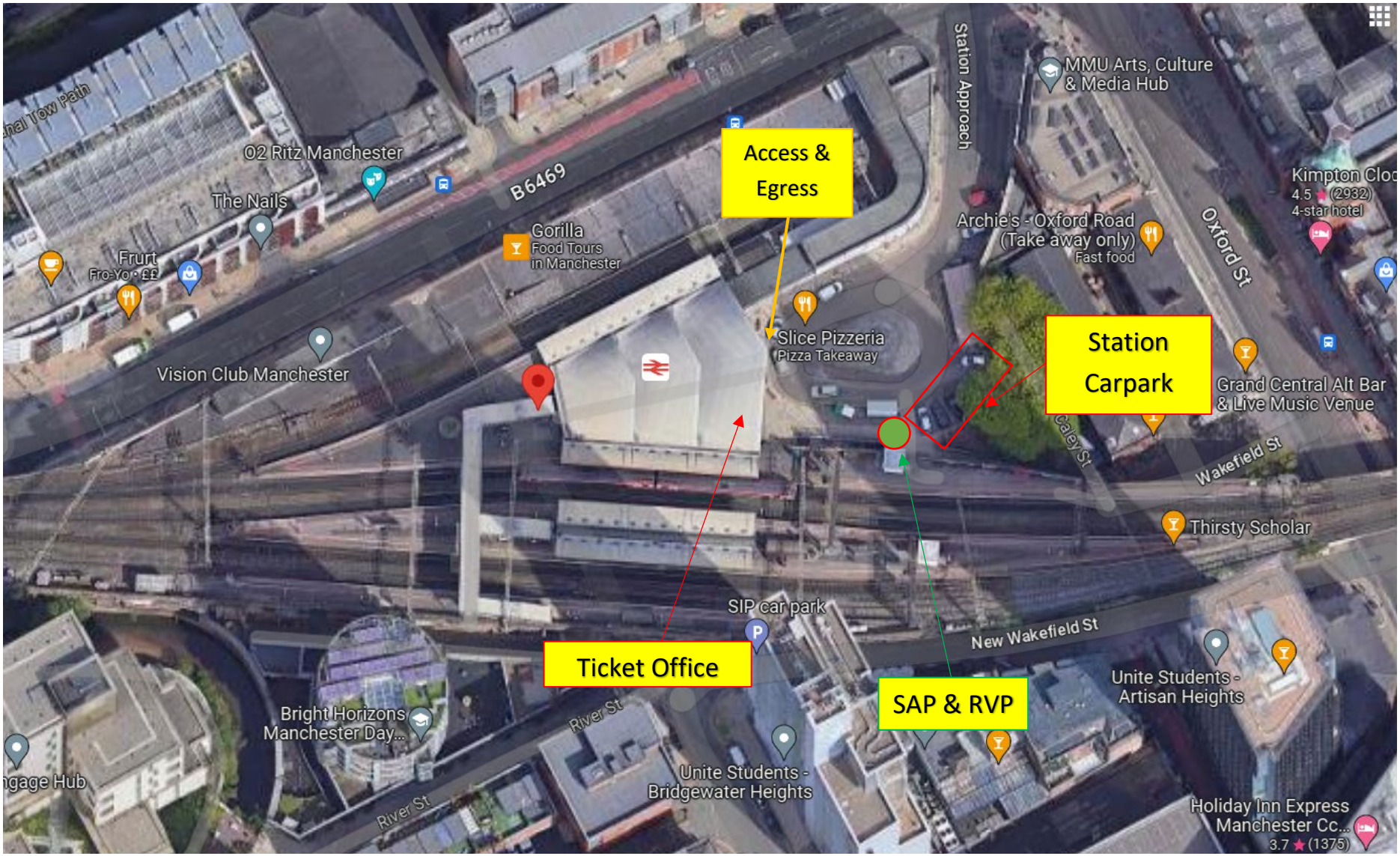

Comms Room
Through Door, Left
from Corrridor
Ticket Office & Entrance to Comms Room
Manchester Oxford Road
Vextrix Surveys
Aug 2021
Private
Position closed
PEAK TIME
OFF PEAK
PEAK TIME
OFF PEAK
Saturdays, Sundays and Bank Holidays
OFF PEAK
Google


Station Manager Office
Sign In Point
Aug 2021
to
Oxford Roac
Google

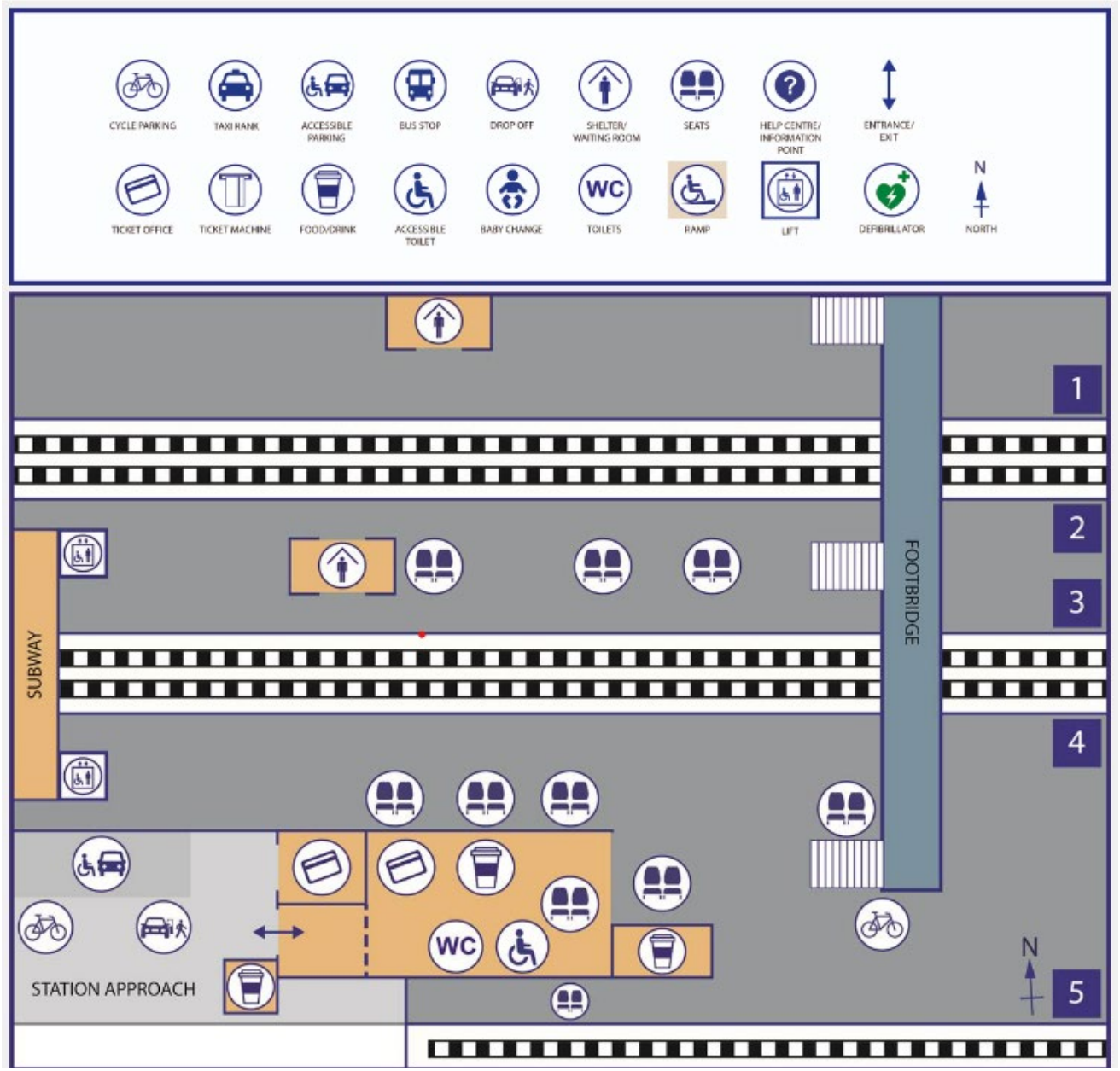

Concourse - Public Toilets
Aug 2021
Toilets
Toilets
Google


Emergency Escape for Lift Underpass
Google


External Storage Area
Herris Fencing
Oxford Road
Google


Access &
Egress
Station
Carpark
Ticket Office
SAP & RVP
B6469
Station Approach
Oxford St
Wakefield St
New Wakefield St
River St
O2 Ritz Manchester
The Nails
Frurt
Fro-Yo · ££
Gorilla
Food Tours
in Manchester
Vision Club Manchester
Slice Pizzeria
Pizza Takeaway
MMU Arts, Culture
& Media Hub
Archie's - Oxford Road
(Take away only)
Fast food
Grand Central Alt Bar
& Live Music Venue
Thirsty Scholar
SIP car park
Unite Students -
Artisan Heights
Unite Students -
Bridgewater Heights
Bright Horizons
Manchester Day...
Holiday Inn Express
Manchester Cc...
3.7 (1375)


Station Carpark.
Daily Permission from station staff required
Oxford Road


CYCLE PARKING
TAXI RANK
ACCESSIBLE PARKING
BUS STOP
DROP OFF
SHELTER/ WAITING ROOM
SEATS
HELP CENTRE/ INFORMATION POINT
ENTRANCE/ EXIT
TICKET OFFICE
TICKET MACHINE
FOOD/DRINK
ACCESSIBLE TOILET
BABY CHANGE
TOILETS
RAMP
LIFT
DEFIBRILLATOR
NORTH
WC
1
2
3
4
5
FOOTBRIDGE
SUBWAY
STATION APPROACH
WC
N

## 8.8 Appendix H – COSHH Assessments

| | | |
|---|---|---|
| COSHH | ASSESSMENT NO: NRL-0002 | PWM UK |

| | |
|---|---|
| **Substance:** Zinga Zinc Paint | **Supplier:** ZINGAMETALL bvba<br>Industriepark Rozenstraat 4 9810 Eke – Belgium<br>Telephone (32) 9 385.68.81 Tel. (emergency)<br>Belgium: (32) 70 245.245 (Centre Anti-poison) UK: 0044 870 600 6266 |
| **Site / Area:** Northern Rail | **Task /Activity:** Painting cut edges of galvanised containment. |
| **Method of Creation / Application / Use:** | 1Litre cans. Applied with a paint brush or paint roller. |
| **Quantity Created / Used Per Shift / Day** | 1Liter cans, as needed per shift |
| **Length of Exposure Per Shift / Day** | 0 – 20 Mins ☒ 21 – 60 Mins ☐ 1 – 2 Hrs ☐ 3 – 5 Hrs ☐ Over 5 Hrs ☐ |
| **Existing Level of Ventilation** | Very Good ☐ Good ☒ Mediocre ☐ Poor ☐ N/A ☐ |

**CLASSIFICATION (state the category of danger)**

| | | |
|---|---|---|
|  ☐ **TOXIC** |  ☒ **HARMFUL OR IRRITANT** |  ☒ **FLAMMABLE OR HIGHLY FLAMMABLE** |
|  ☐ **CORROSIVE** |  ☐ **EXPLOSIVE** |  ☐ **OXIDISING** |
|  ☒ **RESPIRATORY SENSITISATION** |  ☒ **HAZARDOUS TO THE AQUATIC ENVIRONMENT** |  ☐ **COMPRESSED GAS** |

**HAZARD TYPE**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| ☐ **GAS** | ☒ **VAPOUR** | ☐ **MIST** | ☒ **FUME** | ☒ **DUST** | ☒ **LIQUID** | ☐ **SOLID** | ☐ **OTHER Granular solid** |

**ROUTES OF EXPOSURE**

| | | | | |
|---|---|---|---|---|
| ☒ **INHALATION** | ☒ **SKIN** | ☒ **EYES** | ☒ **INGESTION** | ☐ **INJECTION** |

**Name the Hazardous Contents & State the Workplace Exposure Limits (WEL's) for each:**

| Hazardous Content: | Long Term Exposure Level (8hr TWA) | Short Term Exposure Level (15 mins) |
|---|---|---|
| Solvent naphtha light aromatic (low boiling point)<br>Zinc powder – zinc dust (stabilised) | Not Stated | Not Stated |

**RISKS TO HEALTH FROM HAZARDS**

**INHALATION:** Prolonged exposure can cause Cough, Nausea, Headache, Unconsciousness. H336 - May cause drowsiness or dizziness

**SKIN:** Prolonged contact with skin may Redness, pain. Prolonged or repeated skin contact with the material will remove natural oils which leads to a dermatitis.

