

Quality & Control Strategy – Ancoat’s Gardens

1 Quality & Control

MDB operate through robust quality procedures which are aligned to the business requirements and aim to meet with the ISO standard. The description of our process below is for the quality control of the onsite physical works, we do have quality procedures for all our business areas.

2 Control Procedures

MDB utilise Site Audit Pro Software to facilitate and simplify our Quality Management practices, monitor and improve the standards of quality being delivered on site and to drive defect reduction. The system utilises hand held tablets and smart phones to simplify the use, making it more portable to allow easier recording of data and photographic records when operating multiple devices, while maintaining a single place for storage of information.

Site Audit pro is set up during mobilisation by our site administrators and is available for use by the full project team as soon as the project becomes live. MDB provide training, support and Site audit pro access to all our relevant Sub-contractors and Clients teams to ensure the system is integrated throughout the full project lifecycle.

Live project data is fed into site audit pro throughout the project, this includes project team details, quality inspections, site records, reports, alerts and defect information. The Contracts Manager has overall accountability for our quality control and monitoring, whilst our site team embed the site Audit pro quality tool on a day to day basis, managing the capturing of all quality aspects within the system.

3 Quality Management

Inspections and Testing

The company operate a “Inspection and Test Plan” to allow the planning, recording and monitoring quality assurance (QA) across each element of work, ensuring compliance with the appropriate requirements and standards.

Set-up

Project Inspection and Testing requirements are agreed during the Mobilisation Phase by the Contracts Manager and the QA Trade Checklist is populated to capture the implementation of these requirements. This is controlled as part of the development of the Project Management Plan (PMP) throughout the project delivery by the Senior Project Manager.

This Inspection and Test Plan, once completed, will identify timing of inspection types and frequencies based on the construction programme. This Plan will be

compiled considering the level of risk associated with each package and the appropriate levels of inspections and tests required. Once completed, the quality inspections allow us to ensure works comply with the specified requirements and standards agreed by all parties.

These documents will be stored on the quality database or as part of the PMP file, which shall also accommodate hard copy testing certificates, inspections and commissioning reports, as necessary.

QA inspections will be carried out using trade specific QA check sheets. These inspections will be carried out by the Project team, on completion of an activity in accordance with our construction programme and in line with the scope of works, specifications and drawings.

There may be a need from time to time for the Client or their Representatives to inspect or witness activities. This will be undertaken using the same criteria as any inspection carried out within this plan and the Name, Position and Company Details of anyone inspecting the works will be added to the QA check sheet.

There are five main steps in the on-site quality management process:

1. Setting the standard with an agreed Benchmark in alignment and compliance with appropriate specifications, drawings, statutory regulations, other relevant documentation and to meet the client's needs and expectations;
2. Routinely reviewing and monitoring of works with quality inspections and trade to trade handovers;
3. Snagging;
4. Functionality checks; and
5. Handover

Off-site quality management plays a significant part of the final product finish and standard. As part of the production and development of the Inspection and testing plan within the mobilisation phase, there is consideration given to what elements of the build are to be manufactured off site i.e. pods, case goods, etc. and the levels and frequency of quality inspections that are required. The same principles that are used for on-site inspections will be adopted for inspections undertaken remotely from site.

Responsibilities

All personnel have a role to play in insuring a quality service and product is delivered on all projects, throughout the business. Individual responsibilities are set out within person centred R&R's, within the respective company processes and identified within the project specific responsibilities within the PMP, encouraging a level of quality that is a fundamental part of our product and culture, and not seen as a bolt-on to the end product.

In addition to the day to day monitoring and control of the quality processes by the project team, senior management will conduct regular reviews of our internal processes and compliance against these in relation to the quality standards on site. Furthermore, we welcome input and feedback from all stakeholders including the professional team and client team, as appropriate.

Quality Inspection and Non-Compliance Reports (NCR)

The site management team and the Sub-Contractor should undertake the inspection of the works jointly. However, the Sub-Contractors should inspect their own works prior to the joint inspection taking place. Any issues should be highlighted by the Site Management Team on the site audit pro Inspection System. If the works are found to be defective where costs or delays to following trades is likely to occur, then the Senior Project Manager will issue an NCR, which is completed jointly with the Sub-Contractor, agreeing actions and timescales. The timescales agreed should not affect the programme or follow on trades and should aim to minimise disruption as far as possible.

Should there be a need to issue an NCR this will be copied to the Sub-Contractor on-site and their Head Office, Manchester Design & Build Limited (MDB) Head Office, MDB Contracts Manager and the MDB Project QS.

Testing and Commissioning Process

To track and monitor the certification and project compliance, a testing and commissioning plan is developed which identifies what the requirements and expectations are throughout the project lifespan, such as due dates and responsibilities allowing us to track the progress to ensure timescales are met.

The Test and Commissioning Plan, whilst initially developed during mobilisation by the Contracts Manager, will be revisited and updated, with input from the M&E Contractor (upon appointment), Building Control (upon their initial engagement) and the Client (as soon as practically possible), therefore, ensuring all Testing and Commissioning has a systematic process and that upon project handover, the building systems perform according to the design intent and the owner's operational requirements, managed and carried out in-line with company best practice, contractual and legal requirements.

All Test Certificates identified within the Test and Commissioning Plan will be obtained, from specialist sub-contractors, prior to completion and placed into the Health and Safety File.

Snagging

The aim of the project is to hand over a snag free building with zero defects at project completion. To accomplish this the process needs to be managed correctly. Prior to undertaking an inspection, an area must be complete whether that is a room, a floor, a corridor etc. The snagging list will be collated electronically via the site audit pro software system. Lists can then be collated electronically or printed and once actioned can be signed off following checks by the project team. A snagging list should not include incomplete works.

