

Halliday Meecham Architects Ltd

The Grand

The Grand Cladding Remediation

10-12-2024

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C20 Demolition

General requirements

120 Extent of deconstruction/ demolition

1. General: Subject to retention requirements specified elsewhere, deconstruct/ demolish structures down to SFS zone .

150 Features to be retained

1. General: Keep in place and protect the following: Where ever possible the existing facing masonry should be carefully removed set aside and stored ready for replacement after the fire remediation works are complete.

Services affected by deconstruction/ demolition

210 Services regulations

1. Work carried out to or affecting new and/ or existing services: Carry out in accordance with the byelaws and/ or regulations of the relevant Statutory Authority.

220 Location of services

1. Services affected by deconstruction/ demolition work: Locate and mark positions.
2. Mains services marking: Arrange with the appropriate authorities for services to be located and marked.
 - 2.1. Marking standard: In accordance with National Joint Utilities Group 'Guidelines on the positioning and colour coding of underground utilities' apparatus'.

230 Services disconnection arranged by contractor

1. General: Arrange with the appropriate authorities for disconnection of services and removal of fittings and equipment owned by those authorities prior to starting deconstruction/ demolition.

260 Service bypass connections

1. General: Provide as necessary to maintain continuity of services to occupied areas of the site on which the deconstruction/ demolition is taking place and to adjoining sites/ properties.
2. Minimum notice to adjoining owners and all affected occupiers: 72 hours, if shutdown is necessary during changeover.

270 Services to be retained

1. Damage to services: Give notice, and notify relevant service authorities and/ or owner/ occupier regarding damage arising from deconstruction/ demolition.
2. Repairs to services: Complete as directed, and to the satisfaction of the service authority or owner.

Deconstruction/ demolition work

310 Workmanship

1. Standard: Demolish structures in accordance with BS 6187.
2. Operatives
 - 2.1. Appropriately skilled and experienced for the type of work.
 - 2.2. Holding, or in training to obtain, relevant CITB Certificates of Competence.

3. **Site staff responsible for supervision and control of work:** Experienced in the assessment of risks involved and methods of deconstruction/ demolition to be used.

320 Gas or vapour risks

1. **Precautions:** Prevent fire and/ or explosion caused by gas and/ or vapour from tanks, pipes, etc.

330 Dust control

1. **General:** Reduce airborne dust by periodically spraying deconstruction/ demolition works with an appropriate wetting agent. Keep public roadways and footpaths clear of mud and debris.
2. **Lead dust:** Submit method statement for control, containment and clean-up regimes.

340 Health hazards

1. **Precautions:** Protect site operatives and general public from hazards associated with vibration, dangerous fumes and dust arising during the course of the Works.

350 Adjoining property

1. **Temporary support and protection:** Provide. Maintain and alter, as necessary, as work proceeds. Do not leave unnecessary or unstable projections.
2. **Defects:** Report immediately on discovery.
3. **Damage:** Minimize. Repair promptly to ensure safety, stability, weather protection and security.
4. **Support to foundations:** Do not disturb.

360 Structures to be retained

1. **Extent:** SFS sub-structure to penthouses
2. **Parts which are to be kept in place:** Protect.
3. **Interface between retained structures and deconstruction/ demolition:** Cut away and strip out with care to minimize making good.

370 Partly demolished structures

1. **General:** Leave in a stable condition, with adequate temporary support at each stage to prevent risk of uncontrolled collapse. Make secure outside working hours.
2. **Temporary works:** Prevent overloading due to debris.
3. **Access:** Prevent access by unauthorized persons.

380 Dangerous openings

1. **General:** Provide guarding at all times, including outside of working hours. Illuminate during hours of darkness.
2. **Access:** Prevent access by unauthorized persons.

391 Asbestos-containing materials – unknown occurrences

1. **Discovery:** Give notice immediately of suspected asbestos-containing materials when discovered during deconstruction/ demolition work. Avoid disturbing such materials.
2. **Removal:** Submit statutory risk assessments and details of proposed methods for safe removal.

410 Unforeseen hazards

1. **Discovery:** Give notice immediately when hazards such as unrecorded voids, tanks, chemicals, are discovered during deconstruction/ demolition.
2. **Removal:** Submit details of proposed methods for filling, removal, etc.

450 Site condition at completion

1. Debris: Clear away and leave the site in a tidy condition.
2. Other requirements: N/A

Materials arising

510 Contractor's property

1. Components and materials arising from the deconstruction/ demolition work: Property of the Contractor except where otherwise provided.
2. Action: Remove from site as work proceeds where not to be reused or recycled for site use.

520 Recycled materials

1. Materials arising from deconstruction/ demolition work: Can be recycled or reused elsewhere in the project, subject to compliance with the appropriate specification and in accordance with any site waste management plan.
2. Evidence of compliance: Submit full details and supporting documentation.
 - 2.1. Verification: Allow adequate time in programme for verification of compliance.

Ω End of Section

H74

Zinc strip/ sheet fully supported roof and wall coverings/ flashings

Types of zinc work

130 Zinc sheet fully supported wall covering

1. Description: REPLACEMENT CLADDING AT MANSARD LEVEL
2. Covering system: VMZINC or Rheinzink - Single lock standing seam cladding (horizontal or vertical) for vertical walls and soffits

VM Zinc
Collier House Mead Lane
Hertford Hertfordshire
SG13 7AX
Phone: 01992 921 300
3. Fire performance
 - 3.1. Wall covering: As clause 201
 - 3.2. Inner lining: As clause 203
 - 3.3. Cavity fire barriers: As clause 204
 - 3.4. Insulation: Existing retained
4. Insurance and warranties: As clause 205
5. Air and vapour control layer: Existing retained
6. Sheathing: As K11/485
7. Membrane: As P10/320
8. Insulation: Non required
9. Substrate: 0.7mm min galvanised steel deck fixed to a metal framing system. The galvanised steel deck must have dimensions, allowing clips to be attached at the required spacings. The galvanised steel deck can only be used on vertical surfaces. For all surfaces such as sills, parapets, etc the substrate must be continuous. The metal framing system, should create a minimum 38mm vented airspace, between the steel deck and the insulation. The galvanised steel deck and cladding rails should all be A1 or A2 according to EN13501-1
Metal framing system fixed back to 15 mm cement particle board (as K11/585) on existing SFS
 - 9.1. Preparation: Make good, as clause 620
10. Sheet underlay: Not required
11. Zinc
 - 11.1. Type: Zinc-titanium-copper alloy: To BS EN 501 and BS EN 988
 - 11.2. Thickness: 0.8mm
 - 11.3. Finish: Natural to match existing
 - 11.4. Manufacturer: VMZINC Collier House Mead Lane Hertford Herts SG13 7AX Tel: 01992 822 288 Fax: 01992 584 460
12. Vertical joints: Standing seams
13. Spacing: As existing cladding
14. Cross joints: Single-lock welts
15. Spacing: As existing mansard
16. Bottom edge detail: Standing seam termination with vent gap
17. Head detail: Capped welt dressed under weathering with vent gap

- 18. Accessories: None
- 19. Other requirements: None

201 Fire performance of external wall

- 1. Wall covering: Reaction to fire: To BS EN 13501-1, Class A1.
- 2. Substrate: Reaction to fire: To BS EN 13501-1, Class A1..
- 3. Sheet underlay: Reaction to fire: To BS EN 13501-1, Class B-s3,d0.