**EYES:** Contact with the eyes is likely to be irritating.

**INGESTION:** If ingested can cause abdominal pain, nausea, vomiting. Hazard statements (CLP): H304 - May be fatal if swallowed and enters airways

**INJECTION:** N/A

## ENVIRONMENTAL:

**Control Measures:** (*Do not refer to any PPE in this section*): Liquid product: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Signal word (CLP): Danger
H400 - Very toxic to aquatic life

## PERSONAL PROTECTIVE EQUIPMENT

| | | | |
|---|---|---|---|
| ☒ Dust Mask EN 149:2001 FFP3 | ☐ Visor | ☒ Gloves EN 388:2003 and EN ISO 13997 | ☐ Overalls |
| ☐ Respirator | ☒ Goggles / Safety Glasses EN 166 1. F | ☒ Footwear Guideline: ISO 20345-S3 | ☐ Other |

## FIRST AID MEASURES

**INHALATION:** Remove victim to fresh air. Allow the victim to rest. Obtain medical attention if breathing difficulty persists.

**SKIN:** Wash with water. Prolonged contact may cause irritation. If symptoms develop or persist, seek medical attention.

**EYES:** Rinse immediately with plenty of water. Obtain medical attention if pain, blinking, tears or redness persists.

**INGESTION:** Rinse mouth. DO NOT INDUCE VOMITING. Seek medical advice.

## FIRE PRECAUTIONS

This product is flammable. Prevent naked lights. No smoking.
Extinguishing media: Foam. Dry chemical. Carbon oxide. Do not enter fire area without proper protective equipment, including respiratory
protection.

## STORAGE & TRANSPORT

No naked lights. No smoking. Both local exhaust and general room ventilation are usually required. Use grounded electrical/mechanical equipment and electrical apparatus that may be used in explosive atmosphere. Keep in fireproof place. Store in tightly closed, properly ventilated containers away from heat, sparks, naked flames. Handle in accordance with good industrial hygiene and safety procedures. Ensure prompt removal from eyes, skin and clothing. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.
Labelling ADR: Flammable. 1263 (Paint related material). 3. Marine Pollutant.

## DISPOSAL (Including Empty and Contaminated Containers)

| ☒ Hazardous Waste | ☐ Skip | ☐ Return to Depot | ☐ Return to Supplier | ☐ Other |
|---|---|---|---|---|

## AFTER CONTROL MEASURES

| | | |
|---|---|---|
| IS HEALTH SURVEILANCE / MONTORING REQUIRED? | ☐ YES | ☒ NO |
| IS EXPOSURE ADEQUATELY CONTROLLED? | ☒ YES | ☐ NO |

| | | | |
|---|---|---|---|
| RISK RATING | ☐ HIGH | ☐ MEDIUM | ☒ LOW |

| | |
|---|---|
| **Issue Date:** 15/12/2022 | **Review Date:** 15/12/2023 |
| **Name:** ION VIRLAN | **Signature:** |

| | | |
|---|---|---|
| COSHH | ASSESSMENT NO: NRL-0001 | PWM UK |

| | |
|---|---|
| **Substance:** CT-90 Cutting and Tapping Fluid Polybottle | **Supplier:** Action Can Ltd., Dixon Close, Old Boston Trading Estate, Haydock, St. Helens, Merseyside. Wa11 9SF, Tel: 01942 713667, Email: info@actioncan.com |
| **Site / Area:** Northern Rail | **Task /Activity:** Supplied as a metal working lubricant/coolant for use in suitable industrial applications only. |
| **Method of Creation / Application / Use:** | Applied on the drill bit when drilling metal to reduce friction and extend drill bit durability. |
| **Quantity Created / Used Per Shift / Day** | As mandated by task |
| **Length of Exposure Per Shift / Day** | 0 – 20 Mins ☒ 21 – 60 Mins ☐ 1 – 2 Hrs ☐ 3 – 5 Hrs ☐ Over 5 Hrs ☐ |
| **Existing Level of Ventilation** | Very Good ☐ Good ☒ Mediocre ☐ Poor ☐ N/A ☐ |

**CLASSIFICATION (state the category of danger)**

| | | |
|---|---|---|
|  ☐ TOXIC |  ☒ HARMFUL OR IRRITANT |  ☐ FLAMMABLE OR HIGHLY FLAMMABLE |
|  ☐ CORROSIVE |  ☐ EXPLOSIVE |  ☐ OXIDISING |
|  ☐ RESPIRATORY SENSITISATION |  ☐ HAZARDOUS TO THE AQUATIC ENVIRONMENT |  ☐ COMPRESSED GAS |

**HAZARD TYPE**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| ☐ GAS | ☐ VAPOUR | ☐ MIST | ☐ FUME | ☐ DUST | ☒ LIQUID | ☐ SOLID | ☐ OTHER Granular solid |

**ROUTES OF EXPOSURE**

| | | | | |
|---|---|---|---|---|
| ☒ INHALATION | ☒ SKIN | ☒ EYES | ☒ INGESTION | ☐ INJECTION |

**Name the Hazardous Contents & State the Workplace Exposure Limits (WEL's) for each:**

| Hazardous Content: | Long Term Exposure Level (8hr TWA) | Short Term Exposure Level (15 mins) |
|---|---|---|
| Residual oils (petroleum), solventrefined | 5mg/m3 | 10mg/m3 |

**RISKS TO HEALTH FROM HAZARDS**

**INHALATION:** There may be irritation of respiratory track.

**SKIN:** There may be mild irritation at the site of contact

**EYES:** Eye Contact: Redness, May cause irritation.

**INGESTION:** There may be irritation of the throat

**INJECTION:** N/A

**ENVIRONMENTAL:**

**Control Measures:** (*Do not refer to any PPE in this section*):
Do not allow to enter drains, sewers or watercourses. Methods and material for containment and cleaning up Adsorb spillages onto sand, earth or any suitable adsorbent material. Transfer to a lidded container for disposal or recovery. Low toxicity to aquatic organisms. Biodegradable. The product has no potential for bioaccumulation. The product may adsorb onto soils and sediments. Dispose of in an

approved landfill. Do not allow into any sewer on the ground, or into any body of water. Dispose of contents in accordance with local, state or national legislation

## PERSONAL PROTECTIVE EQUIPMENT

| | | | |
|---|---|---|---|
| ☐ Dust Mask | ☐ Visor | ☒ Gloves EN 388:2003 and EN ISO 13997 | ☐ Overalls |
| ☐ Respirator | ☒ Goggles / Safety Glasses EN 166 1. F | ☐ Footwear | ☐ Other |

## FIRST AID MEASURES

**INHALATION:** Move person to fresh air.

**SKIN:** Wash skin with water.

**EYES:** Hold eye open and rinse slowly and gently with water for 15- 20 minutes.

**INGESTION:** Rinse mouth.

## FIRE PRECAUTIONS

Suitable Extinguishing Media As appropriate for surrounding fire. Special hazards arising from the substance or mixture Combustion causes toxic fumes.

## STORAGE & TRANSPORT

Ensure adequate ventilation. Avoid direct contact with the substance. Conditions for safe storage, including any incompatibilities: Keep away from heat and direct sunlight. Keep container tightly closed and in a well-ventilated place. Store in dry place. Storage Temperature Keep in a cool place. Storage Life Stable under normal conditions. Incompatible materials Strong oxidising agents, Strongly acidic. Specific end use(s) Supplied as a metal working lubricant/coolant for use in suitable industrial applications only. No hazard classification for transport.

## DISPOSAL (Including Empty and Contaminated Containers)

| | | | | |
|---|---|---|---|---|
| ☐ **Hazardous Waste** | ☒ **Skip** | ☐ **Return to stores** | ☐ **Return to Supplier** | ☐ **Other** |

## AFTER CONTROL MEASURES

| | | | |
|---|---|---|---|
| IS HEALTH SURVEILANCE / MONTORING REQUIRED? | ☐ YES | ☒ NO | |
| IS EXPOSURE ADEQUATELY CONTROLLED? | ☒ YES | ☐ NO | |
| RISK RATING | ☐ HIGH | ☐ MEDIUM | ☒ LOW |

| | |
|---|---|
| **Issue Date:** 15/12/2022 | **Review Date:** 15/12/2023 |
| **Name:** ION VIRLAN | **Signature:** |

| | | |
|---|---|---|
| COSHH | ASSESSMENT NO: NRL-0003 | PWM UK |

| | |
|---|---|
| **Substance:** HIT-HY 200-A | **Supplier:** Hilti (Gt. Britain) Ltd. 1 Trafford Wharf Road, Trafford Park, M17 1BY, Manchester - Great Britain, T +44 161 886 1000<br>0800 886 100 |
| **Site / Area:** Northern Rail | **Task /Activity:** Supplied as a composite mortar component for fasteners in the construction industry |
| **Method of Creation / Application / Use:** | Applied with the purpose made Hilti application gun. |
| **Quantity Created / Used Per Shift / Day** | As mandated by task |
| **Length of Exposure Per Shift / Day** | 0 – 20 Mins ☒ 21 – 60 Mins ☐ 1 – 2 Hrs ☐ 3 – 5 Hrs ☐ Over 5 Hrs ☐ |
| **Existing Level of Ventilation** | Very Good ☐ Good ☒ Mediocre ☐ Poor ☐ N/A ☐ |

**CLASSIFICATION (state the category of danger)**

| | | |
|---|---|---|
|  ☐ **TOXIC** |  ☒ **HARMFUL OR IRRITANT** |  ☐ **FLAMMABLE OR HIGHLY FLAMMABLE** |
|  ☐ **CORROSIVE** |  ☐ **EXPLOSIVE** |  ☐ **OXIDISING** |
|  ☐ **RESPIRATORY SENSITISATION** |  ☒ **HAZARDOUS TO THE AQUATIC ENVIRONMENT** |  ☐ **COMPRESSED GAS** |