To assist in the snagging close out, a completion programme will be developed that will sequence the works to allow time for completed areas to be inspected and then defects rectified. All areas will be snagged and then de-snagged prior to being offered to the client team for inspection. The snagging should be undertaken with the site management and sub- contractors present, and the design team should also be encouraged to be involved to prepare a single co-ordinated snagging list. Once an agreed list has been formulated this should be distributed via the site audit pro system to the relevant parties and must include responsibilities and dates for completion.

Following the snagging process, a functionality checklist should be completed for

each area. This is a checklist, which defines what elements within the property need to be checked to ensure they are working correctly i.e. hobs, extracts, WC flush etc.

Following completion of the project the iPad will be left on site and utilised to report ongoing issues throughout the defects period.

Appendix

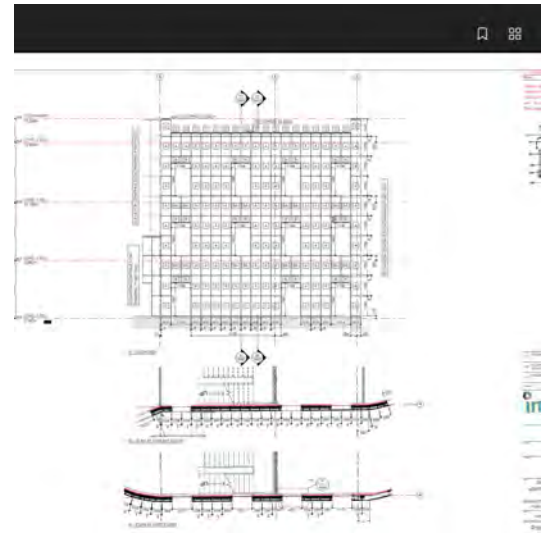
Sample QA inspection for Windows, Brickwork and Cladding subcontractors

P1087 (Sheet 17) North Building
Elevation 1002 (1)
P1087 Allam Diabetes Centre

Created: 8 Apr 2021

Last Updated: 12 Apr 2021

Prepared for: Zenith Developments



3

TESTS COMPLETED

100%

OVERALL SCORE

0

ACTIONS REQUIRED

RESPONSIBLE PERSON

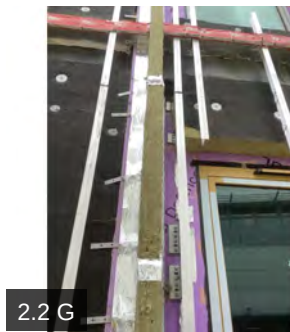
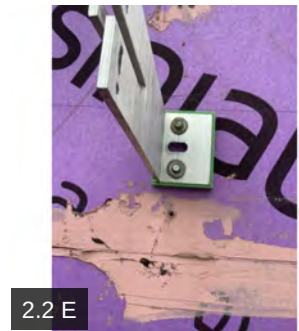
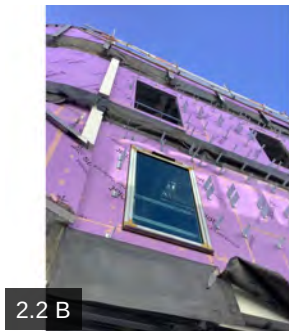
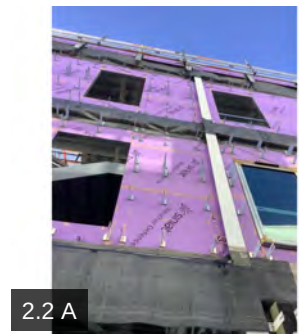
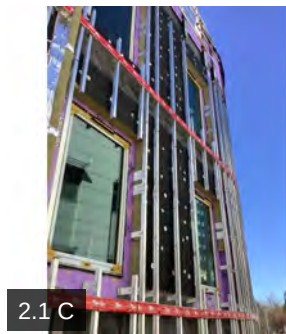
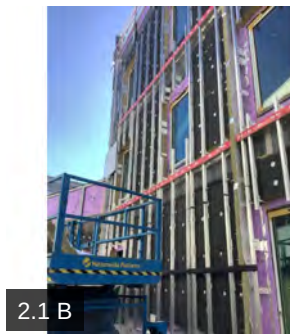
● Unassigned

ACTIONS ASSIGNED

0 (0%)

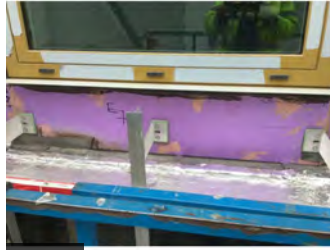


	RESULT	COMMENTS
TOP HATS		
1.1 Have the top hats been fixed correctly? (2nr. Fixings per stud) JT3 fixings	N/A	
1.2 On the faceted areas of the building, where the top hat has been cut, has the 2mm aluminium flat plate been fixed across the joints as per the strengthening detail? 4nr. Fixings per plate, 2nr. Into each top hat	N/A	
1.3 Has the inside of the top hat been packed with insulation?	N/A	
HELPING HAND BRACKETS		
2.1 Have the helping hand brackets been positioned correctly? (Max 600 centres)	Pass	
2.2 Have the brackets been fixed into the studs/ top hat correctly? (2nr fixings per single bracket, 4nr. fixings per double bracket) JT3 Fixings	Pass	





2.2 J



2.2 K

INSULATION

3.1 Has the insulation been fixed to the cement board correctly? (1nr. metal washer at the centre, 2nr. Polypropylene washers, 1 on each joint)