203 Fire performance of inner lining/ cavities

- 1. Reaction to fire: To BS EN 13501-1, Class A2-s1, d0

204 Fire performance of cavity fire barriers

- 1. Standard: To BS EN 13501-2
- 2. Requirement: To resist the passage of flame and smoke for not less than 90minutes' integrity, 90 minutes' insulation.
- 3. Manufacturer: Siderise
Forge Industrial Estate, Maesteg, Bridgend, CF34 0AH, UK
T: +44 (0) 1656 730833
E: salesteam@siderise.com
- 4. Product: Siderise RV 90/60.

205 Insurance and warranties

- 1. Requirements and testing: To LPS 1581
- 2. Additional requirements: To NHBC Standards

206 Fire performance of insulation

- 1. Reaction to fire: To BS EN 13501-1, Class A1

General requirements/ preparatory work

510 Workmanship generally

- 1. Standard: Generally to CP 143-5 and Federation of Traditional Metal Roofing Contractors' 'UK Guide to Good practice in fully supported metal roofing and cladding'.
Also follow suppliers guidance VMZinc at Work
- 2. Fabrication and fixing: To provide a secure, free draining and completely weathertight installation.
- 3. Operatives: Trained in the application of zinc coverings/ flashings. Submit records of experience on request.
- 4. Preforming: Measure, mark, cut and form zinc prior to assembly wherever possible.
- 5. Metal temperature: Do not form zinc when the metal temperature is below the minimum recommended for working by the manufacturer.
- 6. Marking out: With pencil, chalk or crayon. Do not use scribes or other sharp instruments without approval.
- 7. Folding: With mechanical or manual presses to give straight, regular and tight bends, leaving panels free from ripples, kinks, buckling and cracks. Use hand tools only for folding details that cannot be pressed.
- 8. Sharp metal edges: Fold under or remove as work proceeds.
- 9. Sealants: Do not use in joints to attain waterproofing.
- 10. Solder: Use only where specified.

11. Finished zinc work: Fully supported, adequately fixed to resist wind uplift and able to accommodate thermal movement without distortion or stress.

11.1. Protection: Prevent staining, discolouration and damage by subsequent works.

515 Soldering and naked flame preheating

1. In situ soldering and naked flame preheating: Not permitted.

516 Soldering and naked flame preheating

1. In situ soldering and naked flame preheating: Permitted, subject to completion of a 'hot work permit' form and compliance with its requirements.

530 Integrity of zinc

1. Requirement: Design coverings/ flashings and methods of attachment to prevent loss of weathertightness and permanent deformation due to wind pressure or suction.
2. Structural requirements
 - 2.1. Wind loads: As Structural Engineers requirements

535 Integrity of zinc

1. Requirement: Design coverings/ flashings and methods of attachment to prevent loss of weathertightness and permanent deformation due to wind pressure or suction.
2. Wind loads: As Structural Engineer's requirements
3. Structural requirements
 - 3.1. Generally: As section B50.
 - 3.1.1. Modifications: None
 - 3.2. Design: Complete in accordance with the designated code of practice to satisfy specified performance criteria.

550 Lightning protection

1. Zinc coverings: Attach the following to a lightning protection system: Remove existing lightning protection to allow replacement of cladding replace with new system where tape is damaged by strip out of existing .
 - 1.1. Electrical continuity: Provide between zinc strips/ sheets via welting of joints.

555 Layout

1. Setting out of joints in direction of fall and cross joints: Submit proposals.

585 Existing metal removed to remain the property of the employer

1. Type/ location/ extent: All existing removed metal sheeting
2. Removal: Give notice when the metal is to be stripped.
 - 2.1. Handling/ storage: Keep for reuse by the employer.

610 Suitability of substrates

1. Condition: Dry and free of dust, debris, grease and other deleterious matter.

Fixing zinc

710 Fixings for clips

1. **Nails to timber substrates:** Galvanized or sherardized steel to BS 1202-1 for zinc clips. Stainless steel (austenitic) for stainless steel clips.
 - 1.1. **Shank type:** Annular ringed, helical threaded, or serrated.
 - 1.2. **Shank diameter:** Not less than 2.65 mm.
 - 1.3. **Head:** Flat.
 - 1.4. **Length:** Not less than 25 mm or equal to substrate thickness.
2. **Screws to concrete/ masonry substrates:** Sherardized or zinc plated steel to BS EN 14592 for zinc clips. Stainless steel (austenitic) to BS EN 14592 for stainless steel clips.
 - 2.1. **Diameter:** Not less than 3.35 mm.
 - 2.2. **Length:** Not less than 25 mm.
 - 2.3. **Washers and plastics plugs:** Compatible with screws.
3. **Screws to composite metal decks:** Self tapping as recommended by the deck and zinc manufacturer for zinc or stainless steel clips.

715 Zinc clips

1. **General:** Cut from strip/ sheet with clip length in direction of rolling.

720 Standing seam fixed clips

1. **Zinc clips:** Cut from same thickness of metal as that being secured.
2. **Dimensions**
 - 2.1. **Width:** Not less than 30 mm.
 - 2.2. **Base length:** Not less than 20 mm.
 - 2.3. **Upstand:** To suit standing seam profile.
3. **Stainless steel (austenitic) clips:** As supplied or recommended by the zinc manufacturer to suit project conditions.
4. **Fixing:** Secure each clip to substrate with two fixings.

725 Standing seam sliding clips

1. **Zinc clips:** Cut from same thickness of metal as that being secured.
 - 1.1. **Fixed component dimensions**
 - 1.1.1. **Width:** Not less than 90 mm.
 - 1.1.2. **Base length:** Not less than 20 mm.
 - 1.1.3. **Upstand:** 20 mm, with slot for locating sliding component.
 - 1.2. **Sliding component dimensions**
 - 1.2.1. **Width:** Not less than 30 mm.
 - 1.2.2. **Upstand:** To suit standing seam profile.
2. **Stainless steel (austenitic) clips:** As supplied or recommended by the zinc manufacturer to suit project conditions.
3. **Fixing:** Secure each clip to substrate with three fixings.

745 Capped welt clips

1. **Material:** Zinc of same thickness as that being secured.
2. **Dimensions**

- 2.1. Width: Not less than 50 mm.
- 2.2. Length: Sufficient to fold into welts of adjoining strips/ sheets.
3. Fixing: Secure each clip to substrate with two screws.

760 Continuous clips

1. Material: Zinc of same thickness as that being secured.
2. Dimensions
 - 2.1. Width: To suit detail.
 - 2.2. Length: Not more than 1800 mm.
3. Fixing: To substrate at 200 mm centres. Welt edge of strip/ sheet being fixed to continuous clip and dress down.

790 Screw-fixing into joints/ chases

1. Joint/ Chase: Rake out to a depth of not less than 25 mm.
2. Zinc: Fold into joint/ chase and up back face.
 - 2.1. Fixing: Into back face with galvanized, sherardized or stainless steel screws, washers and plastics plugs at not more than 450 mm centres, at every change of direction, and with at least two fixings for each piece of zinc.
3. Sealant: Contractor's choice
 - 3.1. Application: As section Z22.

Jointing zinc

810 Forming details

1. Folds and welts: Form without thinning, or splitting the strip/ sheet.
2. Thermal movement: Form details with appropriate allowance for movement, without impairment of security at full expansion or contraction.