**HAZARD TYPE**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| ☐ **GAS** | ☐ **VAPOUR** | ☐ **MIST** | ☐ **FUME** | ☐ **DUST** | ☐ **LIQUID** | ☒ **SOLID** | ☒ **OTHER 2 Pack paste formula** |

**ROUTES OF EXPOSURE**

| | | | | |
|---|---|---|---|---|
| ☒ **INHALATION** | ☒ **SKIN** | ☒ **EYES** | ☒ **INGESTION** | ☐ **INJECTION** |

**Name the Hazardous Contents & State the Workplace Exposure Limits (WEL's) for each:**

| Hazardous Content: | Long Term Exposure Level (8hr TWA) | Short Term Exposure Level (15 mins) |
|---|---|---|
| The product has a pasty consistency. Exposure limit values for respirable dusts are not relevant for this product. | Not stated | Not stated |

**RISKS TO HEALTH FROM HAZARDS**

**INHALATION:** There may be irritation of respiratory track.

**SKIN:** May cause an allergic skin reaction.

**EYES:** May cause severe irritation.

**INGESTION:** There may be irritation of the throat

**INJECTION:** N/A

**ENVIRONMENTAL:**

**Control Measures:** (*Do not refer to any PPE in this section*):

| | | |
|---|---|---|
| COSHH | ASSESSMENT NO: NRL-0003 | PWM UK |

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters. Collect spillage. This material and its container must be disposed of in a safe way, and as per local legislation. Mechanically recover the product. Store away from other materials. Other information Dispose of materials or solid residues at an authorized site.

## PERSONAL PROTECTIVE EQUIPMENT

| | | | |
|---|---|---|---|
| ☐ Dust Mask | ☐ Visor | ☒ Gloves<br>EN 374 Nitrile rubber (NBR) | ☒ Overalls |
| ☐ Respirator | ☒ Goggles / Safety Glasses<br>EN 166 1. F; EN 170 | ☐ Footwear | ☐ Other |

## FIRST AID MEASURES

**INHALATION:** Remove victim to fresh air and keep at rest in a position comfortable for breathing. Assure fresh air breathing. Allow the victim to rest.

**SKIN:** Wash contaminated clothing before reuse. Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention.

**EYES:** Rinse immediately with plenty of water. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention if pain, blinking or redness persists.

**INGESTION:** Rinse mouth. Drink plenty of water. Get medical advice/attention. Do not induce vomiting. Obtain emergency medical attention.

## FIRE PRECAUTIONS

Suitable extinguishing media: Water spray. Carbon dioxide. Dry powder. Foam. Sand. Unsuitable extinguishing media: Do not use a heavy water stream. Thermal decomposition generates: Carbon dioxide. Carbon monoxide.

## STORAGE & TRANSPORT

Storage conditions Keep cool. Protect from sunlight.
Incompatible products Strong bases. Strong acids.
Incompatible materials Sources of ignition. Direct sunlight.
Storage temperature 5 - 25 °C
Heat and ignition sources Keep away from heat and direct sunlight.
Transport in accordance with ADR / IATA / IMDG / RID, not restricted according ADR Special Provision SP375, IATA-DGR Special Provision A197 and IMDG-Code 2.10.2.7

## DISPOSAL (Including Empty and Contaminated Containers)

| ☒ Hazardous Waste | ☐ Skip | ☐ Return to stores | ☐ Return to Supplier | ☐ Other |
|---|---|---|---|---|

## AFTER CONTROL MEASURES

| | | | |
|---|---|---|---|
| IS HEALTH SURVEILANCE / MONTORING REQUIRED? | ☐ YES | ☒ NO | |
| IS EXPOSURE ADEQUATELY CONTROLLED? | ☒ YES | ☐ NO | |
| RISK RATING | ☐ HIGH | ☐ MEDIUM | ☒ LOW |

| | |
|---|---|
| **Issue Date:** 15/12/2022 | **Review Date:** 15/12/2023 |
| **Name:** ION VIRLAN | **Signature:** |

| | | |
|---|---|---|
| COSHH | ASSESSMENT NO: CWS004 | PWM UK |

| | |
|---|---|
| **Substance:** Crystalline Silica (quartz) Dust | **Supplier:** N/A |
| **Site / Area:** Northern Rail | Task /Activity: Processing, handling and use of natural aggregates, particularly through crushing, drilling, cutting, loading and unloading of bulk aggregates. |
| **Method of Creation / Application / Use:** | Naturally occurring or particularly through crushing, drilling, cutting, loading and unloading of bulk aggregates. |
| **Quantity Created / Used Per Shift / Day** | N/A |
| **Length of Exposure Per Shift / Day** | 0 – 20 Mins ☐ 21 – 60 Mins ☒ 1 – 2 Hrs ☐ 3 – 5 Hrs ☐ Over 5 Hrs ☐ |
| **Existing Level of Ventilation** | Very Good ☐ Good ☒ Mediocre ☐ Poor ☐ N/A ☐ |

**CLASSIFICATION (state the category of danger)**

| | | |
|---|---|---|
|  ☐ **TOXIC** |  ☒ **HARMFUL OR IRRITANT** |  ☐ **FLAMMABLE OR HIGHLY FLAMMABLE** |
|  ☐ **CORROSIVE** |  ☐ **EXPLOSIVE** |  ☐ **OXIDISING** |
|  ☒ **RESPIRATORY SENSITISATION** |  ☐ **HAZARDOUS TO THE AQUATIC ENVIRONMENT** |  ☐ **COMPRESSED GAS** |

**HAZARD TYPE**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| ☐ **GAS** | ☐ **VAPOUR** | ☐ **MIST** | ☐ **FUME** | ☒ **DUST** | ☐ **LIQUID** | ☒ **SOLID** | ☒ **OTHER** Granular solid |

**ROUTES OF EXPOSURE**

| | | | | |
|---|---|---|---|---|
| ☒ **INHALATION** | ☒ **SKIN** | ☒ **EYES** | ☒ **INGESTION** | ☐ **INJECTION** |

**Name the Hazardous Contents & State the Workplace Exposure Limits (WEL's) for each:**

| **Hazardous Content:** | **Long Term Exposure Level (8hr TWA)** | **Short Term Exposure Level (15 mins)** |
|---|---|---|
| Crystalline Silica (quartz) Dust | 10mg/m3 Total Dust<br>4mg/m3 Respirable Dust<br>0.1mg/m3 Respirable Quartz (Crystalline Silica SiO2) | |

## RISKS TO HEALTH FROM HAZARDS

**INHALATION:** If inhaled over a prolonged or extended period, respirable dust from natural aggregate can lead to respiratory system damage and disease. Respirable crystalline silica has been associated with the lung disease silicosis.

**SKIN:** Prolonged contact with skin may cause irritation and dryness, which may lead to dermatitis.

**EYES:** Particles of grit or dust from natural aggregates may irritate and scratch eyes.

**INGESTION:** Unlikely to cause any problems.

**INJECTION:** N/A

## ENVIRONMENTAL:

**Control Measures:** (Do not refer to any PPE in this section): When used and disposed of as intended, no adverse environmental effects are foreseen. Aggregates are naturally occurring, inert minerals and do not pose a significant ecological hazard. Aggregates are non-volatile, inert materials that will sink in water and form a layer on the surface of the ground. Dust may become airborne, leading to deposition on vegetation. Aggregates are resistant to degradation and will persist in the environment. Dust should be controlled by containment, suppression and extraction/ filtration where possible. Natural aggregates are classed as 'inert' but should be disposed of in accordance with local and national legal requirements. Natural aggregates can be readily reused or recycled.

## PERSONAL PROTECTIVE EQUIPMENT

| | | | |
|---|---|---|---|
|  ☒ Dust Mask |  ☐ Visor |  ☒ Gloves |  ☐ Overalls |
|  ☐ Respirator |  ☒ Goggles / Safety Glasses |  ☒ Footwear |  ☐ Other |

## FIRST AID MEASURES

**INHALATION:** Immediately remove to fresh air. If breathing difficulties are experienced, seek medical attention.

**SKIN:** Wash with water. Prolonged contact may cause irritation. If symptoms develop or persist, seek medical attention.

**EYES:** Do not rub eyes, as the material is abrasive and may scratch the surface of the eye. Immediately and thoroughly irrigate with eye wash solution or clean water. If symptoms develop or persist, seek medical attention.

**INGESTION:** Remove to fresh air. If person is conscious, rinse out mouth and give water to drink.

Seek medical advice if symptoms develop.

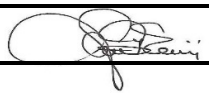
## FIRE PRECAUTIONS

Natural aggregates are non-flammable and are not combustible.

## STORAGE & TRANSPORT

Powder product should be stored appropriately to minimise the creation of airborne dust. Very fine, dry product in bulk should be stored in enclosed silos. Bulk aggregate containing fine material (<3mm) should not be stored in the open unless it is conditioned with water. Stockpiles should be sited to avoid wind-whipping where possible. Storage bays should be fitted with 3 sides and the aggregate stored

below the level of the sides to avoid wind-whipping. None – not classified as dangerous for transport.

| | | | | |
|---|---|---|---|---|
| Open vehicles should be sheeted or loads conditioned with water to avoid dust nuisance. | | | | |
| **DISPOSAL (Including Empty and Contaminated Containers)** | | | | |
| ☐ **Hazardous Waste** | ☒ **Skip** | ☐ **Return to Depot** | ☐ **Return to Supplier** | ☐ **Other** |
| **AFTER CONTROL MEASURES** | | | | |
| IS HEALTH SURVEILANCE / MONTORING REQUIRED? | | ☐ YES | ☒ NO | |
| IS EXPOSURE ADEQUATELY CONTROLLED? | | ☒ YES | ☐ NO | |
| RISK RATING | ☐ HIGH | ☐ MEDIUM | ☒ LOW | |
| **Issue Date:** 15/12/2022 | | **Review Date:** 15/12/2023 | | |
| **Name:** ION VIRLAN | | **Signature:**  | | |

| | | |
|---|---|---|
| COSHH | ASSESSMENT NO: NRL005 | PWM UK |

| | |
|---|---|
| **Substance:** BOSTIK BONDFLEX 100 CLEAR | **Supplier:** Bostik Limited<br>Common Rd ST16 3EH Stafford UK<br>Tel: +44 (1785) 27 26 25 Fax: +44 (1785) 25 72 36<br>(Centre Anti-poison) UK: 0044 870 600 6266 |
| **Site / Area:** Northern Rail – All Stations | **Task /Activity:** Sealing of exposed structure/equipment interfaces to prevent water dust ingress |
| **Method of Creation / Application / Use:** | 310ml, applied with cartridge gun |
| **Quantity Created / Used Per Shift / Day** | 2m (Linear) 6mm bead |
| **Length of Exposure Per Shift / Day** | 0 – 20 Mins ☒ 21 – 60 Mins ☐ 1 – 2 Hrs ☐ 3 – 5 Hrs ☐ Over 5 Hrs ☐ |
| **Existing Level of Ventilation** | Very Good ☐ Good ☒ Mediocre ☐ Poor ☐ N/A ☐ |