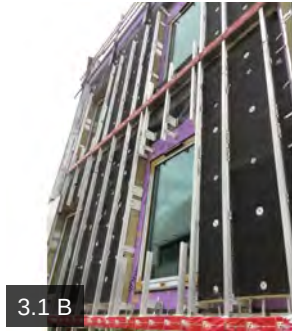
Pass

3.2 On the curved elevations, has a 'V' been cut into the back of the insulation to allow the board to bend?

N/A



3.1 A



3.1 B



3.1 C



3.1 D



3.1 E



3.1 F

INSTALLATION CHECKLIST & QUALITY ASSURANCE RECORD SHEETS

CURTAIN WALLING



4226 ANCOATS MANCHESTER DESIGN & BUILD LTD

LOCATION Elevation
BETWEEN GRIDLINES
LEVEL FRAMES

PHASE 1 HAND OVER - FRAME INSTALLATION AS INSPECTION PROCEDURES

DATE

BY QUEST SITE MANAGER / SUPERVISOR
TO M/C PACKAGE MANAGER
COMMENTS INSTALLER RESPONSIBLE

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PHASE 2 HAND OVER - PREP WORK AND GLAZING AS INSPECTION PROCEDURES

DATE

BY QUEST SITE MANAGER / SUPERVISOR
TO M/C PACKAGE MANAGER
COMMENTS INSTALLER RESPONSIBLE

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PHASE 3 HAND OVER - EPDM AS INSPECTION PROCEDURES

DATE

BY QUEST SITE MANAGER / SUPERVISOR
TO M/C PACKAGE MANAGER
COMMENTS INSTALLER RESPONSIBLE

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PHASE 4 HAND OVER - PRESSINGS, SILICONE, FINISHING AS INSPECTION PROCEDURES

DATE

BY QUEST SITE MANAGER / SUPERVISOR
TO M/C PACKAGE MANAGER
COMMENTS INSTALLER RESPONSIBLE

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ANCOATS, MANCHESTER

Produced by Quest Solutions

Q.A. INSPECTION PROCEDURES PHASE 1 (Curtain Walling)

Item	Test/Inspection Required	Frequency	Checked By
Surrounding structure in place	Check the supporting steelwork, SFS, cast in ACS channels and concrete structures are in place, level and plumb to form the correct size opening.	Every frame before installation	Jointly by site supervisor and the M.C.
Datums and grid offsets available	Check that the grid lines and the height datum's are marked on adjacent colums/structure and agreed with the main contractor	Every opening/frame position	Jointly by site supervisor and the M.C.
Hold point until the above has been checked			
Head and mid span brackets free to move	Inspect any head brackets for slotted holes and that they are not tight or fixed into the curtain walling mullion and so allowing movement	Every opening/frame position	Jointly by site supervisor and the installers fixing the frame
Mullion joint sealing	Check that the mullion Expansion and vertical stack joints are sealed as per the manual, with the correct sleeve insert.	Every mullion joint	Jointly by site supervisor and the installers fixing the frame
Frame level and plumb	Check the frame with a laser to ensure it is level and plumb in both directions	All frames during and after installation	The installer during installation and the supervisor prior to handover to the M.C.
Hilti Hus-HR8x55 fixings fitted correctly	Check the base plate of the bracket is firmly held by the fixings against the structure. No torque testing required.	All Hus fixings installed	The installer during installation and randomly by the supervisor prior to handover to the M.C.
All bolts and brackets fixed in position	Check that the number of brackets and bolts installed are as shown on the project drawings	All frames	The installer during installation and the supervisor prior to handover to the M.C.

Q.A. INSPECTION PROCEDURES PHASE 1 (Curtain Walling)

	Item	Test/Inspection Required	Frequency	Checked By
	All Tek screws checked for the correct installation	5.5mm Tek screws set to 5Nm.	All fixings installed	The installer during installation and randomly by the supervisor prior to handover to the M.C.
	No frame damage	Visibly examine the framing sections for scratches or damage	All frames	The installer during installation and by the supervisor prior to handover to the M.C.
	Q.A. Manager to check the above items during regular site inspection visit's			

Q.A. INSPECTION PROCEDURES PHASE 2 (Curtain Walling)

Item	Test/Inspection Required	Frequency	Checked By
Correct glass for the location	Check the glass specification on the label matches the specification on the drawing for the position it is being fitted.	Every frame before and during glass installation	Jointly by the site supervisor and the installers fixing the frame
Internal corner gaskets sealed	Check that the internal gaskets are sealed in the corners	Every opening/glass position	The installer prior to commencing glazing
Hold point until the above has been checked			
Glass setting blocks are fitted correctly	Check that the system supplied glass setting blocks are positioned as per the manual.	Every opening/glass position	The installer prior to commencing glazing
Glass free from damage	Visibly examine the glass for scratches or damage - See the legislation attached	Every DGU before and after installation	The installer during installation and by the supervisor prior to handover to the M.C.
Glass positioned centrally in the opening	Visibly check that the DGU has equal cover of 13mm around the unit and 14mm clearance from the glass to the mullion nosing.	All installed units	The installer during installation and randomly by the supervisor prior to handover to the M.C.
Gaskets are not twisted	Check that the internal gasket is straight and hasn't been trapped by the DGU when it was lowered into place.	All installed units	The installer during installation and randomly by the supervisor prior to handover to the M.C.
Transom end mouldings fitted	Check all the transom end mouldings are in place and are undamaged.	All transoms	The installer during installation and by the supervisor prior to handover to the M.C.
All thermal break fitted and at the correct length	Check that the thermal break is touching the transom end seals and forming a seal	All transoms	The installer during installation and by the supervisor prior to handover to the M.C.
Q.A. Manager to check the above items during regular site inspection visit's			

Q.A. INSPECTION PROCEDURES PHASE 3 (Curtain Walling)