825 Soldering details

1. Solder (not less than 40% tin content) and flux: As recommended by the zinc manufacturer.
2. Protective Coat: The protective coat on the underside of the upper panel must be removed over a width of 20mm either chemically, using DECALAQ, or mechanically, using a 3 MTM Roloc™ Bristle Disc brush mounted on a small disc sander.
3. Pre-weathering: The pre-weathering must be removed from the parts to be soldered. ZINN7 (flux) to be applied to allow spot soldering with solder (40% tin 60% lead) ZINN7 applied over whole length of joint and then soldered. Wipe clean. Please see VMZINC soldering document
4. Flux residues: Wash away as work proceeds.
5. Seams: Neat and consistent with an overlap of clean zinc as recommended for the particular joint by the zinc manufacturer.

830 Standing seam joints

1. Joint allowances: 45 mm overlap, 35 mm underlap and 5 mm gap for thermal movement. Preformed interlocking profiles for overlap and underlap are permitted.
2. Clip positions
 - 2.1. Sliding clips: Stainless steel. Two piece clips with 70mm sliding movement (205710000) Fixing: Secure each clip to substrate with three fixings. Each clip to withstand a pulling force of 50 kN Typical clip spacing: Middle zone every 330mm Edge zone 200mm Corner zone 150mm

3. **Forming:** Double welt overlap and clips around underlap to form a standing seam 25 mm high of consistent cross section.

850 Capped welt joints

1. **Zinc coverings**
 - 1.1. **Joint allowances:** Form strips/ sheets with 15 mm open welts each side of 15 mm open joint.
 - 1.2. **Fixing:** Clips at 400 mm centres.
2. **Cover cap:** Zinc of same finish and thickness as that being jointed. Preformed, 50 mm wide, in lengths to suit detail with any joints lapped 75 mm. Fold around strip/ sheet welts and clips and neatly close.

880 Single-lock welt joints

1. **Joint allowance:** 100 mm overlap and 50 mm underlap.
2. **Underlap:** Welt and secure with clips two per bay.
3. **Overlap:** Welt around underlap and clips and dress down.

885 Single-lock welt with check welt joints

1. **Underlap:** Fold 30 mm anticapillary welt at top edge and secure with clips, two per bay.
2. **Overlap:** Welt bottom edge of overlap 30 mm and lay 250 mm over underlap.
 - 2.1. **Fixing:** Secure welt with continuous clip, 60 mm wide, soldered to underlap.

Ω End of Section

K10

Gypsum board dry linings/ partitions/ ceilings

Types of dry lining

165 Wall lining system (metal framing)

1. Description: Existing framing to receive new plasterboard
2. Manufacturer: Existing SFS Manufacturer unknown
 - 2.1. Product reference: NA
3. Wall: Existing framing
4. Cavity between wall and back of lining: NA
 - 4.1. Framing centres: As existing
 - 4.2. Bracket centres (maximum): NA
5. Fire performance
 - 5.1. Reaction to fire: Assume 60 minute fire rating
 - 5.2. Fire resistance of complete wall lining assembly: To BS EN 13501-2. EI 60 or better
6. Fire separation
 - 6.1. Cavity fire barriers: NA
7. Insulation: Mineral wool as Section P10
 - 7.1. Recycled content: As manufactured
 - 7.2. Thickness: 150mm
8. Resilient layer: NA
9. Linings: Two layers 12.5 mm plasterboard Two layers 12.5 mm plasterboard as clause 404
10. Access units: NA
11. Finishing: Skim coat plaster
 - 11.1. Primer/ Sealer: As recommended by the board manufacturer for vapour control
 - 11.2. Accessories: Beads/ stops
12. Other requirements: NA

General/ preparation - Not Used

Components

400 Gypsum boards generally

1. Standard
 - 1.1. Gypsum plasterboard to BS EN 520.
 - 1.2. Gypsum fibre board to BS EN 15283-2.
 - 1.3. Evidence of compliance: Submit Declaration of Performance (DoP).

404 Gypsum plasterboard (improved fire protection)

1. Type: British Gypsum 12.5mm Fireline Duplex
2. Core: Including fibres and/ or other additives for improved cohesion.
 - 2.1. Density (minimum): 800 kg/m³.
3. Reaction to fire: Class A2-s1, d0 or better
4. Water vapour resistance factor: 1400 μ
5. Thermal conductivity: 0.24 W/(m·K)

6. Other BS EN 520 characteristics: None
7. Recycled content: As Manufactured
8. Exposed surface and edge profiles: Clean and undamaged

Installation

435 Dry linings generally

1. General: Use fixing, jointing, sealing and finishing materials, components and installation methods recommended by board manufacturer.
2. Cutting gypsum boards: Neatly and accurately without damaging core or tearing paper facing.
 - 2.1. Cut edges: Minimize and position at internal angles wherever possible. Mask with bound edges of adjacent boards at external corners.
3. Fixings boards: Securely and firmly to suitably prepared and accurately levelled backgrounds.
4. Finishing: Neatly to give flush, smooth, flat surfaces free from bowing and abrupt changes of level.

560 Joints between boards

1. Tapered edged gypsum boards
 - 1.1. Bound edges: Lightly butted.
 - 1.2. Cut/ unbound edges: 3 mm gap.
2. Square edged plasterboards: 3 mm gap.
3. Square edged gypsum fibre boards: 5 mm gap.

565 Vertical joints

1. Joints: Centre on studs.
 - 1.1. Partitions: Stagger joints on opposite sides of studs.
 - 1.2. Two layer boarding: Stagger joints between layers.

570 Horizontal joints

1. Surfaces exposed to view: Horizontal joints not permitted. Seek instructions where height of partition/ lining exceeds maximum available length of board.
2. Two layer boarding: Stagger joints between layers by at least 600 mm.
3. Edges of boards: Support using additional framing.
 - 3.1. Two layer boarding: Support edges of outer layer.

590 Fixing gypsum board to metal framing/ Furrings

1. Partitions/ Wall linings: Fix securely and firmly at the following centres (maximum):
 - 1.1. Single layer boarding: To all framing at 300 mm centres. Reduce to 200 mm centres at external angles.
 - 1.2. Multi-layer boarding: Face layer at 300 mm centres, and previous layers around perimeters at 300 mm centres.
2. Ceilings: 230 mm. Reduce to 150 mm at board ends and at lining perimeters.
3. Position of screws from edges of boards (minimum): 10 mm.
 - 3.1. Screw heads: Set in a depression. Do not break paper or gypsum core.

620 Fixing gypsum board with adhesive dabs

1. Setting out boards: Accurately aligned and plumb.
2. Fixing to substrates: Securely using adhesive dabs.

3. Adhesive dab spacings for each board
 - 3.1. Horizontally: One row along top edge and one continuous dab along bottom edge.
 - 3.2. Vertically: One row along each edge and thereafter at intermediate spacings to suit size of board:
4. Thickness (mm) Width (mm) Dab centres (mm)
5. 9.5 1200 400
6. 9.5/12.5 900 450
7. 12.5 1200 600
8. Adhesive dab dimensions (width x length): At least 50-75 mm x 250 mm.
 - 8.1. Position of dabs from edges/ ends of boards (minimum): 25 mm.

Finishing

650 Level of dry lining across joints

1. Sudden irregularities: Not permitted.
2. Joint deviations: Measure from faces of adjacent boards using methods and straightedges (450 mm long with feet/ pads) to BS 8212, clause 3.3.5.
 - 2.1. Tapered edge joints
 - 2.1.1. Permissible deviation (maximum) across joints when measured with feet resting on boards: 3 mm.
 - 2.2. External angles
 - 2.2.1. Permissible deviation (maximum) for both faces: 4 mm.
 - 2.3. Internal angles
 - 2.3.1. Permissible deviation (maximum) for both faces: 5 mm.