**CLASSIFICATION (state the category of danger)**

| | | |
|---|---|---|
|  ☐ **TOXIC** |  ☒ **HARMFUL OR IRRITANT** |  ☐ **FLAMMABLE OR HIGHLY FLAMMABLE** |
|  ☐ **CORROSIVE** |  ☐ **EXPLOSIVE** |  ☐ **OXIDISING** |
|  ☒ **RESPIRATORY SENSITISATION** |  ☒ **HAZARDOUS TO THE AQUATIC ENVIRONMENT** |  ☐ **COMPRESSED GAS** |

**HAZARD TYPE**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| ☐ **GAS** | ☐ **VAPOUR** | ☐ **MIST** | ☒ **FUME** | ☐ **DUST** | ☐ **LIQUID** | ☒ **SOLID** | ☐ **OTHER Granular solid** |

**ROUTES OF EXPOSURE**

| | | | | |
|---|---|---|---|---|
| ☒ **INHALATION** | ☒ **SKIN** | ☐ **EYES** | ☐ **INGESTION** | ☐ **INJECTION** |

**Name the Hazardous Contents & State the Workplace Exposure Limits (WEL's) for each:**

| Hazardous Content: | Long Term Exposure Level (8hr TWA) | Short Term Exposure Level (15 mins) |
|---|---|---|
| Distallates,<br>Triacetoxymethylsilane<br>2-octyl-2H-isothiazol-3-one | Not Stated | Not Stated |

**RISKS TO HEALTH FROM HAZARDS**

**INHALATION:** Small amounts of methanol (CAS 67-56-1) are formed by hydrolysis and released upon curing

**SKIN:** Prolonged contact with skin may Redness, pain

**EYES:** Contact with the eyes is likely to be irritating.

**INGESTION:** If ingested can cause abdominal pain, nausea, vomiting. Hazard statements (CLP): H304 - May be fatal if swallowed and enters airways

**INJECTION:** N/A

## ENVIRONMENTAL:

**Control Measures:** (*Do not refer to any PPE in this section*): Harmful to aquatic life with long lasting effects.

Excess material or empty cartridges to be disposed of correctly. If required, take up mechanically, placing in appropriate containers for disposal.

## PERSONAL PROTECTIVE EQUIPMENT

| | | | |
|---|---|---|---|
| ☐ Dust Mask EN 149:2001 FFP3 | ☐ Visor | ☒ Gloves EN 388:2003 and EN ISO 13997 | ☐ Overalls |
| ☐ Respirator | ☒ Goggles / Safety Glasses EN 166 1. F | ☐ Footwear Guideline: ISO 20345-S3 | ☐ Other |

## FIRST AID MEASURES

**INHALATION:** Remove to fresh air. IF exposed or concerned: Get medical advice/attention.

**SKIN:** Wash skin with soap and water. In the case of skin irritation or allergic reactions see a doctor.

**EYES:** Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a doctor

**INGESTION:** Clean mouth with water. Do NOT induce vomiting. Drink 1 or 2 glasses of water. Never give anything by mouth to an unconscious person.

## FIRE PRECAUTIONS

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

## STORAGE & TRANSPORT

Keep container tightly closed in a dry and well-ventilated place.
No special requirements for small quantities

## DISPOSAL (Including Empty and Contaminated Containers)

| ☐ Hazardous Waste | ☒ Skip | ☐ Return to Depot | ☐ Return to Supplier | ☐ Other |
|---|---|---|---|---|

## AFTER CONTROL MEASURES

| | | |
|---|---|---|
| IS HEALTH SURVEILANCE / MONTORING REQUIRED? | ☐ YES | ☒ NO |
| IS EXPOSURE ADEQUATELY CONTROLLED? | ☒ YES | ☐ NO |

| | | | |
|---|---|---|---|
| RISK RATING | ☐ HIGH | ☐ MEDIUM | ☒ LOW |

| | |
|---|---|
| **Issue Date:** 01/02/2023 | **Review Date:** 01/02/2024 |
| **Name:** David Separovich | **Signature:** D Separovich |

| | | |
|---|---|---|
| COSHH | ASSESSMENT NO: NTL031 | PWM UK |

| | |
|---|---|
| **Substance:** Unleaded Petrol | **Supplier:** Various providers |
| **Site / Area:** Northern Rail Stations | **Task /Activity:** Fuel for petrol powered equipment |
| **Method of Creation / Application / Use:** | Stored in sealed container and transferred to combustion engine powered equipment |
| **Quantity Created / Used Per Shift / Day** | As mandated by task |
| **Length of Exposure Per Shift / Day** | 0 – 20 Mins ☒ 21 – 60 Mins ☐ 1 – 2 Hrs ☐ 3 – 5 Hrs ☐ Over 5 Hrs ☐ |
| **Existing Level of Ventilation** | Very Good ☒ Good ☐ Mediocre ☐ Poor ☐ N/A ☐ |

**CLASSIFICATION (state the category of danger)**

| | | |
|---|---|---|
|  ☐ TOXIC |  ☒ HARMFUL OR IRRITANT |  ☒ FLAMMABLE OR HIGHLY FLAMMABLE |
|  ☐ CORROSIVE |  ☐ EXPLOSIVE |  ☐ OXIDISING |
|  ☒ RESPIRATORY SENSITISATION |  ☐ HAZARDOUS TO THE AQUATIC ENVIRONMENT |  ☐ COMPRESSED GAS |

**HAZARD TYPE**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| ☐ GAS | ☐ VAPOUR | ☐ MIST | ☒ FUME | ☒ DUST | ☒ LIQUID | ☐ SOLID | ☐ OTHER 2 Pack paste formula |

**ROUTES OF EXPOSURE**

| | | | | |
|---|---|---|---|---|
| ☒ INHALATION | ☒ SKIN | ☒ EYES | ☒ INGESTION | ☐ INJECTION |

**Name the Hazardous Contents & State the Workplace Exposure Limits (WEL's) for each:**

| Hazardous Content: | Long Term Exposure Level (8hr TWA) | Short Term Exposure Level (15 mins) |
|---|---|---|
| Toluene | 191 mg/m3 | 384 mg/m3 |
| n-Hexane | 72 mg/m3 | |
| Benzene | 3.35 mg/m3 | |
| Ethylbenzene | 441 mg/m3 | 552 mg/m3 |
| Xylene, mixed isomers | 220 mg/m3 | 441 mg/m3 |
| Ethanol | 1920 mg/m3 | |
| Methanol | 266 mg/m3 | 333 mg/m3 |

## RISKS TO HEALTH FROM HAZARDS

**INHALATION:** There may be irritation of respiratory track.

**SKIN:** May cause an allergic skin reaction.

**EYES:** May cause severe irritation.

**INGESTION:** There may be irritation of the throat

**INJECTION:** N/A

## ENVIRONMENTAL:

**Control Measures:** (*Do not refer to any PPE in this section*):
Collect spillage. Stop the leak if it is safe to do so. Do not allow to enter drains, sewers or watercourses. Spillages or uncontrolled discharges into watercourses must be alerted to the Environment Agency or other appropriate regulatory body. In case of soil contamination, remove contaminated soil and treat in accordance with local regulations. Inform the relevant authorities if the product has caused environmental pollution.

## PERSONAL PROTECTIVE EQUIPMENT

| | | | |
|---|---|---|---|
|  ☐ Dust Mask |  ☐ Visor |  ☒ Gloves EN 374 Nitrile rubber (NBR) |  ☐ Overalls |
|  ☐ Respirator |  ☒ Goggles / Safety Glasses EN 166 1. F; EN 170 |  ☐ Footwear |  ☐ Other |

## FIRST AID MEASURES

**INHALATION:** If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. If casualty is unconscious and not breathing, or if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. If the casualty is unconscious and breathing, place in the recovery position with the head below level of the torso. Immediately obtain specialist medical assessment and treatment for the casualty.

**SKIN:** Drench contaminated clothing with water before removing to avoid risk of sparks from static electricity. Take off contaminated clothing and wash it before reuse. Wash with plenty of soap and water. If skin irritation occurs, get medical advice/attention. For minor thermal burns, cool the burn. Hold the burned area under cold running water for at least five minutes, or until the pain subsides. Body hypothermia must be avoided.

**EYES:** Remove contact lenses if present and easy to do. Wash eyes immediately with plenty of water, making sure to rinse under eyelids. If symptoms persist, obtain medical attention.

**INGESTION:** Obtain medical attention immediately. Do not wait for symptoms to develop. Do not induce vomiting. Do not give anything by mouth because of risk of material entering the lungs and causing lung damage. If person is drowsy or unconscious and vomiting, place on left side with head down. If possible, do not leave unattended and observe closely for adequacy of breathing

## FIRE PRECAUTIONS

Flammable. Spillages of liquid product will create a fire hazard and may form an explosive atmosphere. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take precautionary measures against static discharge. Use only non-sparkling tools. Use explosion-proof electrical, ventilating and lighting equipment. Keep upwind. Ensure adequate ventilation. Avoid inhalation of vapours. Avoid contact with skin and eyes. Wear suitable personal protective equipment. Wear appropriate respirator when ventilation is inadequate.
Stop the leak if safe to do so.

**Extinguisher**
Suitable: Alcohol resistant foam, inert gas, sand, earth, $CO_2$ or dry powder.

**Not suitable:** Do not use a direct water jet. Do not use foam and water simultaneously

## STORAGE & TRANSPORT

**PRECAUTIONS FOR SAFE HANDLING**

Extremely flammable. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical, ventilating and lighting equipment. Use only non-sparkling tools. Take precautionary measures against static discharge. Use only outdoors or in a well-ventilated area. Provide adequate ventilation, including local extraction, to ensure occupational exposure limits are not exceeded. Avoid breathing vapours/spray. Avoid contact with skin and eyes. Wear suitable personal protective equipment (See Section 8). Open container slowly. The vapor is heavier than air and may create an explosive mixture of vapor and air. Beware of accumulation in confined spaces and low-lying areas. Do not enter confined spaces such as tanks or pits without following proper entry procedures. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid release to the environment. Do not eat, drink or smoke in the vicinity of the product. Wash thoroughly after handling. Take off contaminated clothing and wash it before reuse. Contaminated clothing should be thoroughly cleaned or disposed of as hazardous waste.

**CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES**

Keep away from heat and sources of ignition. Keep away from direct sunlight. Store locked up. Store in a well-ventilated place. Keep container tightly closed. Keep cool. Empty containers retain product residue and can be hazardous. Keep away from oxidising agents, reducing agents. This product must never be stored in buildings occupied by people. Containers should be stored in well-ventilated areas, flameproof cabinets or stores. Keep in a bunded area with a sealed floor to provide containment against spillage.