Item	Test/Inspection Required	Frequency	Checked By
Weather conditions suitable	Check the temperature is above 5 degrees and the frame and substrate are dry	On commencement and at regular intervals	Jointly by the site supervisor and the installers fitting the EPDM
Hold point until the above has been checked			
Windliner board jointing tape removed	Before applying the EPDM adhesive to the surrounding Windliner board, remove the board jointing tape so that the membrane does not overlap it.	Every frame during EPDM installation	Jointly by the site supervisor and the installers fitting the EPDM
All joints are secure	Check the integrity of any joints.	Every frame during and after EPDM installation	The installer during installation and by the supervisor prior to handover to the M.C.
EPDM Continuous around the frame were possible	Check the EPDM is in one piece or has the minimum of joints the application allows	Every frame during and after EPDM installation	The installer during installation and by the supervisor prior to handover to the M.C.
Correct lapping of the EPDM 100mm on Primed concrete, Knauf windliner board, concrete block and brickwork. 25mm on steelwork, window and curtain wall frames. 50mm EPDM to EPDM.	Check the EPDM has sufficient lap onto the adjacent surfaces and any joints that have had to be introduced	Every frame during and after EPDM installation	The installer during installation and by the supervisor prior to handover to the M.C.
Correct primer per structure Mill & Coated Ali - 7750 Primer. Concrete - 2650 Primer. Sheathing Board - AFS Primer.	Ensure the primer used on the different substrates is the correct one recommended by ARBO the EPDM manufacturers. Adhesive to used Arbo SA	Every frame prior to EPDM installation	The installer during installation and by the supervisor prior to handover to the M.C.

Q.A. INSPECTION PROCEDURES PHASE 3 (Curtain Walling)

Item	Test/Inspection Required	Frequency	Checked By
EPDM is free from damage	Check the EPDM is intact and free from any site contaminations	Every frame during and after EPDM installation	The installer during installation and by the supervisor prior to handover to the M.C.
Q.A. Manager to check the above items during regular site inspection visit's			

Q.A. INSPECTION PROCEDURES PHASE 4 (Curtain Walling)

Item	Test/Inspection Required	Frequency	Checked By
Transom mouldings sealed	Check sufficient sealant has been applied to the transom end seals.	All frames	The installers fixing the frame
Hold point until the above has been checked			
Cills/Panels fitted and free from damage	Check the cills or panels are fitted, are the correct length and are undamaged	Every frame during and after installation	The installer during installation and by the supervisor prior to handover to the M.C.
All pressure plates fitted	Check all the pressure plates are fitted, are the correct length and the screws are torqued to 6Nm.	Every frame during and after installation	The installer during installation and by the supervisor prior to handover to the M.C.
All cappings fitted and free from damage	Check all the caps are fitted and undamaged and expansion gaps have been left at all joints. The verticals are the correct length and the horizontals are central between the verticals.	Every frame after installation	The installer during installation and by the supervisor prior to handover to the M.C.
Sealant applied all round the frame	Check that the perimeter seal (arbosil 1096) is continuous and has been smoothed out	Every frame after installation	The installer during installation and by the supervisor prior to handover to the M.C.
Protective tape removed	Remove the protective tape after handover, unless instructed by the main contractor to leave it on for their removal at a later date.	Every frame after installation	The installer after installation
Q.A. Manager to check the above items during regular site inspection visit's			

INSTALLATION CHECKLIST & QUALITY ASSURANCE SHEETS

THERMALLY BROKEN DOORS



4226 ANCOATS MANCHESTER DESIGN & BUILD LTD

LOCATION ELEVATION
LEVEL FRAMES

PHASE 1 HAND OVER - FRAME INSTALLATION AS INSPECTION PROCEDURES DATE
BY QUEST SITE MANAGER / SUPERVISOR
TO M/C PACKAGE MANAGER
COMMENTS INSTALLER RESPONSIBLE

PHASE 2 HAND OVER - PREP WORK AND GLAZING AS INSPECTION PROCEDURES DATE
BY QUEST SITE MANAGER / SUPERVISOR
TO M/C PACKAGE MANAGER
COMMENTS INSTALLER RESPONSIBLE

Q.A. INSPECTION PROCEDURES PHASE 1 (Thermally Broken Doors)

Item	Test/Inspection Required	Frequency	Checked By
Solid structure in place below the threshold	Check that concrete has been layed below the threshold and that it is cured. If not we cannot commence	Every frame before installation	Jointly by the site supervisor and the installers fixing the frame
Surrounding framing fixed in place	Check that the framing forming the opening is in place, fully fixed plumb and level	Every frame before installation	Jointly by the site supervisor and the installers fixing the frame
Hold point until the above has been checked			
Correct gasket and adapter in the curtain walling	Check the gasket and adapters in the curtain walling are the correct size so that the door frame is in line with the glazing	All frames during and after installation	The installer during installation and the supervisor prior to handover to the M.C.
Door hinge/pivot screws fully tightened	Ensure the bolts in the drive arm clamp are tight and anti shake washers have been fitted	All frames during and after installation	The installer during installation and the supervisor prior to handover to the M.C.
No frame damage	Visibly check the door and surround are not damaged	All frames during and after installation	The installer during installation and by the supervisor prior to handover to the M.C.
Threshold fixed down and bedded onto sealant	Ensure there is continuous sealant under the threshold and the threshold is securely fixed to the concrete below, without any movement	All frames during and after installation	The installer during installation and by the supervisor prior to handover to the M.C.
Doors open as indicated on the drawing	Check the door handings and swing are correct to the drawing	All transoms	The installer during installation and by the supervisor prior to handover to the M.C.
Q.A. Manager to check the above items during regular site inspection visit's			

Q.A. INSPECTION PROCEDURES PHASE 2 (Thermally Broken Doors into curtain walling)