670 Seamless jointing to gypsum boards

1. Cut edges of boards: Lightly sand to remove paper burrs.
2. Filling and taping: Fill joints, gaps and internal angles with jointing compound and cover with continuous lengths of paper tape, fully bedded.
3. Protection of edges/ corners: Reinforce external angles, stop ends, etc. with specified edge/ angle bead.
4. Finishing: Apply jointing compound. Feather out each application beyond previous application to give a flush, smooth, seamless surface.
5. Nail/ screw depressions: Fill with jointing compound to give a flush surface.
6. Minor imperfections: Remove by light sanding.

680 Skim coat plaster finish

1. Plaster type As recommended by board manufacturer..
 - 1.1. Thickness: 2-3 mm.
2. Joints: Fill and tape except where coincident with metal beads.
3. Finish: Tight, matt, smooth surface with no hollows, abrupt changes of level or trowel marks.

692 Rigid beads/stops

1. Internal: To BS EN 13658-1.
2. External: To BS EN 13658-2.

695 Installing beads/ Stops

1. **Cutting:** Neatly using mitres at return angles.
2. **Fixing:** Securely using longest possible lengths, plumb, square and true to line and level, ensuring full contact of wings with substrate.
3. **Finishing:** After joint compounds/ plasters have been applied, remove surplus material while still wet from surfaces of beads exposed to view.

725 Repairs to existing gypsum board

1. Performance of repairs must match original specified performances.
2. **Filling small areas with broken cores:** Cut away paper facing, remove loose core material and fill with jointing compound.
 - 2.1. **Finish:** Flush, smooth surface suitable for redecoration.
3. **Large patch repairs:** Cut out damaged area and form neat hole with rectangular sides. Replace with matching gypsum board.
 - 3.1. **Fixing:** Use methods to suit type of dry lining, ensuring full support to all edges of existing and new gypsum board.
 - 3.2. **Finishing:** Fill joints, tape and apply jointing compound to give a flush, smooth surface suitable for redecoration.

Ω End of Section

K11

Rigid sheet flooring/ sheathing/ decking/ sarking/ linings/ casings

Types of flooring/ sheathing/ decking/ sarking/ lining/ casings

485 Wall sheathing

1. Description: Sheathing to Mansard level behind new Zinc cladding
2. Substrate: Existing SFS framing
 - 2.1. Additional supports: NA
3. Sheathing: Calcium-silicate board
 - 3.1. Manufacturer: Roofing and Cladding Materials Limited
Unit 27 Rosevale Road
Parkhouse Industrial Estate West
Newcastle under Lyme
Staffordshire ST5 7EF
 - 3.1.1. Product reference: Sheathing board
 - 3.2. Thickness: 12mm
 - 3.3. Fire performance
 - 3.3.1. Reaction to fire: BS EN 13501-1 Class A1 Non-Combustible
 - 3.3.2. Resistance to fire: Manufacturer's standard
 - 3.4. Other requirements: Joints filled with fire rated silicone sealant
4. Setting out: Long edges vertical and centred on supports.
 - 4.1. Expansion gap between adjacent boards: As manufacturers recommendations
5. Fixing to supports
 - 5.1. Fasteners: To be designed by cladding designer and meeting manufacturer's recommendations.
 - 5.2. Fixing centres (maximum)
 - 5.2.1. Around board edges: 150 mm
 - 5.2.2. Along intermediate supports: 150 mm
 - 5.3. Fixing distance form edges (min.): Fasteners should be a minimum of 12 mm from board edges, and spaced at a maximum of 300 mm. The screws must not be over-tightened.

585 Roof decking Fibre Cement Planks

1. Description: To replace existing timber decking on balconies
2. Substrate: Existing metal balcony structure
 - 2.1. Additional supports: New A fire rated pedestals
3. Decking: Mydek Luxura Decking System
 - 3.1. Board width: 144mm
 - 3.2. Thickness: 25mm
 - 3.3. Board length: 2.44m max
 - 3.4. Weight: 36kgs/sqm
 - 3.5. Material: Calcium silicate and mineral fibre composite
 - 3.6. Fire performance

- 3.6.1. **Reaction to fire:** Fully tested and certified to EN13501-1.
Class A1 non-combustible
- 3.7. **Edges:** Tongued and grooved all edges
- 3.8. **Other requirements:** Provide edge trim to perimeter.
- 3.9. **Colour:** BD20.2440.HICK Natural Hickory
- 4. **Setting out:** Long edges running across supports. End joints central over joists and staggered.
- 5. **Fixing**
 - 5.1. **Fasteners:** Can be fixed directly to steel balcony frame, if the existing structure allows for this, or fix to MyDek support systems with clips and self-drilling screws supplied by manufacturer.
Fixings to be concealed.
 - 5.2. **Fixing centres (maximum)**
 - 5.2.1. **Along each support:** as recommended by manufacturer
 - 5.2.2. **Around perimeter:** as recommended by manufacturer
- 6. **Expansion provision**
 - 6.1. **Clear expansion gap around perimeter of roof area and upstands:** 1 mm per metre run of roof, with a minimum gap of 10 mm.
 - 6.2. **Intermediate expansion/ movement joints:** As recommended by decking manufacturer.

890 Board

- 1. **Description:** Skirting board below rendered external wall
- 2. **Substrate:** RCM Y-Wall
- 3. **Board:**
 - 3.1. **Manufacturer/ Supplier:** Rockpanel
 - 3.1.1. **Product reference:** Rockpanel Colours
 - 3.2. **Colour/ Pattern/ Finish:** RAL 9003 White
 - 3.3. **Thickness:** 9mm
 - 3.4. **Fire performance**
 - 3.4.1. **Reaction to fire:** European fire class A2-s1,d0
 - 3.5. **Edges:** Square
 - 3.6. **Other requirements:**
- 4. **Fixing to supports**
 - 4.1. **Fasteners:** coloured match stainless steel screws
- 5. **Joint treatment:** intumescent sealant

Workmanship

910 Installation generally

- 1. **Timing:** Building to be weathertight before fixing boards internally.
- 2. **Moisture content of timber supports (maximum):** 18%.
- 3. **Joints between boards:** Accurately aligned, of constant width and parallel to perimeter edges.
- 4. **Methods of fixing, and fasteners:** As section Z20 where not specified otherwise.

960 Fixing generally

- 1. **Boards/ sheets:** Fixed securely to each support without distortion and true to line and level.

2. **Fasteners:** Evenly spaced in straight lines and, unless otherwise recommended by board manufacturer, in pairs across joints.
 - 2.1. **Distance from edge of board/ sheet:** Sufficient to prevent damage.
3. **Surplus adhesive:** Removed as the work proceeds.

975 Metal wall framing

1. **Setting out:** Existing set-out to be confirmed by site measure

Ω End of Section

M21 Insulation with rendered finish

General/ system requirements

120 Survey of structural substrate

1. **Timing:** Before starting work covered in this section.
2. **Objective:** To confirm suitability for application of external wall insulation system.
3. **Survey report:** Submit, covering:
 - 3.1. The form and condition of the structural substrate.
 - 3.2. A schedule of repairs and/ or additional works necessary to render the substrate suitable to receive the system.
 - 3.3. A schedule of services, fixtures and fittings requiring removal to facilitate installation of the system.
 - 3.4. Proposals for treatment of thermal bridges that may occur as a result of installing the system, e.g. at door and window reveals, concrete floor edges, movement joints.
 - 3.5. Any other relevant information.