## DISPOSAL (Including Empty and Contaminated Containers)

| ☐ Hazardous Waste | ☒ Skip | ☐ Return to stores | ☐ Return to Supplier | ☐ Other |
|---|---|---|---|---|

**WASTE DISPOSAL**

Waste arising from a spillage or tank cleaning should be disposed of in accordance with prevailing regulations, preferably to a recognised collector or contractor. The competence of the collector or contractor to deal satisfactorily with this type of product should be established beforehand. Do not dispose into the environment, in drains or in watercourses. Do not dispose of tank water bottoms by allowing them to drain into the ground. This will result in soil and groundwater contamination.

**PRODUCT DISPOSAL**

Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority. European Waste Code: 13 07 02 petrol NOTE: This code has been assigned based upon the most common uses for this material and may not reflect contaminants resulting from actual use. Waste generators/producers are responsible for assessing the actual process used when generating the waste and its contaminants in order to assign the proper waste disposal code

## AFTER CONTROL MEASURES

| | | |
|---|---|---|
| IS HEALTH SURVEILANCE / MONTORING REQUIRED? | ☐ YES | ☒ NO |
| IS EXPOSURE ADEQUATELY CONTROLLED? | ☒ YES | ☐ NO |

| | | | |
|---|---|---|---|
| RISK RATING | ☐ HIGH | ☐ MEDIUM | ☒ LOW |

| | |
|---|---|
| **Issue Date:** 30/08/2023 | **Review Date:** 30/08/2023 |
| **Name:** David Separovich | **Signature:** *D Separovich* |

| | | |
|---|---|---|
| COSHH | ASSESSMENT NO: NTL032 | PWM UK |

| | |
|---|---|
| **Substance:** 2 Stroke Oil | **Supplier:** Various Suppliers |
| **Site / Area:** Northern Rail Stations | **Task /Activity:** Mixed with unleaded fuel to provide adequate lubrication for two stroke combustion engines. |
| **Method of Creation / Application / Use:** | Mixed with unleaded petrol |
| **Quantity Created / Used Per Shift / Day** | As mandated by task |
| **Length of Exposure Per Shift / Day** | 0 – 20 Mins ☒ 21 – 60 Mins ☐ 1 – 2 Hrs ☐ 3 – 5 Hrs ☐ Over 5 Hrs ☐ |
| **Existing Level of Ventilation** | Very Good ☐ Good ☒ Mediocre ☐ Poor ☐ N/A ☐ |

**CLASSIFICATION (state the category of danger)**

| | | |
|---|---|---|
|  ☐ **TOXIC** |  ☒ **HARMFUL OR IRRITANT** |  ☒ **FLAMMABLE OR HIGHLY FLAMMABLE** |
|  ☐ **CORROSIVE** |  ☐ **EXPLOSIVE** |  ☐ **OXIDISING** |
|  ☐ **RESPIRATORY SENSITISATION** |  ☒ **HAZARDOUS TO THE AQUATIC ENVIRONMENT** |  ☐ **COMPRESSED GAS** |

**HAZARD TYPE**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| ☐ **GAS** | ☐ **VAPOUR** | ☐ **MIST** | ☐ **FUME** | ☐ **DUST** | ☒ **LIQUID** | ☐ **SOLID** | ☒ **OTHER 2 Pack paste formula** |

**ROUTES OF EXPOSURE**

| | | | | |
|---|---|---|---|---|
| ☐ **INHALATION** | ☒ **SKIN** | ☒ **EYES** | ☒ **INGESTION** | ☐ **INJECTION** |

**Name the Hazardous Contents & State the Workplace Exposure Limits (WEL's) for each:**

| Hazardous Content: | Long Term Exposure Level (8hr TWA) | Short Term Exposure Level (15 mins) |
|---|---|---|
| hydrotreated Heavy Paraffinic | 5 mg/m3 | 10 mg/m3 |
| Solvent-dewaxed heavy paraffinic | 5mg/m3 | 10 mg/m3 |
| Mineral Oil | 5mg/m3 | N/A |

**RISKS TO HEALTH FROM HAZARDS**

**INHALATION:** Unlikely to be hazardous by inhalation because of the low vapour pressure of the product at ambient temperature.

**SKIN:** Skin irritation should not occur when used as recommended. Repeated exposure may cause skin dryness or cracking.
Prolonged or repeated contact with used oil may cause serious skin diseases, such as dermatitis and skin cancer.

**EYES:** May cause severe irritation.

**INGESTION:** There may be irritation of the throat

**INJECTION:** N/A

## ENVIRONMENTAL:

**Control Measures:** (*Do not refer to any PPE in this section*):

Take care as floors and other surfaces may become slippery. Keep unnecessary and unprotected personnel away from the spillage.
The product is insoluble in water and will spread on the water surface. Avoid the spillage or runoff entering drains, sewers or watercourses. Contain spillage with sand, earth or other suitable non-combustible material or purpose-made spill kits.

## PERSONAL PROTECTIVE EQUIPMENT

| | | | |
|---|---|---|---|
|  ☐ Dust Mask |  ☐ Visor |  ☒ Gloves EN 374 Nitrile rubber (NBR) |  ☐ Overalls |
|  ☐ Respirator |  ☒ Goggles / Safety Glasses EN 166 1. F; EN 170 |  ☐ Footwear |  ☐ Other |

## FIRST AID MEASURES

**INHALATION:** If spray/mist has been inhaled, proceed as follows. Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Get medical attention if any discomfort continues.
Although not classified, the product contains mineral oil. If aspirated into the lungs e.g. through vomiting after ingestion, admit to hospital immediately

**SKIN:** Remove contaminated clothing immediately and wash skin with soap and water.

**EYES:** Speed is essential. Immediately wash eyes with plenty of eyewash solution or running water, holding eyelids apart for 15 minutes. Do not rub eyes in order to avoid possible cornea damage as a result of mechanical stress. Always seek further specialist medical/eye specialist attention to check that all particles have been removed.

**INGESTION:** Get medical attention if any discomfort continues. Do not induce vomiting

## FIRE PRECAUTIONS

Extinguish with foam, carbon dioxide, dry powder or water fog.

**Unsuitable extinguishing media**
Do not use water jet as an extinguisher, as this will spread the fire

## STORAGE & TRANSPORT

**Methods for cleaning up**
In case of spillage on water prevent the spread by use of suitable barrier equipment Contain and absorb spillage with sand, earth or other non-combustible material. Collect and place in suitable waste disposal containers and seal securely. Residues and empty containers should be taken care of as hazardous waste according to local and national provisions.

**Conditions for safe storage**
Store in tightly-closed, original container in a dry, cool and well-ventilated place.

**Storage class**

| | | |
|---|---|---|
| COSHH | ASSESSMENT NO: NTL032 | PWM UK |

| | | | | |
|---|---|---|---|---|
| Miscellaneous hazardous material storage. | | | | |
| **DISPOSAL (Including Empty and Contaminated Containers)** | | | | |
| ☐ **Hazardous Waste** | ☐ **Skip** | ☐ **Return to stores** | ☐ **Return to Supplier** | ☒ **Other** |
| Dispose of waste via a licensed waste disposal contractor.<br>Waste class European waste catalogue (EWC) number = 13 02 08* (other engine, gear and lubricating oil) | | | | |
| **AFTER CONTROL MEASURES** | | | | |
| IS HEALTH SURVEILANCE / MONTORING REQUIRED? | | ☐ YES | ☒ NO | |
| IS EXPOSURE ADEQUATELY CONTROLLED? | | ☒ YES | ☐ NO | |
| RISK RATING | ☐ HIGH | ☐ MEDIUM | ☒ LOW | |
| **Issue Date:** 30/08/2023 | | **Review Date:** 30/08/2023 | | |
| **Name:** David Separovich | | **Signature:** *D Separovich* | | |

| | | |
|---|---|---|
| COSHH | ASSESSMENT NO: NTL030 | PWM UK |

| | |
|---|---|
| **Substance:** Cement | **Supplier:** Tarmac Cement and Lime Limited, Portland House, Bickenhill Lane, Birmingham B37 7BQ, Technical helpdesk: 0845 812 6232 |
| **Site / Area:** Northern Rail Stations | **Task /Activity:** Hand mixed or mechanically mixed with paddle/cement mixer. Used for mortar mixes for building brickworks or used with formwork for concrete bases, plinths and surrounds. |
| **Method of Creation / Application / Use:** | Applied by trowel for dry mix or poured into a form using wet mix |
| **Quantity Created / Used Per Shift / Day** | As mandated by task |
| **Length of Exposure Per Shift / Day** | 0 – 20 Mins ☐ 21 – 60 Mins ☐ 1 – 2 Hrs ☐ 3 – 5 Hrs ☐ Over 5 Hrs ☒ |
| **Existing Level of Ventilation** | Very Good ☒ Good ☐ Mediocre ☐ Poor ☐ N/A ☐ |

## CLASSIFICATION (state the category of danger)

| | | |
|---|---|---|
|  ☐ **TOXIC** |  ☒ **HARMFUL OR IRRITANT** |  ☐ **FLAMMABLE OR HIGHLY FLAMMABLE** |
|  ☒ **CORROSIVE** |  ☐ **EXPLOSIVE** |  ☐ **OXIDISING** |
|  ☒ **RESPIRATORY SENSITISATION** |  ☐ **HAZARDOUS TO THE AQUATIC ENVIRONMENT** |  ☐ **COMPRESSED GAS** |

## HAZARD TYPE

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| ☐ **GAS** | ☐ **VAPOUR** | ☐ **MIST** | ☐ **FUME** | ☒ **DUST** | ☐ **LIQUID** | ☐ **SOLID** | ☒ **OTHER 2 Pack paste formula** |

## ROUTES OF EXPOSURE

| | | | | |
|---|---|---|---|---|
| ☒ **INHALATION** | ☒ **SKIN** | ☒ **EYES** | ☒ **INGESTION** | ☐ **INJECTION** |

**Name the Hazardous Contents & State the Workplace Exposure Limits (WEL's) for each:**

| Hazardous Content: | Long Term Exposure Level (8hr TWA) | Short Term Exposure Level (15 mins) |
|---|---|---|
| Total Dust | 10mg/m3 | Not Applicable |
| Respirable Dust | 4mg/m3 | |
| Crystalline Silica | 0.1mg/m3 | |

## RISKS TO HEALTH FROM HAZARDS

**INHALATION:** There may be irritation of respiratory track.

**SKIN:** May cause an allergic skin reaction.

**EYES:** May cause severe irritation.

**INGESTION:** There may be irritation of the throat

**INJECTION:** N/A

## ENVIRONMENTAL:

**Control Measures:** (*Do not refer to any PPE in this section*):
Measures to reduce generation of dust and to avoid dust propagating in the environment such as regular housekeeping, exhaust ventilation and dry clean-up methods which do not cause airborne dispersion.

Do not wash product down sewage and drainage systems or into bodies of water (e.g. streams).

## PERSONAL PROTECTIVE EQUIPMENT

| | | | |
|---|---|---|---|
| ☒ Dust Mask | ☐ Visor | ☒ Gloves<br>EN 374 Nitrile rubber (NBR) | ☐ Overalls |
| ☐ Respirator | ☒ Goggles / Safety Glasses<br>EN 166 1. F; EN 170 | ☒ Footwear | ☐ Other |

## FIRST AID MEASURES

**INHALATION:** Move to fresh air. Dust in throat and nasal passages should clear spontaneously. Seek medical attention if irritation persists or later develops or if discomfort, coughing or other symptoms persist.