Item	Test/Inspection Required	Frequency	Checked By
Correct glass for the location	Check the glass specification on the label matches the specification on the drawing for the position it is being fitted.	Every frame before and during glass installation	Jointly by the site supervisor and the installers fixing the frame
Hold point until the above has been checked			
Glass setting blocks are fitted correctly	Check that the system supplied glass setting blocks are positioned as per the manual	Every opening/glass position	The installer prior to commencing glazing
Glass free from damage	Visibly examine the glass for scratches or damage - Use GGF legislation	Every DGU before and after installation	The installer during installation and by the supervisor prior to handover to the M.C.
Glass labels removed	Check the glass label and the glue residue is removed only after the glass specification has been checked.	All installed units	The installer during installation and by the supervisor prior to handover to the M.C.
Glass positioned centrally in the doors	Visibly check that the DGU has equal cover around the unit and that the gaskets are not trapped by the DGU	All installed units	The installer during installation and randomly by the supervisor prior to handover to the M.C.
Doors swing freely within the opening	Manually and visibly assess the movement of the doors and adjust as required until the doors swing unrestricted to the closed position	All doors	The installer during installation and randomly by the supervisor prior to handover to the M.C.
Lock and handles operate freely and are undamaged	Manually operate all ironmongery to ensure it operates correctly and isn't damaged	All doors	The installer during installation and randomly by the supervisor prior to handover to the M.C.
Closers set to the correct closing speed	Monitor the door closing speed over several operations and adjust as required to set the speed to a suitable speed for the doors position	All doors	The installer during installation and randomly by the supervisor prior to handover to the M.C.
Flush bolts operate freely (pairs only)	Operate the flush bolts on the slave leaf (pairs of doors only) to check the operation is suitable	All doors	The installer during installation and by the supervisor prior to handover to the M.C.
Q.A. Manager to check the above items during regular site inspection visit's			

INSTALLATION CHECKLIST & QUALITY ASSURANCE SHEETS

WINDOWS



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LOCATION		Elevation	
BETWEEN GRIDLINES	Grids		
LEVEL		FRAMES	
PHASE 1 HAND OVER - FRAME INSTALLATION AS INSPECTION PROCEDURES		DATE	
BY		QUEST SITE MANAGER / SUPERVISOR	
TO		M/C PACKAGE MANAGER	
COMMENTS	INSTALLER RESPONSIBLE		

PHASE 2 HAND OVER - PREP WORK AND GLAZING AS INSPECTION PROCEDURES		DATE
BY		QUEST SITE MANAGER / SUPERVISOR
TO		M/C PACKAGE MANAGER
COMMENTS	INSTALLER RESPONSIBLE	

PHASE 3 HAND OVER - EPDM AS INSPECTION PROCEDURES		DATE
BY		QUEST SITE MANAGER / SUPERVISOR
TO		M/C PACKAGE MANAGER
COMMENTS	INSTALLER RESPONSIBLE	

PHASE 4 HAND OVER - PRESSINGS, SILICONE, FINISHING AS INSPECTION PROCEDURES		DATE
BY		QUEST SITE MANAGER / SUPERVISOR
TO		M/C PACKAGE MANAGER
COMMENTS	INSTALLER RESPONSIBLE	

ANCOATS MANCHESTER

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Issued 2021-7-26

Q.A. INSPECTION PROCEDURES PHASE 1 (Windows)

Item	Test/Inspection Required	Frequency	Checked By
Surrounding structure in place and adequate	Check the supporting structure is in place, undamaged and suitable for fixing into.	Every frame before installation	Jointly by site supervisor and the M.C.
Datums and frame positions agreed and available	Check that any grid lines/datums/frame positions are available.	Every opening/frame position	Jointly by site supervisor and the M.C.
Hold point until the above has been checked			
Correct fixings and lugs available	Check the fixings and lugs available on site are as detailed in the specification	Every frame before installation	Jointly by the site supervisor and the installers fixing the frame
Fixings/lugs at the correct centres. 100mm from the corners and the mullions/transoms.	Check the lugs are positioned as the centres noted	Every frame during installation	Jointly by the site supervisor and the installers fixing the frame
Fixings/lugs at the correct centres. 400mm Maximum centres inbetween	Check the lugs are positioned as the centres noted	Every frame during installation	Jointly by the site supervisor and the installers fixing the frame
Pre tension concrete zone	Check that no fixings are less than 100mm from the pre tension concrete channel edge.	Every frame before installation	Jointly by the site supervisor and the installers fixing the frame
Frames lined and levelled	Check for Plumb, Level and offsets against the site grids	Every frame before installation	Jointly by the site supervisor and the installers fixing the frame
No frame damage	Visibly examine the frame sections for scratches or damage	All frames	The installer during installation and by the supervisor prior to handover to the M.C.
All perimeter fixings in place	Check all the lugs are fully fixed with the correct fixing	Every frame during and after installation	The installer during installation and by the supervisor prior to handover to the M.C.

Q.A. INSPECTION PROCEDURES PHASE 2 (Windows)

Item	Test/Inspection Required		Frequency	Checked By
1	Correct glass for the location	Check the glass specification on the label matches the specification on the drawing for the position it is being fitted.	Every frame before and during glass installation	Jointly by the site supervisor and the installers fixing the frame
2	Correct glazing support trays fitted	Check the glazing trays fitted are the system supplied type and fitted per as the manual	Every frame before and during glass installation	Jointly by the site supervisor and the installers fixing the frame
Hold point until the above has been checked				
3	Packers support both panes on the DGU	Check both panes of the DGU are supported by the glass packers and the glazing support	Every DGU before and during glass installation	The installer during installation and by the supervisor prior to handover to the M.C.
4	Glass free from damage	Visibly examine the glass for scratches or damage - See the legislation attached	Every DGU before and after installation	The installer during installation and by the supervisor prior to handover to the M.C.
5	Opening vents operate freely	Check the vent opens and closes without catching, the handle locks and the pins fully locate.	Every frame after gasketing has been completed	The installer during installation and by the supervisor prior to handover to the M.C.
6	Glass labels removed	Check the glass label and the glue residue is removed only after the glass specification has been checked.	Every DGU before after installation	The installer during installation and by the supervisor prior to handover to the M.C.
7	Glazing beads fitted straight	Check the glazing beads are fully engaged and not twisted	Every frame after gasketing has been completed	The installer during installation and by the supervisor prior to handover to the M.C.
8	Wedge gasket installed the correct length and without ripples	Check the wedge gasket has been installed with an allowance for shrinkage and smoothed out against the frame	Every frame after gasketing has been completed	The installer during installation and by the supervisor prior to handover to the M.C.