160 Remedial work

1. **Remedial work shown to be necessary by survey:** As uncovered by survey

180 Structural substrate

1. **Description:** Existing SFS system
Replace the existing sheathing board with min. 12 mm RCM Y-Wall or approved equivalent cement-fibre or calcium silicate sheathing board with a reaction to fire classification of A1 or A2-s1,d0 (BS EN 13501-1 attached to SFS studs (vertical studs at max. 600 mm horizontal centres) all designed, supplied and installed by others, fully taped and sealed. MgO boards and gypsum-based boards shall not be used.
 - Sheathing boards shall be clean, dry, installed flat, plumb and true to line and level, and shall provide sufficient resistance to EWl fixing withdrawal. All penetrations through the wall shall be sealed and weather tight prior to application of the system. Substrate shall be capable of supporting the dead load of the EWl system and of transferring all loads (including wind loads) back to the primary structure. All by others.
2. **Preparation:** Walls must be clear of all defective paints, coatings, renders, dirt, moss, mould and any other surface contaminants and all material identified and marked for removal in the survey. Clean surfaces as necessary using appropriate means. Treat all areas affected by moss, mould, algae, lichens and the like with PermaRock Moss & Mould Remover before application of renders or adhesives.
 - Prepared walls must be sound, stable and in a suitable condition to receive the proposed cladding system.

210 External wall insulation system

1. **Description:** Replacement insulated render system
2. **Manufacturer:** PermaRock Products Ltd., Jubilee Drive, Loughborough, Leicestershire, LE11 5TW, Tel: 01509 262924, Email: permarock@permarock.com Web: www.permarock.com
3. **System reference:** PermaRock Mineral Fibre EWl System - Adhesive & Mechanical fix
4. **Boards:** 12mm thick Y Wall

4.1. Method of fixing: Self-drilling or self-tapping screws

5. **Insulation:** PermaRock Mineral Fibre Dual Density (DD) Insulation. Hydrophobic, high laminar and compressive strength fire resistant, mineral (stone) wool, manufactured into rigid boards with a high density external face (marked 'This side Up') and lower density core.
 - Declared thermal conductivity ($\lambda_{90/90}$): 0.036 W/mK.
 - Maximum size of mineral fibre insulation boards: 1200 x 600 mm.
6. **Thickness:** 50mm
Other thicknesses as necessary to complete the detailed design of the system.
7. **Density:** 50 kg/m³
8. **Performance in relation to fire:** Class A1 (EN 13501-1); Flashover: none; Smoke production: nil (SBI test); Fire barriers: not required within the EWI system.
9. **Thermo-dimensional stability:** < 1 mm at 50°C temperature difference over 10 m.
10. **Environmental:** CFC/HCFC free. Zero ODP.
11. **Embodied energy:** ca. 91 MJ/m² (at 60 mm thick).
12. **Water vapour resistivity:** 6.2 MNs/gm (BS 7374).
13. **Method of fixing:** Adhesive:
PermaRock Lamella Adhesive. High polymer content modified cement-based, hydraulic hardening mineralic adhesive. Supplied as dry powder pre-mix. 100% adhesive bed contact with the substrate (Notched trowel application).
Mechanical fixings:
PermaRock FIS/50-60RP Plastic tube (60 mm Ø head) and 95 mm screw fixing.
Allow 6 no. fixings/insulation board, pro-rata part boards (min. 1 no/part board).
14. **Recycled content:** As supplied
15. **Fire barriers:** At compartment lines and around window and door reveals
16. **Beads/ trims:** Stainless steel bell casts Coated galvanized steel corner beads Galvanized steel stop beads Stainless steel undersills with end caps
17. **Construction/ movement joints:** Galvanized steel render stops
18. **Render carrier/ reinforcement:** PermaRock Bedding Mortar: Polymer-modified, cement-based base-coat render incorporating selected graded aggregates. Supplied as dry powder pre-mix requiring mixing with water on site. For use with PermaRock Reinforcing Mesh. Application weight ca. 4.0-4.5 kg/m²
. A higher application rate will be required for use with Armoured Mesh reinforcement.
 - PermaRock Reinforcing Mesh: Alkali-resistant, multi-strand, glass fibre reinforcing mesh for reinforced basecoat layers with PermaRock Bedding Mortar.
 - PermaRock COR/AL/M. Aluminium corner reinforcement angles with alkali-resistant glass fibre 'wings'.
19. **Reinforcement layer fixings :** PermaRock FIS/40-50SB/SS-70. 80mm long stainless steel JT3 screw with 70 mm Ø ss disk head. Install in a max. 1000 mm x 1000 mm square grid pattern with additional fixings around structural openings (max. 300 mm ctrs) and at external building corners (max. 300 mm ctrs).
20. **Sponge-floated basecoat :** PermaRock Bedding Mortar: Polymer-modified, cement-based base-coat render incorporating selected graded aggregates. Supplied as dry powder pre-mix requiring mixing with water on site. Application weight ca. 3.5-4.0 kg/m²
(Total application weight (reinforcement layer + sponge float coat layer) not less than 8 kg/m²).
21. **Method of fixing:** Embedded within base coat
22. **Render:** Manufacturer's standard
23. **Decorative finish:** Primer:-
PermaRock K&R Primer: Solvent-free, synthetic resin dispersion pigmented adhesion promoting primer for exterior and interior surfaces. Solidifies the surface, water-repellent, levels absorptivity of surfaces.

- Colour: approx. as K-Finish
 - Consumption rate: 300-350
24. **Decorative Finish : Top Coat**
PermaRock SiliconeULTRA K-Finish: Lightweight exterior render based on a silicate organo-hybrid dispersion and silicone emulsion binder with nano-quartz matrix structure. High water-vapour permeability. Weather resistant and water repellent. Contains anti-algal and anti-fungal agents. High colour stability. Flat (matt).
– Consumption rate: 1.9-2.0 kg/m².
– Grain size: 1.5 mm
– Colours: To be advised (only colours with a light reflectance value (Lightness Factor, LF) > 20 are recommended).
25. **Beads/Trims/Profiles** : -Starter Track (aluminium): PermaRock BAS/50MF/N6 (6mm). Box-section, aluminium starter track with clip-on drip edge bead for use with thin-coat renders
- Corner reinforcement PermaRock COR/AL/M Aluminium corner reinforcement beads with alkali-resistant glass-fibre reinforcing mesh 'wings'.
- Full System Stop Bead PermaRock STP/50PA Pre-coated (RAL 9010) Aluminium Full Depth Stopbead with STP/50CL Polyester Powder Coated Aluminium Joint Clip
- Render Stop Bead STP/06SS/3MTR. Aluminium render stop bead.
- Window sealing beads PermaRock BEA/PWSS/06/EWI/2.4. uPVC window seal strips (APU Bead) for clean watertight junctions with window & door frames.
26. **Ancillary Items**: -Sealing tapes PermaRock SEA/TP610/3-6 (3-6 mm)
PermaRock SEA/TP610/5-12 (5-12 mm)
- Profile Fixing Screws PermaRock FIS/03PT/N
- Starter Track H-Connectors PermaRock BAS/01
27. **Wind Load Test**: The system as specified includes for a certain arrangement of fixings (plus adhesive) that is sufficient to provide the necessary factors of safety for design wind loads (suction) of up to 1.62 kN/m².
If higher wind loads are anticipated, then an increased number of fixings will be necessary: Cladding Sub Contractor's Structural Engineer to advise on the maximum wind suction forces acting on the areas where EWI is being proposed for manufacturer, then manufacturer can review the fixing arrangements to ensure that there is sufficient fixity to satisfy the loads.
28. **Note**: The above are amongst a wide range of standard components and accessories used with this system. Reference should be made to construction issue drawings for information regarding the requirement for other beads, trims, profiles, flashings, etc., (standard or bespoke) that may be required in specific locations: Refer to Architect's drawings. Other ancillary items which are not individually itemised, but which form an integral part of the PermaRock system or which are required in order to meet the requirements of this specification should be included with any tender.

