

Piccadilly Warehouse Refurbishment Project NBS Specification

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H
Cladding/Covering

H72

Aluminium strip/ sheet coverings/ flashings

H72 Aluminium strip/ sheet coverings/ flashings

To be read with Preliminaries/ General conditions.

TYPES OF ALUMINIUM WORK

110A FLASHING AND COPING TO ROOFTOP EXTENSION

Manufacturer: Facade / Roofing Sub-contractor to submit proposals

- Product reference: Flashings and Copings
- Design: The Facade / Roofing Sub-contractor is to provide the detail design of the flashings and copings based on Beech Design & Build Design Intent Drawings.
- Material: 2mm Thick Aluminium.
- Colour/ Finish: Polyester powder coated, Colour - Bronze.
- Accessories: Preformed cappings are to be manufactured off site following a site measure and fabrication drawings being approved. All the fixings of the Rooftop Extension are to be secured fixed. The Facade / Roofing Sub-contractor as part of the detailed drawing submission is to take into account the thermal continuity between the glazed facade, roof upstand and the soffit which the coping will be closing. The Facade / Roofing Sub-contractor is to also ensure their detailed design proposals include for compliance with Building Regulation Part B in relation to external fire spread and compartmentation

Prior to formally placing the order the Main Contractor is to confirm via the Architectural Project Lead all discharge of conditions relating to the External Facade have been approved by Manchester City Council Planning and Conservation Officer.

420 COVER FLASHINGS AS REQUIRED FOR THE ROOFING FINISH TO BE TURNED INTO THE EXISTING BRICKWORK PARAPET

- Aluminium: Coated sheet/ strip.
 - Alloy designation: EN AW-1050A.
 - Temper: O.
 - Finish: Polyester powder coated, Colour - Bronze.
 - Thickness: 1.0 mm.
- Dimensions:
 - Lengths: Not more than 2 m, with end to end joints lapped not less than 100 mm.
 - Cover to roofing upstand: Not less than 75 mm, with bottom edge welded 15 mm.
- Fixing: The Facade / Roofing Sub-contractor is to provide the detail design of the flashings and copings based on Beech Design & Build Design Intent Drawings.

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470 MISCELLANEOUS FLASHINGS AS REQUIRED

- Aluminium: Coated sheet/ strip.
 - Alloy designation: EN AW-1050A.
 - Temper: O.
 - Finish: Polyester powder coated, Colour - Bronze.
 - Thickness: 1.0 mm.
- Dimensions:
 - Lengths: Not more than The Facade / Roofing Sub-contractor is to provide the detail design of the flashings and copings based on Beech Design & Build Design Intent Drawings.
- Fixing: The Facade / Roofing Sub-contractor is to provide the detail design of the flashings and copings based on Beech Design & Build Design Intent Drawings.

Prior to formally placing the order the Main Contractor is to confirm via the Architectural Project Lead all discharge of conditions relating to the External Facade have been approved by Manchester City Council Planning and Conservation Officer.

GENERAL REQUIREMENTS/ PREPARATORY WORK

510 WORKMANSHIP GENERALLY

- Standard: Generally to CP 143-15.
- Fabrication and fixing: To provide a secure, free draining and completely weathertight installation.
- Operatives: Trained in the application of aluminium coverings/ flashings. Submit records of experience on request.
- Measuring, marking, cutting and forming: Prior to assembly wherever possible.
- Marking out: With pencil, chalk or crayon. Do not use scribes or other sharp instruments without approval.
- 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.
- Surface protection: Fully coat surfaces to be embedded in concrete or mortar with high build bitumen based paint, after folding.
- Sharp metal edges: Fold under or remove as work proceeds.
- Joints: Do not use sealants to attain waterproofing.
- Finished aluminium work: Fully supported, adequately fixed to resist wind uplift and able to accommodate thermal movement without distortion or stress.
 - Protection: Prevent staining, discolouration and damage by subsequent works.

515 WELDING

- In situ welding: Not permitted.

520 ALUMINIUM STRIP/ SHEET

- Standard: To BS EN 485, BS EN 507, BS EN 515 and BS EN 573.
 - Stamped or labelled with alloy designation, temper, finish and thickness.
- Manufacturer: Contractor's choice.
 - Product reference: Submit proposals.

525 COATED ALUMINIUM STRIP/ SHEET

- Manufacturer: Contractor's choice.
 - Product reference: Submit proposals.

535 INTEGRITY OF ALUMINIUM

- Requirement: Design coverings/ flashings and methods of attachment to prevent loss of weathertightness and permanent deformation due to wind pressure or suction.
- Wind loads: Calculate to BS 6399-2.
- Structural requirements:
 - Generally: As section B50.
 - Modifications: None.
- Design: Complete in accordance with the designated code of practice to satisfy specified performance criteria.

550 LIGHTNING PROTECTION

- Aluminium coverings: Attach the following to a lightning protection system as recommended by the M&E Consultant.
- Electrical continuity: Provide between aluminium strips/ sheets via wetting of joints.

555 LAYOUT

- Setting out of longitudinal and cross joints: Submit proposals.

560 CONTROL SAMPLES

- General: Complete areas of finished work and obtain approval of appearance before proceeding:
- Size: The mock up sample which is required to be utilised for the Planning Condition Approval will be utilised as the control sample for all flashings and copings.
- Location: To be confirmed by the Main Contractor .

565 MOCK-UP

- General: At an agreed stage construct a mock-up as follows:
It will be required to be circa 3.5m long as the mock up must include 3 No. bays of the concealed top hung window, fixed glazed units, partition abutment and the vertical glass fins.
- Purpose To finalize profile detail and agree standard of workmanship along with formal discharge of the Planning Condition relating to the external facade.
- Inspection: Arrange to be carried out. Obtain approval of appearance before proceeding. Retain mock-up in undisturbed condition until completion of aluminium installation.