Q.A. INSPECTION PROCEDURES PHASE 3 (Windows)

Item	Test/Inspection Required	Frequency	Checked By
Weather conditions suitable	Check the temperature is above 5 degrees and the frame and substrate are dry	commencement and at regular intervals	Jointly by the site supervisor and the installers fitting the EPDM
Hold point until the above has been checked			
Windliner board jointing tape removed	Before applying the EPDM adhesive to the surrounding Windliner board, remove the board jointing tape so that the membrane does not overlap it.	Every frame during EPDM installation	Jointly by the site supervisor and the installers fitting the EPDM
EPDM Continuous around the frame were possible	Check the EPDM is in one piece or has the minimum of joints the application allows	Every frame during and after EPDM installation	The installer during installation and by the supervisor prior to handover to the M.C.
Correct lapping of the EPDM 100mm on Primed concrete, Knauf windliner board, concrete block and brickwork. 25mm on steelwork, window and curtain wall frames. 50mm EPDM to EPDM.	Check the EPDM has sufficient lap onto the adjacent surfaces and any joints that have had to be introduced	Every frame during and after EPDM installation	The installer during installation and by the supervisor prior to handover to the M.C.
Correct primer per structure Permaguard F protection layer - 925. PermaTec Ecowrap hot melt waterproofing compound - 925. Mill & Coated Ali - 7750 Primer. Concrete - 2650 Primer. Sheathing Board - AFS Primer.	Ensure the primer used on the different substrates is the correct one recommended by ARBO the EPDM manufacturers. Adhesive to used Arbo SA	Every frame prior to EPDM installation	The installer during installation and by the supervisor prior to handover to the M.C.

Item	Test/Inspection Required	Frequency	Checked By
All joints are secure	Check the integrity of any joints.	Every frame during and after EPDM installation	The installer during installation and by the supervisor prior to handover to the M.C.
Arbo terminator strip fitted	Check the 18 x 3mm Arbo terminator strip has been fitted at the head and cill where the cladding carrier flashing is not required. Check the EPDM and the strips are bedded on sufficient Arbo sealant and the fixings are a minimum of 25mm from the ends, 250mm centres and all the heads sealed over.	Every frame that does not have a cladding carrier flashing fitted.	The installer during installation and by the supervisor prior to handover to the M.C.
Cladding carrier flashing fitted	Check the cladding carrier flashing has been fitted where required. Check the EPDM and the flashings are bedded on sufficient Arbo sealant and the fixings are a minimum of 25mm from the ends, 250mm centres and all the heads sealed over.	Every frame that has a cladding carrier flashing fitted.	The installer during installation and by the supervisor prior to handover to the M.C.
EPDM is free from damage	Check the EPDM is intact and free from any site contaminations	Every frame during and after EPDM installation	The installer during installation and by the supervisor prior to handover to the M.C.

Q.A. INSPECTION PROCEDURES PHASE 4 (Windows)

Item	Test/Inspection Required	Frequency	Checked By
Cills fitted were required	Check the cills are fitted, are the correct length, the correct projection and are undamaged	Every frame during and after installation	The installer during installation and by the supervisor prior to handover to the M.C.
Cill fixing screws touched up	Check the cill fixing screws have had the heads painted in a coordinating colour	Every frame during and after installation	The installer during installation and by the supervisor prior to handover to the M.C.
Opening vents restricted	Check the opening restrictor is fitted and set to the correct opening dimension.	Every frame after installation	The installer after installation and by the supervisor prior to handover to the M.C.
Wedge gaskets even and fully located	Check the wedge gaskets are inserted fully and smoothed out	Every frame after installation	The installer after installation and by the supervisor prior to handover to the M.C.
Perimeter tolerances are not excessive	Check the perimeter tolerances will allow for a complete seal	Every frame after installation	The installer during installation and by the supervisor prior to handover to the M.C.
Sealant applied all round the frame	Check that the perimeter seal is continuous and has been smoothed out	Every frame after installation	The installer during installation and by the supervisor prior to handover to the M.C.
Protective tape removed	Remove the protective tape after handover, unless instructed by the main contractor to leave it on for their removal at a later date.	Every frame after installation	The installer after installation

Activity Inspection & Test Plan					
Project:	Queens Street	Contract No.:	6036	Created By:	B.Douglas
		Date:	02.03.2021		
Description of activity	State the work to which this applies MASONRY – East Elevation Copperworks GL A-G				
Name of Contractor	DOMIS Construction LTD				
Name and position of Kinlan Brickwork Supervisor (s)	Ben Douglas, Tony Delaney & Matthew Lewis				
Agreed for use by Kinlan Brickwork – Name:	Ben Douglas	Date:	02/03/2021	Kinlan Brickwork person assigned to manage this activity	Tony Delaney
Definitions of Inspection frequency: 100% = There needs to be documentary evidence that every occurrence of that item has been inspected by that party. 10% = Documentary evidence required that overall 1 in 10 of the occurrences have been checked (similar for any other percentage) H = Hold Point means no work on that specific element can be continued until check is carried out by the specified party. S = Surveillance means that note is taken of correctness of item during routine visits. W = Witness means a test carried out in the presence of the particular party (this can be followed by a percentage if not all such tests need to be witnessed)					