**SKIN:** Remove affected clothing, footwear, watches, jewellery etc. Wash skin with soap and water immediately. Wash contaminated clothing before re-use. Seek medical attention if irritation occurs.

**EYES:** Speed is essential. Immediately wash eyes with plenty of eyewash solution or running water, holding eyelids apart for 15 minutes. Do not rub eyes in order to avoid possible cornea damage as a result of mechanical stress. Always seek further specialist medical/eye specialist attention to check that all particles have been removed.

**INGESTION:** Immediately rinse mouth and drink plenty of water. Do not induce vomiting. Seek immediate medical advice if person becomes uncomfortable. Show the container or label used.

## FIRE PRECAUTIONS

Cement is non-flammable, however it is manufactured in flammable plastic or paper packaging. The product is not combustible. Use a dry powder, foam or CO2 fire extinguisher to extinguish the surrounding fire. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

## STORAGE & TRANSPORT

**Protective Measures**
Do not ingest. Avoid contact with skin. Avoid contact with eyes Wear protective equipment (refer to section 8 of this safety data sheet). Avoid generating dust.

**Advice on general occupational hygiene**
General occupational hygiene measures are required to ensure safe handling of the product. These measures involve good personal and housekeeping practices. Wash hands after use if contaminated. Avoid wearing contaminated clothing. Do not handle or store near food and beverages or smoking material. In dusty environment, wear dust mask, protective goggles and gloves.

**Conditions for safe storage**
Bulk materials should be stored in silos that are waterproof. Packed products should be stored in unopened bags clear of the ground in cool, dry conditions and protected from excessive draught, excesses in temperatures in order to avoid degradation of quality. Bags should be stacked in a stable manner. Do not use aluminium containers due to incompatibility of the materials.

| DISPOSAL (Including Empty and Contaminated Containers) | | | | |
|---|---|---|---|---|
| ☐ Hazardous Waste | ☒ Skip | ☐ Return to stores | ☐ Return to Supplier | ☐ Other |

**Dry product**

Use cleanup methods such as vacuum cleaning-up or vacuum extraction fitted with EPA/HEPA air filters which do not cause airborne dispersion. **Never use compressed air.**

Alternatively, wipe-up the dust by mopping, wet brushing or by using water spray or hoses (fine mist to avoid duct becoming airborne) and remove slurry. If not possible, remove by slurrying with water (see wet product). If only dry cleaning by brushing can be done, ensure all appropriate personel wear correct PPE including dust mask and eye protection at all times. Avoid inhalation of dust and place in a container and dispose of as concrete waste which is not classified as dangerous substance.

**Wet product**

Clean up wet material and place in container or controlled location. Allow material to dry and solidify before disposal as concrete waste which is not classified as dangerous substance.

| AFTER CONTROL MEASURES | | | |
|---|---|---|---|
| IS HEALTH SURVEILANCE / MONTORING REQUIRED? | ☐ YES | ☒ NO | |
| IS EXPOSURE ADEQUATELY CONTROLLED? | ☒ YES | ☐ NO | |
| RISK RATING | ☐ HIGH | ☐ MEDIUM | ☒ LOW |
| **Issue Date:** 30/08/2023 | **Review Date:** 30/08/2023 | | |
| **Name:** David Separovich | **Signature:** *D Separovich* | | |

| | | |
|---|---|---|
| COSHH | ASSESSMENT NO: NTL033 | PWM UK |

| | |
|---|---|
| **Substance:**<br>COLD-LAY ASPHALT | **Supplier:** Tarmac<br>Ground Floor, T3 Trinity Park<br>Bickenhill Lane<br>Birmingham<br>B37 7ES<br>T 0800 917 8888<br>www.tarmac.com |
| **Site / Area:** Northern Rail Stations | **Task /Activity:** Filling trenches top layer and repairing existing asphalt surfaces. |
| **Method of Creation / Application / Use:** | Applied by trowel, shovel or pour straight from bag. Fill hole and compact for a solid smooth finish. |
| **Quantity Created / Used Per Shift / Day** | As mandated by task |
| **Length of Exposure Per Shift / Day** | 0 – 20 Mins ☐ 21 – 60 Mins ☐ 1 – 2 Hrs ☐ 3 – 5 Hrs ☐ Over 5 Hrs ☒ |
| **Existing Level of Ventilation** | Very Good ☐ Good ☒ Mediocre ☐ Poor ☐ N/A ☐ |

**CLASSIFICATION (state the category of danger)**

| | | |
|---|---|---|
|  ☐ **TOXIC** |  ☒ **HARMFUL OR IRRITANT** |  ☐ **FLAMMABLE OR HIGHLY FLAMMABLE** |
|  ☐ **CORROSIVE** |  ☐ **EXPLOSIVE** |  ☐ **OXIDISING** |
|  ☒ **RESPIRATORY SENSITISATION** |  ☐ **HAZARDOUS TO THE AQUATIC ENVIRONMENT** |  ☐ **COMPRESSED GAS** |

**HAZARD TYPE**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| ☐ **GAS** | ☒ **VAPOUR** | ☐ **MIST** | ☒ **FUME** | ☐ **DUST** | ☐ **LIQUID** | ☒ **SOLID** | ☒ **OTHER 2 Pack paste formula** |

**ROUTES OF EXPOSURE**

| | | | | |
|---|---|---|---|---|
| ☒ **INHALATION** | ☒ **SKIN** | ☒ **EYES** | ☐ **INGESTION** | ☐ **INJECTION** |

**Name the Hazardous Contents & State the Workplace Exposure Limits (WEL's) for each:**

| Hazardous Content: | Long Term Exposure Level (8hr TWA) | Short Term Exposure Level (15 mins) |
|---|---|---|
| Total Dust | 10mg/m3 | Not Applicable |
| Respirable Dust | 4mg/m3 | |
| Crystalline Silica | 0.1mg/m3 | |

## RISKS TO HEALTH FROM HAZARDS

**INHALATION:** Excessive inhalation of vapours, fumes, aerosols and mists may cause irritation of the respiratory tract. Inhalation of dust produced when drilling, cutting, planning or surface treating the hardened asphalt may cause respiratory system damage and disease.

**SKIN:** Exposure to asphalt may cause skin dryness, cracking or blistering. Prolonged contact with material may cause skin tumours or other irreversible skin damage. Contact with hot material may cause thermal burns.

**EYES:** Whilst contact eyes is unlikely, contact with hot asphalt may cause burns. Fine particles resulting from cutting, planning, drilling or carrying out surface treatment of hardened asphalt may scratch the surface of the eye, causing irritation and possible damage. Exposure to fumes may cause eye irritation.

**INGESTION:** Ingestion is very unlikely, but may be harmful if ingested in quantity

**INJECTION:** N/A

## ENVIRONMENTAL:

**Control Measures:** (*Do not refer to any PPE in this section*):
Prevent further spillage if safe to do so. Do not let product enter drains or watercourses and prevent from being deposited anywhere other than the intended placement site.

**Method For Cleaning Up**
Scrape up using mechanical methods. Bitumen may be removed from tools and machinery using proprietary bitumen remover, but ensure you refer to the products' safety datasheet before using. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.

Avoid skin contact. Avoid inhalation of fumes as far as possible. Do not eat, drink of smoke whilst handling. Fumes from hot material may cause irritation to eyes and respiratory tract. Do not heat the product and only use in open air. Keep away from sources of ignition.

## PERSONAL PROTECTIVE EQUIPMENT

| | | | |
|---|---|---|---|
| ☒ Dust Mask | ☐ Visor | ☒ Gloves<br>EN 374 Nitrile rubber (NBR) | ☒ Overalls |
| ☐ Respirator | ☒ Goggles / Safety Glasses<br>EN 166 1. F; EN 170 | ☒ Footwear | ☐ Other |

## FIRST AID MEASURES

**INHALATION:** Immediately remove to fresh air. If breathing difficulties are experienced, seek medical attention. If breathing has stopped, commence artificial resuscitation and seek medical attention immediately.

**SKIN:** Burns caused by contact with hot material should be cooled by immediately flushing with large amounts of cold water. Do not attempt to remove anything from the burn area unless required to allow breathing and do not attempt to peel set material from the skin. Seek medical attention

**EYES:** material is hot, apply the same measures as 'skin contact' above. If the material is cool, immediately and thoroughly irrigate with eye wash solution or clean water. If symptoms develop or persist, seek medical attention. Do not rub eyes, as the material is abrasive and may scratch the surface of the eye.

**INGESTION:** Remove to fresh air. If person is conscious, rinse out mouth and seek further medical attention. Never give anything by mouth to an unconscious person.

## FIRE PRECAUTIONS

Use media such as alcohol/aqueous foam, dry chemical, or carbon dioxide or water fog. Do not use direct water jets.
Cool affected containers with flooding quantities of water if safe to do so.

## STORAGE & TRANSPORT

**PRECAUTIONS FOR SAFE HANDLING:**

Avoid skin contact. Avoid inhalation of fumes as far as possible. Do not eat, drink of smoke whilst handling. Fumes from hot material may cause irritation to eyes and respiratory tract. Do not heat the product and only use in open air. Keep away from sources of ignition. No special requirements. The material may be delivered in bulk, or packed in bags or tubs. Store in a well-ventilated area and away from sources of heat and ignition.

## DISPOSAL (Including Empty and Contaminated Containers)

| ☐ Hazardous Waste | ☒ Skip | ☐ Return to stores | ☐ Return to Supplier | ☐ Other |
|---|---|---|---|---|

Hardened asphalt is classified as non-hazardous, inert waste. It can be readily recycled opportunities for doing so should be encouraged. Recycling or disposal must be carried out in accordance with the relevant waste regulations.