235 Vapour Control Layer

1. **Manufacturer**
Name A Proctor Group Ltd
Web www.proctorgroup.com
Email technical@proctorgroup.com
Tel +44 (0) 1250 872261
Fax +44 (0) 1250 872727
Address The Haugh, Blairgowrie, Perthshire PH10 7ER

Material: Woven glass fibre, aluminium foil and lacquer coating.

Purpose -

Vapour control layer.

Performance characteristics - A2

Tensile strength (minimum):

MD 700 N/50mm; CD 400 N/50mm when tested to EN 12311-1.

Tear resistance:

MD 170 N; CD 130 N when tested to EN 12310-1.

Elongation to break:

MD 3%; CD 3% when tested to EN 12311-1.

Fire performance:

A2-s1,d0 when tested to EN 13501-1.

Form -

Woven.

Physical properties

Weight (minimum) - 165 g/m².

Dimensions - Thickness (minimum) <1 mm.

Width (minimum): 1.2 m.

Roll length (minimum) : 50 m.

Type: A woven glass fibre, foil faced vapour control layer (VCL) used for vapour and airtightness as well as having a low emissivity surface which can help with improving thermal performance.

Water vapour resistance:

Sd >1500 m when tested to EN 1931.

Accessories: Procheck FR Tape is an aluminium faced, air and vapour tight tape

307 Completion of design

1. **Description:** FOR INSULATION SYSTEM TO MANSARD LEVEL AND LIGHT WELL
2. **Requirement:** Complete the detailed design to satisfy specified performance criteria and coordinate with the detailed design of related and adjacent work.
3. **Structural requirements:** As section B50.
4. **Additional requirements:** None
5. **Design and production information:** As Preliminaries section A31
6. **Timing of submissions:** As Preliminaries section A31

320 Performance

1. **Integrity**
 - Weather tight under all anticipated conditions.
 - Window/door frames and all other penetrations through the wall: weather sealed by others prior to the installation of the system.
 - Horizontal surfaces: Protected by suitable waterproof flashings, sills or copings.
 - Insulation edges: Not exposed. Fully protected against water ingress during the installation phase. Refer to PermaRock Standard detail drawings.
 - Sealants: Only be used in conjunction with sealing tape backer or backing rod.
2. **Loading - Generally**
 - The PermaRock system is fixed to the substrate using a combination of adhesive bonding and mechanical fixing to ensure that structural stability of the system is maintained. PermaRock has not carried out or commissioned a structural survey of the building and recommend that the Contract Administrator and Client consider this course of action if not already done so prior to commencement of the works. PermaRock will take no liability for the suitability of the building structure to support the load imposed by the proposed EWI system and advises that the Client/Contractor should engage a qualified structural engineer to determine the building's suitability.
3. **Wind Loading**
 - The fixing arrangement indicated in this Specification is provisional. In order to confirm fixing requirements, the design wind loads (wind suction, kN/m²) shall be provided to PermaRock at the earliest to enable checking of the fixing arrangements to be made.
 - The adequacy of the proposed fixing design can be verified based on a wind loading assessment carried out in accordance with BS EN 1991-1-4:2005 by the Client's structural engineer and provided to PermaRock. See Clause 440.
 - PermaRock will carry out in-situ pull-out tests to verify the suitability of the proposed fixings. Data from insitu pull-out testing and laboratory-based pull-through/pull-over testing are used to establish a proposed fixing design.
4. **Impact Loading**
 - All areas of the system are to incorporate reinforcing mesh in to the render to provide resistance to impact damage.
 - Resistance to low energy impacts (< 10J) shall be provided by incorporation of PermaRock Reinforcing Mesh into the basecoat renders.
5. **Environmental**
 - The PermaRock Mineral Fibre system achieves an Ecopoint score of 0.1/m² when assessed in accordance with BRE methodologies for Environmental Profiles (1999) and Ecopoints (2001), equating to a BRE Green Guide rating of A/A+.
 - PermaRock Mineral Fibre insulation is zODP, CFC and HCFC free and has a Global Warming Potential (GWP) of less than 5.

6. Fire
 - The PermaRock Mineral Fibre EWI System with PermaRock SiliconeULTRA K-Finish is Class A2-s1,d0 (BS EN 13501-1; 2007) when attached to a substrate that is Class 1 or A2-s1,d0.
 - PermaRock Mineral Fibre Insulation is Class A1 (BS EN 13501-1; 2007).
 - Drained/Ventilated cavities to include vertical and/or horizontal fire barrier as required by the relevant parts of the Building Regulations, Approved Documents, and as required by the Building Control body is not form any part of the PermaRock Mineral Fibre EWI System and shall be designed and installed by others.
7. Colour Fastness / Fade Resistance
 - Optimum resistance to colour fade of K- and R-Finish renders and paints is achieved through the selection of SiliconeULTRA products and A1-rated colours (refer to PermaRock Colour Chart).

360 Samples

1. **Procedure:** Submit samples/ examples of designated items for approval. Keep approved samples on site for the duration of the contract for inspection/ comparison purposes.
2. **Designated items:** Movement joints

365 Site Samples

1. Prior to work commencing the appointed sub-contractor shall prepare, at the workplace, a sample panel incorporating the specified decorative finish types described in Clause 220 in the colours selected by the Client as outlined in Clause 360. Samples shall be of suitable area, applied using the same methodology and techniques/equipment as for the works, and shall be representative of the quality of the workmanship which can be achieved. The sample panel shall be retained on site throughout the Contract for inspection/comparison purposes.

375 Colour Consistency

1. Synthetic renders for application over insulated backgrounds should be selected in colours with a lightness factor (LF) ≥ 20 .
 - Due to the natural chalking effects of intense or dark coloured renders (LF < 20), and to assist in achieving colour consistency, it is essential or strongly recommended that such renders be overpainted with a suitable PermaRock façade coating as follows:
 - For render colours with a lightness factor (LF) of ≤ 15 , overpainting with an equalisation coating should always be carried out.
 - For render colours with LF between 15 and 20, overpainting with an equalisation coating is strongly recommended. Note, however, that painted surfaces may not fall within the A2-s1,d0 reaction to fire classification for the system.

380 Uniformity of colour and texture of coating mixes

1. **Type/ proportion of constituent materials:** Unchanged once samples of coatings have been approved.
2. **Supplies of materials:** Sufficient to give consistent and uniform colour and texture. The installer shall ensure that sufficient decorative finish material from a single batch is ordered to ensure consistency of colour to all elevations. Where multiple batches are employed, the installer shall ensure consistency of colour before application of the material. Pre-blending of different batches may be necessary to ensure colour consistency.