Stage	What needs checking	What is the requirement for a) workmanship b) materials	How it is carried out	Kinlan Brickwork	M/C	Party 3 E.g. CoW		e.g. Checksheet, Test Certificates,
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Activity Element		Acceptance Criteria	Checking Procedure	Frequency of Test/Check				Verification Document
				Kinlan Brickwork	DOMIS	CoW		
Material Compliance	Mortar	Below DPC – Group 2 (M6) Above DPC – Group 3 (M4) Tarmac Y14 Charcoal	Prism results from supplier		100			
	DPC	Product – Metz Cavity Tray	Delivery Note defines specification	100	100			Site Specification
	Insulation	Product – 100mm Rockwool Duo Slab	Delivery Note defines specification Visual for transport damage	100	100			Site Specification
	Cavity Fire Barriers	Product (s) 1. Corofil C450 – FR120 2. Corofil RSB60 – FR60	Delivery Note defines specification	100	100			Site Specification
	Ties	Product (s) 1. Ancon ST1 Wall ties 2. Wincro WTSC27 Channel ties 3. Debonded SPE 200mm ties 4. Vista WPTC Windpost ties 5. Vista WPT2 Windpost ties 6. Ancon VIR Head restraint ties	Delivery Note defines specification	100	100			Site Specification
	Bricks	Product – Wienerberger Abbeydale Red Multi	Delivery Note defines specification Visual for transport damage	100	100			Site Specification
	Blocks	Product – Blocks 140mm	Delivery Note defines specification	100	100			Site Specification
	Masonry Support	Product – Wincro	Delivery Note defines specification	100	100			Site Specification

Activity Element		Acceptance Criteria	Checking Procedure	Frequency of Test/Check				Verification Document
				Kinlan Brickwork	DOMIS	CoW		
Construction Compliance	Masonry up to DPC.	- Facing brickwork commenced 150mm below finished ground level. - Brickwork built to the correct DPC height set out by engineer (DOMIS) - Class 2 (M6) mortar. - Masonry built to horizontal and vertical gauge - Bed & cross mortar joints are filled - Frame Cramp ties at 600mm horizontal centres. - Cavity insulation retained tight to inner leaf. - Cavity fill correctly shaped to provide a smooth fillet sloping toward the outer leaf. - Weepholes at 450mm horizontal centres. - Coring holes and hessian provided above cavity fill. - Masonry protected	Tape & Visual inspection	100 & H.	H			QA File on site Kinlan Bolster App
	DPC – Metz Cavity Tray	- Laid on a thin bed of mortar. - Metz Tray covers the full width of the outer leaf. - Metz self adhesive tape is used to adhere to the concrete block. - Metz tray joints and edges are sealed with metz sealant - Onsite formed corners are formed with bending machine and mechanically fixed with stainless steel pop rivets. - Minimum 100 mm lap at joints. - DPC level installed a minimum 150mm above ground level. - DPC raised at door openings when necessary	Visual Inspection	100 & H.	H			QA File on site Kinlan Bolster App
	GF – 1st Floor of Masonry. Blockwork inner leaf Brickwork outer leaf Brickwork outer leaf not	<u>Blockwork</u> - Class 3 (M4) mortar- Y14 Tarmac - Internal block walls in their temporary state are secure. - Blockwork built to the correct sequence to prevent free standing blockwork pillars. - All internal walls built together to prevent the risk	Visual Inspection.	100 & H	H			QA File on site Kinlan Bolster App

Activity Element		Acceptance Criteria	Checking Procedure	Frequency of Test/Check				Verification Document
				Kinlan Brickwork	DOMIS	CoW		
	walled higher than the fixed cavity insulation on the inner leaf.	of collapse. - Blockwork built to the correct horizontal and vertical gauge. - Opening formed at correct sizes, plumb and square. - Lintels provided with correct and full bearing. - Movement joints are positioned as detailed (or every 6m). - Windposts installed where necessary to the structural engineers specification with all ties to blockwork and brickwork installed at 225mm CC vertically. - All blockwork nibs of less than 450mm are fully bonded to main wall. - Bed joint reinforcement is built in as detailed, correct width and bedded. - Fair faced blockwork jointed bucket handle and brushed. - Blockwork protected. - Area left clean, tidy and free from trip hazards Brickwork - Class 3 (M4) mortar- Y14 Tarmac - Brickwork built to horizontal and vertical gauge. - Mortar bed and cross joints formed full and solid. - Brickwork recess pointed 5-6mm using a chariot. - Brickwork built vertically plumb and to correct line and level. - Openings formed correct size, plumb and square. - Ancon SP1 300mm Cavity wall ties installed from blockwork inner leaf at 600mm horizontally and 450mm vertically with 50mm minimum embedment into the brickwork outer leaf. 100mm Rockwool Duoslab installed with Tyvek firecurb housewrap encapsulating the insulation - Drips to cavity ties in centre of clear cavity pointing downwards. - All cavity ties level or sloping slightly towards the						