## AFTER CONTROL MEASURES

| | | | |
|---|---|---|---|
| IS HEALTH SURVEILANCE / MONTORING REQUIRED? | ☐ YES | ☒ NO | |
| IS EXPOSURE ADEQUATELY CONTROLLED? | ☒ YES | ☐ NO | |
| RISK RATING | ☐ HIGH | ☐ MEDIUM | ☒ LOW |

| | |
|---|---|
| **Issue Date:** 30/08/2023 | **Review Date:** 30/08/2023 |
| **Name:** David Separovich | **Signature:** *D Separovich* |

## 8.9 Appendix I – Risk Assessments

| Item | Activity | Hazards/Risks Identified | Risk Rating | | | Control Measures | Residual Risk | | | Responsibility | Monitoring Responsibility |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | L | S | RR | | L | S | RR | | |
| 1 | Working Hours | Fatigue/loss of concentration Injury / Major Accident | 4 | 3 | 12 | All personnel are to adhere to the following, to reduce the risk of fatigue<br>Work up to 40 hours a week<br>Minimum 15 minutes break after every 4.5hrs worked | 1 | 3 | 3 | PC Site Manager, Project manager, H&S Team | Ongoing by Project Manager |
| 2 | Access to site/worksite | Exposure to unknown hazards/risks | 5 | 4 | 20 | All personnel to be NRL & PWM UK inducted<br>All personnel to attend the Start of Shift briefing by the SPiC (PWM UK)<br>All personnel to use designated walkways/routes | 1 | 4 | 4 | PC Site Manager, Project manager, H&S Team | Ongoing by Project Manager |
| 3 | Drug and Alcohol Test | Random Drug and Alcohol Testing | 4 | 4 | 16 | All personnel to fully understand "Zero" tolerance of the use of D&A on site<br>To be made fully aware of consequences and dangers of the use of D&A on site<br>Make sure they are fit for work | 1 | 4 | 4 | PC Site Manager, Project manager, H&S Team | Ongoing by Project Manager |
| 4 | General Conditions | Adverse and inclement weather conditions /Self Injury / Fatality | 3 | 4 | 12 | All personnel to evaluate the works/worksite in the event of adverse or inclement weather<br>Follow any rules laid down by the PC (PWM UK) for this situation<br>Seek advice from supervisor/manager if still unsure | 1 | 4 | 4 | Site Operatives, Site SPiC | Ongoing by Project Manager |

| Item | Activity | Hazards/Risks Identified | Risk Rating | | | Control Measures | Residual Risk | | | Responsibility | Monitoring Responsibility |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | L | S | RR | | L | S | RR | | |
| 5 | Visiting Site | Unfamiliar with a construction site, unaware of site rules, unaware of dangers, hazards & risks, etc. | 5 | 4 | 20 | All personnel to be issued full 5 point PPE (boots, hi-vi top, hi-vi trousers, hard hat, gloves, glasses and headtorch (to be issued with other relevant items as required for areas visiting, i.e. ear defenders, RPE, etc.) & told to wear at all times on site<br>All personnel to attend the Start of Shift briefing by the SPiC (PWM UK)<br>Visitors must be escorted around site by the site Manager.<br>All personnel to be familiar with the emergency arrangements<br>All personnel to use designated walkways/routes | 1 | 4 | 4 | Site Operatives, Other contractors, Visitors to site, Site supervisor | Ongoing by Project Manager |
| 6 | Manual Handling & Manual Work | Physical Activities including carrying, stretching and lifting.<br>Handling Cement, asphalt and sand bags | 4 | 3 | 12 | All personnel to be trained in Manual Handling techniques<br>Manual Handling Risk Assessment to be carried out for the task<br>Bulky and unwieldy objects to be carried by 2 or more operatives<br>Ensure area is free from obstructions<br>Ensur regular breaks are taken to straighten the back / improve circulation<br>Use mechanical aids wherever possible Use protective gloves when lifting.<br>All staff to follow TILE (Task, Individual, Load, Environment) training<br>Only lift loads that the individual is comfortable with. If not, then ask for help.<br>Use specialist logistic company to move large or bulky equipment around site when station lifts are not in use and not possible to use trolleys. | 1 | 3 | 3 | Site Operatives, Other contractors, Site SPiC | Ongoing by Project Manager |

| Item | Activity | Hazards/Risks Identified | Risk Rating | | | Control Measures | Residual Risk | | | Responsibility | Monitoring Responsibility |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | L | S | RR | | L | S | RR | | |
| 7 | Using Test Equipment | Equipment striking/injury to personnel, other people & property/structures.<br>Personnel damaging equipment. | 4 | 5 | 20 | Comprehensive briefing of risks<br>All Staff and contractors to be trained and competent to set up & use equipment and work on the plant/appliance/equipment being tested/monitored<br>Plant and equipment to be safety checked prior to use and to be serviced regularly<br>inspection<br>records/certificates/calibration certs<br>Equipment to be in good condition and fit for purpose<br>Planning & permission of routes to take to get equipment to site<br>Demarcation of equipment where use is required by means of barriers & warning signage<br>Equipment to be stored safely after use | 1 | 5 | 5 | Site Operatives, Site SPiC | Ongoing by Project Manager |
| 8 | Using Test Equipment | Slips, Trips, Falls of equipment, materials &/or people | 4 | 5 | 20 | Prevent exposure to site conditions with use of warning barriers & signage<br>Good House Keeping being maintained at work site keeping loose items, etc. away from the test equipment<br>Ensure mandatory PPE are worn at all times | 1 | 5 | 5 | Site Operatives, Site SPiC | Ongoing by Project Manager |
| 9 | Using Test Equipment | Injury/harm due to nature of works | 4 | 5 | 20 | Only trained & competent persons to work on & access work area/equipment<br>Dynamic Risk Assessment to be carried out, if deviations from main RAMS<br>Correct PPE for the task | 1 | 5 | 5 | Site Operatives, Site SPiC | Ongoing by Project Manager |

| Item | Activity | Hazards/Risks Identified | Risk Rating | | | Control Measures | Residual Risk | | | Responsibility | Monitoring Responsibility |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | L | S | RR | | L | S | RR | | |
| 10 | Working with Electrical Plant/Equipment | Electric shock/Fire | 4 | 4 | 16 | All personnel working with electrical plant/equipment to be suitably trained and have experienced in working with the equipment<br>All electrical plant/equipment to have undergone an ISOLATION (by their AP) before being worked on<br>All electrical plant/equipment to be used to have valid PAT Inspection evidence (110v only)<br>All electrical plant/equipment/tools will be checked prior to use and will be insulated – any defective equip. will NOT be used and quarantined<br>Adequate PPE to be used | 1 | 4 | 4 | Site Operatives, Site SPiC | Ongoing by Project Manager |
| 10 | Working with Electrical Plant/Equipment | Hand Arm Vibration Syndrome | 4 | 4 | 16 | All personnel working with equipment to be suitably trained and have experienced in working with the equipment<br>Vibration Damping plant/equipment should be used,<br>Select the lowest vibration tool that is suitable and can do the work efficiently.<br>Limit the use of high-vibration tools wherever possible.<br>HAVS Calculator /register to be reveiws and exposure times monitored to ensure limits have not been exceeded.<br>Wear protective clothing when necessary to keep them warm and dry.<br>Gloves can be used to keep hands warm, but should not be relied upon to provide protection from vibration.<br>Holding tools as loosely as possible and in varying | 1 | 4 | 4 | Site Operatives, Site SPiC | Ongoing by Project Manager |
| 11 | Lone Working | Accident or Illness, Manual Handling injuries, | 3 | 4 | 12 | All lone working MUST where reasonably practicable be avoided and only for surveying no physical works permitted<br>Surveying Lone Working Buddy System process to be followed<br>Use only experienced / competent worker.<br>No work at heights. Medically fit | 1 | 4 | 4 | Site Operatives, Site SPiC | Ongoing by Project Manager |
| 12 | Mechanical | Contact with moving parts | 4 | 5 | 20 | All machinery to be electrically and mechanically isolated by an Authorised Person (AP), before works begin on equipment.<br>Trained & Competent persons to work on the equipment. | 1 | 5 | 5 | Site Operatives, Site SPiC | Ongoing by Project Manager |

| Item | Activity | Hazards/Risks Identified | Risk Rating | | | Control Measures | Residual Risk | | | Responsibility | Monitoring Responsibility |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | L | S | RR | | L | S | RR | | |
| 13 | Working at Height from Mobile Tower Scaffold | Falls from Height<br>Objects falling from height<br>Contact with objects (lateral & overhead)<br>Uneven surfaces Tower overturning Overloading, | 4 | 5 | 20 | ONLY GRP WaH Equipment MUST be used while working on or near the track.<br>Area to be barriered off using chapter 8 barriers.<br>Tower scaffold to be erected, altered, dismantled and inspected by PASMA trained operative in accordance with manufacturer's specifications.<br>Scaff-tag to be signed only by PASMA trained operatives.<br>To ensure stability the height of base ratio of a mobile scaffold tower must not exceed manufacturers" instruction or<br>3.5:1 outside a building. Stabilisers may be used to increase height to base ratio.<br>Tower to be properly braced to avoid overturning, wheels locked to avoid movement.<br>Exclusion zone to be set up around tower, working at heights signage to be applied.<br>Toe boards to be installed correctly. When mobile scaffold towers are being moved, they will be pushed from the base. No persons will be permitted to ride on the platform whilst being moved.<br>Access hatch to be closed at all times when in use.<br>Never climb the outside of the tower. Do not overreach.<br>Do not overload platforms.<br>Ensure tower is set up on firm and level ground. | 2 | 5 | 10 | PASMA Operative, Site SPiC | Ongoing by Project Manager |

| Item | Activity | Hazards/Risks Identified | Risk Rating | | | Control Measures | Residual Risk | | | Responsibility | Monitoring Responsibility |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | L | S | RR | | L | S | RR | | |
| 14 | Working at Height from Mobile Tower Scaffold | Falls from Height<br>Objects falling from height<br>Contact with objects (lateral & overhead)<br>Uneven surfaces Tower overturning Overloading, | 4 | 5 | 20 | ONLY GRP WaH Equipment MUST be used while working on or near the track.<br>Area to be barriered off using chapter 8 barriers.<br>Tower scaffold to be erected, altered, dismantled and inspected by PASMA trained operative in accordance with manufacturer's specifications.<br>Scaff-tag to be signed only by PASMA trained operatives.<br>To ensure stability the height of base ratio of a mobile scaffold tower must not exceed manufacturers" instruction or 3.5:1 outside a building. Stabilisers may be used to increase height to base ratio.<br>Tower to be properly braced to avoid overturning, wheels locked to avoid movement.<br>Exclusion zone to be set up around tower, working at heights signage to be applied.<br>Toe boards to be installed correctly.<br>When mobile scaffold towers are being moved, they will be pushed from the base. No persons will be permitted to ride on the platform whilst being moved.<br>Access hatch to be closed at all times when in use.<br>Never climb the outside of the tower. Do not overreach.<br>Do not overload platforms.<br>Ensure tower is set up on firm and level ground. | 2 | 5 | 10 | PASMA Operative, Site SPiC | Ongoing by Project Manager |
| 15 | Working at Height from Podium Steps | Falls from Height<br>Objects falling from height<br>Contact with objects (lateral & overhead) Uneven surfaces, | 4 | 5 | 20 | ONLY GRP WaH Equipment MUST be used while working on or near the track.<br>Podiums to be erected and inspected by the user prior to use and inspection tag signed by PASMA qualified and attached to the podium.<br>Podium wheels MUST be locked at all times when in use.<br>Exclusion zone to be set up below men working at heights.<br>Podium gate to be closed correctly.<br>Do not move podium while people are on it.<br>Never climb the outside of the podium.<br>Do not stand on the guard rail for extra reach.<br>Do not overreach.<br>Set up podium on an even surface. | 1 | 5 | 5 | PASMA Operative, Site SPiC | Ongoing by Project Manager |