Installation

380 Uniformity of Colour and Texture

1. To minimise the risk of variations in colour shade and to avoid dry line jointing, decorative finishes should be applied continuously without a break. If breaks cannot be avoided, they should be made where services or architectural features, such as drainpipes, reveals or lines of door or windows, help to mask the position of the joint. Where long uninterrupted runs are planned, material should be checked for batch number. Material with different batch numbers should be checked for colour consistency. Sufficient materials having the same batch number should be used to complete an elevation.

410 Installation

1. **Installer:**
The system shall be installed by a specialist installation contractor registered with PermaRock Products Ltd.
2. **The installation contractor shall:** Employ operatives who have the necessary skills/competences to undertake the work to the required quality and performance standards.
 - Ensure that operatives have received training from PermaRock Products Ltd. in the use of its materials, in particular those specified for use on this project.
 -

Ensure that the system is installed in accordance with this Specification and in accordance with PermaRock's details.

- Ensure that each application team includes at least one member with the correct trade/supervisory skills.
 - Undertake to comply with PermaRock Products Ltd's application methodology as described in the Installation Manual.
 - Operate a quality management procedure for installation of the system and which includes 'holding points' to allow sign-off at key stages of the system installation by an appointed person(s) who is familiar with the installation methodology and the required performance and quality outcomes.
 - Maintain a detailed photographic record of all stages of the installation.
 - Measure and record accurate weather, temperature and relative humidity readings at the work face using proper instruments which have been calibrated.
 - Be subject to unannounced inspections by PermaRock Products Ltd.
3. **Note:** PermaRock reserves the right to instruct the installation operatives to remove work which is deemed to be defective or non-compliant with the installation requirements. All such works shall be reinstated to a satisfactory quality standard by the installer at their cost.

416 Line and Level and Flatness

1. The term 'line and level' in conjunction with this specification refers only to minor localised variations in the surface to which the system is to be applied. The system cannot correct major variations in line and level over several storeys in height and/or over large areas of elevations. The system will therefore generally follow the line of the existing substrate unless these building irregularities are overcome by a preliminary treatment prior to the application of the system.
 - PermaRock has not carried out or commissioned a verticality or flatness survey of the building elevations and recommends that the Contract Administrator and Client consider this course of action if not already done so prior to commencement of the works.
 - The flatness of the substrate can be checked using a straight edge spanning the storey height. Horizontal projections, ledges, etc., should be removed to provide a level surface to receive the system.
 - If required, a flatness tolerance for the render finish of the installed system can be discussed and

agreed between the system installer and the principal contractor and/or Client in advance of works commencing. It is advisable not to illuminate the rendered surface with up- or down-lighters which will accentuate and draw attention to any variations in flatness of the finished render surface.

– The NHBC Document 'A Consistent Approach to Finishes' should be used to judge the minimum standard of the finished work. This document highlights that the surface of the render should be viewed under natural daylight from 10 metres away. At this distance the render on the walls should be reasonably consistent in texture, finish and colour. However, there may be some minor colour variation due to differences in the suction of the background and the orientation of the wall.

421 Adverse Weather

1. A maximum and minimum thermometer shall be provided in an unsheltered position adjacent to the Works.
 - Materials: Do not use frozen materials and do not apply materials to frost-bound substrates.
 - Do not apply cement-based materials when the temperature is below 5 oC on a falling thermometer or below 3 oC on a rising thermometer. For cement-free materials, refer to individual product data sheets for application temperature information, etc.
 - Do not apply materials when the temperature of the air, or wall surface is in excess of 30 oC without protection of the surface.
 - Drying times of decorative finishes, particularly pre-mixed water based materials, may be greatly extended during periods of low temperature and/or high relative humidity.
 - Temperature of the work: Protect newly rendered surfaces against rain, snow, or other precipitation and maintain the temperature of the work above the minimum level recommended by the manufacturer until the adhesive/mortar/render/finish has cured/hardened sufficiently.
 - Ensure that the material is protected from frost, wash-offs etc. during the curing/drying period and note that curing/drying times can become extended during low temperature and/or high humidity conditions. Refer to individual product Technical Data Sheets for further information.
 - Application of renders, mortars or decorative finishes shall not be carried out on elevations where summer strength sunlight is hitting the area square on, for prolonged periods without affording protection. The recommendations of the BS EN 13914-1:2005 shall be followed with respect to application of render materials during hot and cold weather conditions.
 - Coatings damaged by rain or frost: Remove and replace.

430 Substrates

1. **Condition before pretreatment/ application of insulation system:** Structurally sound, clean, adequately true to plumb, line and level, dry, free from contamination by dirt, dust, efflorescence or other deleterious substances.
Unobstructed by membranes and/or any other materials that might prevent adhesive bonding of the insulation to the sheathing board or blockwork substrate.

435 Removal of existing components

1. **Requirement:** Existing plastic vents

440 In-Situ Pull out Tests on Fixing Pins

1. **Objective:** To determine the ultimate pull-out failure resistance of insulation fixings.
 - Period of notice: PermaRock require a minimum period of 10 working days' notice prior to carrying out in-situ pullout tests if required.
 - Where required, tests shall be undertaken in accordance with ETAG014 guidelines: I.e in each substrate type, and for each proposed fixing type, a minimum of 15 no. individual pull-out tests shall be carried out. Characteristic design resistance, calculated from the mean of the lowest five individual pull-out values, shall be provided to the Retrofit Designer.

491 Construction / Movement Joints

1. **Location:** Coinciding with movement joints in the substrate.
 - Where there are movement joints in the substrate these shall be brought through the system using a PermaRock Movement Joint Profile (for vertical joints) or PermaRock Compression joint

System Profiles (for horizontal joints to accommodate vertical deflections) appropriate to the joint orientation, joint width, and degree of anticipated movement.

510 Fire barrier installation

1. **Material:** To BS EN 13501-1, Class A1
2. **Size (minimum):** 100 mm x total thickness of external wall insulation
3. **Fixing:** Stainless steel anchors
 - 3.1. **Method:** Mechanically back to structural substrate. Barrier sections closely butted at joints and intersections with no gaps and incorporating intumescent strips, tapes, mastic or foam sealants recommended by system manufacturer.
4. **Location:** To coincide with every compartment walls and window reveals

520 Supports/ sleeves for services/ fittings

1. **Service/ fitting:** Vent pipes to kitchens and bathrooms
2. **Location:** Each apartment
3. **Type of support:** Rigid steel sleeve

530 Sealant joints

1. **Locations:** Around door and window openings
2. **Sealant:** Low modulus silicone
3. **Joints:** Formed in accordance with section Z22 and system manufacturer's recommendations using any necessary joint fillers, backing strips, etc.

550 Inspection of completed installation

1. **Timing:** As soon as possible after completion of the work and before removing scaffolding.
2. **Notice for inspection (minimum):** Four working days Five working days
Refer to BS EN 13914-1:2005, NA.15 regarding assessment of external rendered finishes.
3. **Submit :** Description of inspection and remedial works carried out.

650 Storage

1. Adequate dry weatherproof and ventilated storage shall be provided for all materials and components. Materials shall be stored off the floor and protected against frost and extreme temperatures, Refer to individual product data sheets for further guidance.