Activity Element		Acceptance Criteria	Checking Procedure	Frequency of Test/Check				Verification Document
				Kinlan Brickwork	DOMIS	CoW		
		brickwork outer leaf. - All cavity ties clear of mortar droppings. - Minimum 50mm clear cavity provided. - Vertical DPC should be in one continuous piece wherever possible. Any laps should be at least 100mm with the uppermost piece outermost. - Vertical DPC projecting 25mm beyond the edge of the opening. - Hessian at base of cavity rotated to remove mortar droppings. - Movement joints formed plumb, constant width and free from mortar – VISTA SPE 200mm ties used with debonding sleeves - Pointing bucket handle finished & brushed. - All pointing uniform and constant in appearance. - Cross joints vertically plumb at every fourth brick along the length of the wall. - All cuts to the brickwork outer leaf cut with masonry saw (off site). - All cuts must be constructed half bond. – 50mm minimum. - Brickwork adequately protected. - Area left clean, tidy and free from trip hazards.						
	Masonry Support (MS) Angles (where required to all levels)	- Line and level of support angle is correct provided by DOMIS - Concrete slab survey information available to determine if shimming is required - A minimum 2/3rds bearing has been provided for the masonry outer leaf seated on the support angle. - Only the approved shims have been used with the masonry support system giving support to the full height of the vertical bracket - Any shims used are positioned over the fixing bolt to stop individual shims from moving. - Fixing bolts are the correct length - a minimum of three threads visible.	Visual Inspection.& Witness	100,H & W	100, H & W			QA File on site Kinlan Bolster App

Activity Element		Acceptance Criteria	Checking Procedure	Frequency of Test/Check				Verification Document
				Kinlan Brickwork	DOMIS	CoW		
		- All fixing bolts are torque to the manufacturer's recommendations using a certified torque and sprayed to denote that they have been checked. - Ensure that any shimming does not exceed the maximum specified – 12mm or the outside diameter of the fixing bolt - Cavity ties are provided within 225mm, above and below the support angle and at 450mm maximum horizontal centres. - Masonry support to be installed in advance of brickwork - Pistol bricks set on MS to allow time to go off before the brickwork lift below reaches level. - On-site plumb lines from MS above to below as built brickwork visible on site.						
	1st floor and above Masonry panels into concrete & SFS Brickwork outer leaf. SFS & Concrete inner leaf	<u>Brickwork</u> - Class 3 (M4) mortar- Y14 Tarmac - Brickwork built to horizontal and vertical gauge working to MS installed above. - Mortar bed and cross joints formed full and solid. - Brickwork recess pointed 5-6mm using a chariot. - Brickwork built vertically plumb and to correct line and level working to MS installed above. 100mm Rockwool Duoslab installed with Tyvek firecurb housewrap encapsulating the insulation - Wincro 25/14 channels installed at 600mm horizontally following SFS studs and within 225mm to all window/door jambs. - Self drilling screws into concrete and SFS will be installed @ 225mm CC with compression sleeves. - Wincro WTSC27 Channels ties installed within accordance to the manufactures guidance following REN Masonry Facade ties. - All single leaf lintels bedded in mortar. - All single leaf lintels in the brickwork outer leaf supported for the full length of the lintel until the	Visual Inspection	100	S			QA File on site Kinlan Bolster App

Activity Element		Acceptance Criteria	Checking Procedure	Frequency of Test/Check				Verification Document
				<i>Kinlan Brickwork</i>	DOMIS	CoW		
		masonry above the opening has set hard. • Drips to cavity ties in centre of clear cavity pointing downwards. • All cavity ties level or sloping slightly towards the brickwork outer leaf. • All cavity ties clear of mortar droppings. • Minimum 50mm clear cavity provided. • Vertical DPC should be in one continuous piece wherever possible. Any laps should be at least 100mm with the uppermost piece outermost. • Vertical DPC projecting 25mm beyond the edge of the opening. • Hessian at base of cavity rotated to remove mortar droppings. • Movement joints formed plumb, constant width and free from mortar – Wincro WTP3P 250mm ties used with debonding sleeve on one side maintaining a 10mm gap at the end of the sleeve to allow for expansion. • All pointing uniform and constant in appearance. • Cross joints vertically plumb at every fourth brick along the length of the wall. • All cuts to the brickwork outer leaf cut with masonry saw (off site). • All cuts must be constructed half bond. – 50mm minimum. • Brickwork adequately protected. • Area left clean, tidy and free from trip hazards.						
	DPC Cavity trays - Metz	• Metz cavity tray laid on a thin bed of mortar. • Metz cavity tray covers full width of brickwork outer leaf. • Metz cavity tray supported across the cavity to prevent it from sagging by mechanically fixing back to structure with stainless steel fixings • Metz cavity tray stepped down or falling across the cavity at least 150mm. • Metz cavity tray extends at least 150mm beyond	Visual Inspection	100 & H	10			QA File on site Kinlan Bolster App

Activity Element		Acceptance Criteria	Checking Procedure	Frequency of Test/Check				Verification Document
				Kinlan Brickwork	DOMIS	CoW		
		cavity lintels and stop ended into window reveals - Metz cavity tray lapped at least 100mm and sealed at all joints with metz sealant - External corners bent and formed on site and mechanically fixed with stainless steel pop rivets. - Coring holes and hessian provided above metz cavity tray. - Weepholes provided at 450mm maximum centres above DPC cavity tray.						
	Cavity Fire Barriers. Vertical C450 – FR120 Horizontal RSB120 – FR 120	- The fire barrier is compressed between the inner and outer skin with no gaps. - The cavity fire barrier is compressed back to the building by multipurpose brackets which are mechanically fixed in accordance with the manufactures installation - A horizontal metz tray is provided above any horizontal fire barrier to protect	Visual Inspection & Witness	100 & W	100 & W			QA File on site Kinlan Bolster App
Final Acceptance and test		<u>Checked and agreed by all parties</u>	<u>As requirements above</u>	<u>Name & sign:-</u>	<u>Name & sign:-</u>	<u>Name & sign:-</u>		
	<u>Hold Points as below</u>							
	Substructures	Checked and agreed by DOMIS and Kinlan	As requirements above					QA File on site Kinlan Bolster App
	Superstructures	Checked and agreed by DOMIS and Kinlan	As requirements above					QA File on site Kinlan Bolster App
	Masonry Support	Checked and agreed by DOMIS and Kinlan	As requirements above					QA File on site Kinlan Bolster App