| Item | Activity | Hazards/Risks Identified | Risk Rating | | | Control Measures | Residual Risk | | | Responsibility | Monitoring Responsibility |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | L | S | RR | | L | S | RR | | |
| 16 | Working at Height from Steps/Step Ladders | Falls from Height<br>Objects falling from height<br>Uneven surfaces<br>Contact with objects, | 5 | 5 | 25 | ONLY GRP WaH Equipment MUST be used while working on or near the track.<br>Use Scaffold towers or podium steps wherever possible.<br>Work from ladders / steps is a last resort, short duration / light work<br>Complete a Site-specific risk assessment.<br>Inspected for serviceability before use. Secured, tied or footed when erected.<br>Positioned ONLY on stable even ground.<br>Maintain three points of contact.<br>Only approved industrial steps and ladders.<br>Operatives to be aware of their surroundings and support the ladder from the opposite side of the step ladder where the works are taking place.<br>Exclusion zone to be set up below men working at heights.<br>Use a tool belt or secure tools with a lanyard.<br>No Lone working | 2 | 5 | 10 | Site operatives, Site SPiC | Ongoing by Project Manager |
| 17 | Working adjacent or above equipment (Assets) | Damage to equipment | 4 | 5 | 20 | POWRA to be carried out.<br>Use barriers & warning signage to create an exclusion zone<br>Treat all electrical wiring and Equipment as 'live' & Report any damaged/degraded/un-terminated wiring to the supervisor.<br>Place access equipment adequately to prevent any damage to equipment.<br>Provide asset protection where necessary to mitigate against any falling debris whilst working above. | 1 | 5 | 5 | Site operatives, Site SPiC | Ongoing by Project Manager |

| Item | Activity | Hazards/Risks Identified | Risk Rating | | | Control Measures | Residual Risk | | | Responsibility | Monitoring Responsibility |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | L | S | RR | | L | S | RR | | |
| 18 | Un- Lidding & lidding of Multicomp artment Trunking | Cable Damage/ Equipment Damage, Electric shock. | 4 | 4 | 16 | Cables to be checked for damage after removal of lid in case the turnbuckle has damaged the insulation, etc.<br>In areas where the trunking is full to compacity, Care must be taken whilst re lidding of the trunking system to avoid cable damage, extra care will be undertaking during the locking of any turn buckles this is to prevent the turn buckles catching any cables within the trunking and causing damage to the insulation.<br>All electrical plant/equipment to have undergone an ISOLATION (by their AP) before being worked on.<br>Adequate PPE to be used including RPE (FFP3) in case of excess dust content on top<br>All personnel working with electrical plant/equipment to be suitably trained and have experienced in working with the equipment<br>POWRA to be carried out | 1 | 4 | 4 | Site operatives, Site SPiC | Ongoing by Project Manager |
| 19 | Working ON or near the Track | Struck by a Train<br>Walking adjacent to/along the operational Railway<br>Working on or near the line.<br>Lone working<br>Working as part of a group<br>Death Serious injury | 5 | 5 | 25 | Only PRS/PTS certified staff to be used as a minimum standard.<br>Need for access at track level to be avoided where possible.<br>Network Rail PTS and other track competency training, and specification with the Rule Book / PTS Handbook relevant to the activity to be complied with at all times.<br>Use Approved Safe System of Work (SSOW) for rail work<br>Use approved walking routes. Access site via safe authorised accesses.<br>Pre-site desk study / planning including Hazard Directory and Sectional Appendix | 2 | 5 | 10 | Site operatives, Site SPiC/ES | Ongoing by Project Manager |

| Item | Activity | Hazards/Risks Identified | Risk Rating | | | Control Measures | Residual Risk | | | Responsibility | Monitoring Responsibility |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | L | S | RR | | L | S | RR | | |
| 20 | Working ON or near the Track within a possession | Struck by a Site Vehicle / plant /<br>on track machines, engineering trains<br>Working in possessions<br>Construction and work sites<br>Supervising contractors / site staff<br>Accessing sites through others works sites<br>Death Serious injury | 5 | 5 | 25 | Adopt ALARP method of risk minimisation.<br>Approved High Visibility Clothing to be worn at all times<br>Sign in to and get briefing for work sites with COSS or supervisor as required<br>Working only in accordance with training and RfLI rule book and only<br>Avoid entering areas where plant and machinery in operation<br>Keep clear of on-track and other plant and do not ride in or on machines or plant<br>Awareness and vigilance<br>Do not undertake any tasks that prevent you looking up and detecting<br>approaching plant or machines | | | | | |

| Item | Activity | Hazards/Risks Identified | Risk Rating | | | Control Measures | Residual Risk | | | Responsibility | Monitoring Responsibility |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | L | S | RR | | L | S | RR | | |
| 21 | Working ON or near the HV Overhead | Electrocution Coming directly into contact with,or objects you are carrying coming directly into contact with: AC Live Overhead Line Equipment (OHLE/ROC) DC Live traction rail – third or fourth rail Coming with 9ft or objects you are carting coming with 9ft of Live OHLE/ROC equipment | 5 | 5 | 25 | WORKING GROUP awareness<br>Assume the traction rail / OHLE/ROC are live at all times unless briefed otherwise<br>Staff to be suitably trained PRS/PTS (AC/DC or DCCR)<br>Network Rail PTS and other track competency training, and specification with the Rule Book / PTS Handbook relevant to the activity to be complied with at all times<br>Advance planning of access and possible obstructions<br>Use non-conductive levelling staff and other equipment approved for use on the railway<br>Carry objects horizontally with more than 1 person as required<br>Don't let anything come into contact with (or within 9ft of for OHLE/ROC) live electrification equipment or in contact with DC rail.<br>Works in proximity OHLE/ROC or DC rail to be completed in isolation under supervision of COSS in isolation.<br>Caution when climbing cuttings where OHLE/ROC present consider proximity to OHLE/ROC<br>Caution when working at height or above track level (e.g. culvert headwalls, bridges etc) where OHLE/ROC present consider proximity to OHLE/ROC<br>Do not lower anything from or lean over bridge overbridge parapets above | 2 | 5 | 10 | Site operatives, Site SPiC/ES | Ongoing by Project Manager |

| Item | Activity | Hazards/Risks Identified | Risk Rating | | | Control Measures | Residual Risk | | | Responsibility | Monitoring Responsibility |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | L | S | RR | | L | S | RR | | |
| 22 | Working with hand tools | Electricity<br>Trapping/entanglement<br>Sharp edges, moving parts<br>Hot surfaces<br>Noise, dust, flying particles<br>Poor maintenance<br>Lack of training | 4 | 3 | 12 | Ensure before using any tools or equipment you have adequate competence to use that particular toolsEnsure pre-use visual checks are carried out<br>Suitable eye protection must be used where foreseeable risk of eye injuries are present<br>Ensure the equipment is suitable for the task<br>Ensure any fitted guards are secure<br>Ensure correct PPE is worn<br>If noise levels are above 80--dB (A) ensure hearing protection is worn and others in the area are aware of the noise levels<br>All hand tools are properly maintained and used.<br>Tools to be 110V or battery powered where possible.<br>PAT to be carried out every 3 months. User to visually inspect equipment for damage prior to use.<br>Electric tools to be selected in preference to petrol or diesel run tools. Regular breaks are to be taken when using vibrating tools.<br>Hands to be kept warm during operations. Anti vibration gloves to be worn as necessary. LEV to be fitted where possible.<br>Damping down techniques to be used where LEV not possible.<br>Ensure that correct tools are supplied, are in good order and suitable for the task. Ensure operatives are instructed on safe use of equipment.<br>This will reduce risk of injury from incorrect tools and faulty equipment. | 1 | 3 | 3 | Site operatives, Site SPiC/ES | Ongoing by Project Manager |

| Item | Activity | Hazards/Risks Identified | Risk Rating | | | Control Measures | Residual Risk | | | Responsibility | Monitoring Responsibility |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | L | S | RR | | L | S | RR | | |
| 23 | Cutting/Grinding of Metal/Timber | Injuries from equipment<br>Flying debris<br>Noise<br>Creating Dust<br>Fire Risk | 3 | 4 | 12 | All operatives are trained in the safe use of equipment. Blade guards will be correctly set.<br>Suitable PPE to be worn for the substance/item during removal of waste products. Waste management of materials to be considered at all times. Correct use of skips and designated waste areas.<br>Dust masks and hearing protection to be worn as necessary. Will help reduce inhalation of dust and exposure to high levels of noise<br>Abrasive wheel training<br>Damping down or vacuum extraction<br>Ensure Fire point is positioned near to worksite.<br>If cutting/ gringing blades not 'Cold Cut Type' and creates sparks, the hot works permit process to be followed | 1 | 4 | 4 | Site operatives, Site SPiC/ES | Ongoing by Project Manager |
| 24 | Excavation of holes and trenches | Electrocution<br>Burns from electrical Arcing<br>Explosion or Aphyxia from gas leak<br>Flooding with water services<br>Contact with Sewage | 3 | 5 | 15 | Manual Handling assessment to be carried out for lifting of heavy/awkward loads. Lifting aids to be used where possible<br>All staff invoved to be full briefed before starting digging works<br>All burries services drawings to be made available onsite prior to starting work<br>Burried services plans are to be assumed as non-accurate plans.<br>Hand dug trial holes will be used to confirm locations, considering existing access chambers and manholes.<br>Line marking paint to be used to identify existing or presumed burried services.<br>All services to be presume live until proven otherwise<br>Services crossing excavations with be supported if require to prevent unwanted strain/stress<br>Servies buried in concrete will be isolated before breaking operations | 1 | 5 | 5 | Site operatives, Site SPiC/ES | Ongoing by Project Manager |

| Item | Activity | Hazards/Risks Identified | Risk Rating | | | Control Measures | Residual Risk | | | Responsibility | Monitoring Responsibility |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | L | S | RR | | L | S | RR | | |
| 25 | Mixing Cement/Concrete | Chemical Burns<br>contact with eyes and skin<br>Inhalation of Dust<br>Permanent skin disease | 3 | 4 | 12 | Avoiding exposure to cement powder by using pre-mixed concrete / mortar where possible<br>Using work methods that increases the distance between the worker and the substance such as longer handled tools.<br>Where dust mask when handling the dry product<br>Ensure operative clothing covers legs and arms.<br>If required to kneel into wet concrete, ensure trousers and boots are waterproof.<br>Wash concrete/cement off exposed skin as soon as possible.<br>Utilise barrier cream before and and moisturiser creme after exposure to cementitious products. | 1 | 4 | 4 | Site operatives, Site SPiC/ES | Ongoing by Project Manager |
| 26 | Laying cold-Lay Asphalt | Chemical Burns<br>Contact with eyes and skin<br>Permanent skin disease<br>Inhalation of Vapour | 3 | 4 | 12 | Contact with bituminous material affecting skin and eyes leading to burns, dermatitis and skin cancer.<br>Using work methods that increases the distance between the worker and the substance such as longer handled tools.<br>Ensure operative clothing covers legs and arms.<br>If required to kneel into wet concrete, ensure trousers and boots are waterproof.<br>Wash bitumous off exposed skin as soon as possible.<br>Utilise barrier cream before and and moisturiser creme after exposure to cementitious products.<br>All works carried open air. | 1 | 4 | 4 | Site operatives, Site SPiC/ES | Ongoing by Project Manager |