610 SUITABILITY OF SUBSTRATES

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

630 PLYWOOD UNDERLAY

- Standard: Manufactured to an approved national standard and to BS EN 636, section 8 (plywood for use in humid conditions).
 - Sheet size: 2400 or 1200 x 1200 mm and 6 mm thick.
- Laying: Parallel to perimeter edges with cross joints staggered and a 0.5 to 1 mm gap between sheets.
- Fixing: With 25 mm annular ringed shank aluminium or galvanized steel nails, at 300 mm grid centres over the area of each sheet and at 150 mm centres along edges, set in 10 mm from perimeter edges and in pairs across joints.
 - Nail heads: Set flush with or just below surface.

640 TIMBER FOR USE WITH ALUMINIUM WORK

- Quality: Planed, free from wane, splits, pitch pockets, decay and insect attack (ambrosia beetle excepted).
- Moisture content: Not more than 22% at time of fixing and covering.
- Preservative treatment: Organic solvent as section Z12, and Wood Protection Association Commodity Specification C8.

650 LAYING UNDERLAY

- Handling: Prevent tears and punctures.
- Laying: Butt jointed onto a dry substrate.
 - Fixing edges: With aluminium or galvanized steel staples or 20 x 3 mm extra large head clout nails.
 - Do not lay over eaves and drip/ step aluminium underlaps.
- Ventilation paths: Do not obstruct.
- Protection: Keep dry and cover with aluminium at the earliest opportunity.

FIXING

710 FIXINGS FOR CLIPS

- Nails to timber substrates: Aluminium to BS 1202-3 for aluminium clips. Stainless steel (austenitic) for stainless steel clips.
 - Shank type: Annular ringed or helical threaded.
 - Shank diameter: Not less than 2.65 mm.
 - Head: Flat.
 - Length: Not less than 25 mm or equal to substrate thickness.
- Screws to concrete/ masonry substrates: Sherardized or zinc plated steel or aluminium, for aluminium clips, to BS EN 14592. Stainless steel (austenitic) to BS EN 14592 for stainless steel clips.
 - Diameter: Not less than 3.35 mm.
 - Length: Not less than 25 mm.
 - Washers and plastic plugs: Compatible with screws.
- Screws to composite metal decks: Self tapping, as recommended by the deck and aluminium manufacturer/ supplier for aluminium or stainless steel clips.

750 CLIPS FOR FLASHINGS/ CROSS JOINTS

- Material: Cut from same alloy and thickness as that being secured.
- Dimensions:
 - Width: Not less than 50 mm.
 - Length: Sufficient to suit detail.
- Fixing: Secure each clip to substrate with two fixings, not more than 50 mm from edge of strip/ sheet being fixed.

760 CONTINUOUS CLIPS

- Material: Cut from same alloy and thickness as that being secured.
- Dimensions:
 - Width: Sufficient to suit detail.
 - Length: Not more than 1.8 m.
- Fixing: To substrate at 150 mm centres. Welt edge of strip/ sheet being fixed to continuous clip and dress down.

770 WEDGE FIXING INTO JOINTS/ CHASES

- Joint/ Chase: Rake out to a depth of not less than 25 mm.
- Aluminium: Fold 25 mm into joint/ chase with a waterstop welted end.
- Fixing: Aluminium wedges at not more than 450 mm centres, at every change of direction, and with at least two for each piece of aluminium.
- Sealant: Facade / Roofing Sub-contractor to submit proposals.
Application: As section Z22.

780 WEDGE FIXING INTO DAMP PROOF COURSE JOINTS

- Joint: Rake/ Cut out under damp proof course to a depth of not less than 25 mm.
- Aluminium: Fold 25 mm into joint with a waterstop welled end.
- Fixing: Aluminium wedges at not more than 450 mm centres, at every change of direction, and with at least two for each piece of aluminium.
- Sealant: Facade / Roofing Sub-contractor to submit proposals.

Application: As section Z22.

790 SCREW FIXING INTO JOINTS/ CHASES

- Joint/ Chase: Rake out to a depth of not less than 25 mm.
- Aluminium: Fold into joint/ chase and up back face.
- Fixing: Into back face with sherardized, zinc plated steel or aluminium 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 aluminium.
- Sealant: Facade / Roofing Sub-contractor to submit proposals.

Application: As section Z22.

JOINTING

810 FORMING DETAILS

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

860 DRIP/ STEP JOINTS

- Strip/ Sheet from below step: Fold up full height of upstand and fix to top edge.
- Form aluminium underlap/ continuous clip:
 - Cover to roof slope: Not less than 100 mm with anticapillary welt at top edge.
 - Projection: 25 mm for forming into drip welt.
 - Downstand: Not less than 40 mm with welt at bottom edge.
 - Fixing: To roof slope at 100 mm centres, avoiding through fixings at longitudinal joint positions.
- Strip/ Sheet from above step: Fold around underlap projection and single welt to form a drip.

880 SINGLE LOCK WELT JOINTS

- Joint allowances: 100 mm overlap and 50 mm underlap.
- Underlap: Welt and secure with clips, two per bay.
- Overlap: Welt around underlap and clips and dress down.
- Forming: Fold welts lightly to allow freedom of movement.

890 DOUBLE LOCK WELT JOINTS

- Joint allowances: 90 mm overlap, 60 mm underlap.
- Underlap: Welt and secure with clips, one per bay.
- Overlap: Double welt around underlap and clips, and dress down.