Ω End of Section

M61

Intumescent coatings for fire protection of steelwork

Protective coating systems

120 On-site coating to existing steel

1. Description: TO STEEL WITHIN CAVITY
2. Use/ location: To steels where intumescent coating have been disturbed.
3. Fire performance: As clause 202
4. Preparation: Manual cleaning
5. Intumescent coating system
 - 5.1. Manufacturer: Jotun
 - 5.1.1. Product reference: Jotun A/S
 - 5.2. Primer
 - 5.2.1. Type: Jotacote F60 Primer
 - 5.3. Intumescent coat
 - 5.3.1. Type: Sealmaster 600WF
 - 5.3.2. Finish: Non-visible areas: basic
 - 5.4. Top sealer coat
 - 5.4.1. Type: Sealmaster 600WF
 - 5.4.2. Colour: Contractor's Choice
6. Bolt head/ nut protection: As main steelwork

Performance and general requirements

202 Fire performance

1. Reaction to fire: A1
2. Fire resistance to BS EN 13501-2: To BS 476, 60 minutes

204 Exposure and durability

1. Environmental exposure: C0
2. Durability classification: W/Y

205 Validation of materials

1. Project-specific evaluation of intumescent coating materials
 - 1.1. Standard: In accordance with BS EN 16623, clause 4.
 - 1.2. Test results: Submit on request.

210 Working procedures

1. Standard: In accordance with BS EN 16623.
2. Give notice: Before commencing surface preparation and coating application.
3. Quality control: Record project specific procedures for surface preparation and coating application.

215 Working conditions

1. General: Maintain manufacturer's recommended temperature, humidity and air quality conditions during application and drying.

2. Surface condition: Clean and dry at time of application.

220 Applicator's personnel

1. Operatives: Trained/ experienced in anticorrosive and intumescent coatings.
2. Evidence of training/ experience: Submit on request.

270 Inspection

1. Permit intumescent manufacturer to
 - 1.1. Inspect work in progress.
 - 1.2. Inspect quality control records.
 - 1.3. Take dry film thickness and other measurements.
 - 1.4. Take samples of products.
2. Intumescent manufacturer's inspection reports: Submit without delay.

Preparation of surfaces

330 Existing steel – manual cleaning

1. Preparation: Remove oil, grease and contaminants.
2. Loose or unsound coatings: Remove to a firm edge.
3. Finish: To BS EN ISO 8501-1, preparation grade St2. Leave a clean but unpolished dry surface.
4. Primer: Apply as soon as possible after cleaning and before gingering or blackening appears. Remove coating edges that lift as a result of priming, and reprime.

340 Existing steel – preparation for overcoating

1. Preparation: Remove oil, grease and contaminants.
2. Loose or unsound coatings: Remove to a firm edge.
3. Exposed steel finish: Manually clean to BS EN ISO 8501-1, grade St2. Leave a clean but unpolished dry surface.
4. Existing coatings finish: Abrade to give a good key. Leave a clean, dry surface.
5. Primer: Apply one brush coat to bare steel areas. Remove coating edges that lift as a result of priming, and reprime.

Application of castings - Not Used

Application of coatings

410 Intumescent coating dry film thickness (dft)

1. Applicable coatings: TO EXISTING STEEL COLUMNS IN CAVITIES
2. Required dft: Determine for every steel member to give specified period of fire resistance. Use intumescent coating manufacturer's current published loading tables.
 - 2.1. Special sections and partial fire exposure conditions: Obtain required dft in writing from manufacturer.
3. Schedule and drawings: Submit at least two weeks before starting work.
 - 3.1. Schedule content: Member sizes, weights/ thicknesses, loading conditions, etc. showing, for each variant, the exposed perimeter/ sectional area (Hp/A) ratio and required dft.
 - 3.2. Drawing content: Steelwork drawings marked in colour to show required dft for each member.

420 Measurement of intumescent dft

1. **Primer dft:** Determine average dft (for deduction from total dft after application of intumescent).
2. **Intumescent dft:** Determine at:
 - 2.1. 500 mm centres along each coated plane of universal sections (8 planes), and rectangular hollow sections (4 planes).
 - 2.2. 125 mm centres along coated circular hollow sections, spread evenly around circumference.
3. **Acceptance standard**
 - 3.1. **Average intumescent dft:** Not less than required dft (exclusive of primer and top sealer).
 - 3.2. **Local intumescent dft:** Not less than 80% of required dft. Areas greater than 100 mm equivalent diameter with a dft of less than 80% of required dft must be brought up to thickness.

440 Basic finish

1. **Definition:** Reasonably smooth and even. Orange peel, other texture, minor runs and similar minor defects are acceptable.

490 Top sealer coat

1. **Application:** To achieve dft recommended by manufacturer and to give an even, solid, opaque appearance, free from runs, sags and other visual defects.

Completion

530 Records of intumescent application

1. **On completion of intumescent work, submit**
 - 1.1. Accurate surface preparation, coating and intumescent application records.
 - 1.2. Fire resistance certificates.
 - 1.3. Intumescent manufacturer's recommendations for maintenance and overcoating.

Ω End of Section

P10 Sundry insulation/ proofing work

Types of insulation

320 Breather membrane

1. Manufacturer: OBEX Protection Ltd
Unit 5, St. Modwen Park, Norton Rd, Broomhall, Kempsey, Worcester WR5 2QR
 - 1.1. Product reference: Obex W1
2. Standard: BS EN 13859-1
 - 2.1. Characteristics: Reaction to fire: To BS EN 13501-1, Class A2
3. Installation requirements
 - 3.1. Setting out: Joints minimized. Membrane to form a continuous barrier to prevent water, snow and wind blown dust reaching the substrate.
 - 3.2. Method of fixing: As manufacturers standard
 - 3.3. Joints: Lapped 100 mm minimum horizontally and 150 mm minimum vertically.
 - 3.4. Openings: Membrane fixed to reveals.
 - 3.5. Bottom edges: Membrane lapped over flashings, sills, etc. to allow free drainage to the exterior.
4. Penetrations: Sealed.

Ω End of Section

Z22 Sealants

Products

310 Joints

1. Description: Existing joints between retained window and retained brickwork
2. Manufacturer: Adshead Ratcliffe Derby Road, Belper DE56 1WJ 01773 826661
 - 2.1. Product reference: Arbosil 1090
3. Primer, backing strip, bond breaker: Types recommended by sealant manufacturer.
4. Fire performance
 - 4.1. Fire resistance: Manufacturer's standard
 - 4.2. Reaction to fire: Manufacturer's standard

Execution

610 Suitability of joints

1. Presealing checks
 - 1.1. Joint dimensions: Within limits specified for the sealant.
 - 1.2. Substrate quality: Surfaces regular, undamaged and stable.
2. Joints not fit to receive sealant: Submit proposals for rectification

620 Preparing joints

1. Surfaces to which sealant must adhere
 - 1.1. Remove temporary coatings, tapes, loosely adhering material, dust, oil, grease, surface water and contaminants that may affect bond.
 - 1.2. Clean using materials and methods recommended by sealant manufacturer.
2. Vulnerable surfaces adjacent to joints: Mask to prevent staining or smearing with primer or sealant.
3. Backing strip and/ or bond breaker installation: Insert into joint to correct depth, without stretching or twisting, leaving no gaps.
4. Protection: Keep joints clean and protect from damage until sealant is applied.

630 Applying sealants

1. Substrate: Dry (unless recommended otherwise) and unaffected by frost, ice or snow.
2. Environmental conditions: Do not dry or raise temperature of joints by heating.
3. Sealant application: Fill joints completely and neatly, ensuring firm adhesion to substrates.
4. Sealant profiles
 - 4.1. Butt and lap joints: Slightly concave.
 - 4.2. Fillet joints: Flat or slightly convex.
5. Protection: Protect finished joints from contamination or damage until sealant has cured.

Ω End of Section



Specification created using NBS Chorus