

H74 Zinc strip/ sheet coverings/ flashings

To be read with Preliminaries/ General conditions.

TYPES OF ZINC WORK

- 130 CLADDING with VM ZINC QUARTZ ZINC PLUS to hotel entrance
- Cladding system: VM ZINC PLUS on vented WBP 15mm marine grade structural ply.
 - Substrate: Plywood structural frame.
 - Preparation: Not required.
 - Underlay: VM ZINC breather membrane;
Installed between the VM ZINC PLUS and the ply deck, metal flashings to interface.

This membrane must be permeable to water vapour and totally impervious to water, even if the materials are directly in contact with one another (no air gap between layers).

The underlay is laid with laps of minimum 150mm between sheets. ALL MEMBRANES & FIXINGS MUST BE IN ACCORDANCE WITH VM ZINC DETAILS & RECOMMENDATIONS.

- Zinc: Standard temper alloy.
 - Finish: VM ZINC® PLUS with QUARTZ-ZINC® surface appearance VM ZINC® PLUS is VM ZINC® coated on the underside with a protective layer (UMICORE patent) which negates the necessity for any ventilation to the underside of the zinc.

The clips fixing the VM ZINC® are of grade 304/18.10 stainless steel. The clips have a screwhead recess.

The fixed clips are 0.6 mm thick and have 2 holes for securing to the supporting structure.

Sliding clips have a 0.6 mm thick fixed part with 3 drilled holes for securing to the structure, and a 0.4 mm thick moving part.

Sliding clips with a 70 mm slot must be used for all VM ZINC® trays.

The sliding component must always be centred in the slot. Each clip must withstand a pulling force of 50 daN.

Indicative Number of clips to be used:

Middle zone: 330mm centres

Edge zone: 200mm centres

Corner zone: 150mm centres

The number of clips must be established by the Sub-contractor own design calculations, depending on the site specific roofs and Climate Zone .

- Thickness: 0.7 mm.
- Vertical joints: Standing seams.
 - Spacing: As drawings.
- Cross joints: Not permitted.
 - Spacing: As drawings.
- Bottom edge detail: Capped welt dressed around downstand.
- Head detail: Capped welt dressed under weathering.
- Accessories: None.

GENERAL REQUIREMENTS/ PREPARATORY WORK

510 WORKMANSHIP GENERALLY

- Standard: Generally to CP 143-5.
- Fabrication and fixing: To provide a secure, free draining and completely weathertight installation.
- Operatives: Trained in the application of zinc coverings/ flashings. Submit records of experience on request.
- Preforming: Measure, mark, cut and form zinc prior to assembly wherever possible.
- Metal temperature: Do not form zinc when the metal temperature is below the minimum recommended for working by the manufacturer.
- 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.
- Sharp metal edges: Fold under or remove as work proceeds.
- Sealants: Do not use in joints to attain waterproofing.
- Solder: Use only where specified.
- Finished zinc 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 SOLDERING AND NAKED FLAME PREHEATING

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

530 INTEGRITY OF ZINC

- Requirement: Design coverings/ flashings and methods of attachment to prevent loss of weathertightness and permanent deformation due to wind pressure or suction.
- Structural requirements:
 - Wind loads: Refer/seek SE detail design advise.

550 LIGHTNING PROTECTION

- Zinc coverings: Attach the following to a lightning protection system:
 - Electrical continuity: Provide between zinc strips/ sheets via welting of joints.

555 LAYOUT

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

610 SUITABILITY OF SUBSTRATES

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

620 PREPARATION OF EXISTING TIMBER SUBSTRATES

- Remedial work: Adjust boards to level and securely fix. Punch in any protruding fasteners and plane or sand to achieve an even surface.
- Defective boards: Give notice.
- Moisture content: Not more than 22% at time of covering.

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 galvanized, sherardized or stainless 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 ZINC 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.

645 NEEDLE PUNCHED NONWOVEN POLYESTER GEOTEXTILE UNDERLAY

- Manufacturer: Contractor's choice.
 - Product reference: Contractors Choice.
- Weight: 200 g/m².
- Recycled content: 90% (minimum) to BS EN ISO 14021.

650 LAYING UNDERLAY

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

655 LAYING UNDERLAY

- Handling: Prevent tears, punctures and removal of sanded finish.
- Laying: Overlap jointed, parallel to eaves, onto a dry substrate.
 - Fixing edges: With galvanized, sherardized or stainless steel clout nails at close centres.
- Protection: Keep dry and cover with zinc at the earliest opportunity.

FIXING ZINC

710 FIXINGS FOR CLIPS

- Nails to timber substrates: Galvanized or sherardized steel to BS 1202-1 for zinc clips. Stainless steel (austenitic) for stainless steel clips.
 - Shank type: Annular ringed, helical threaded, or serrated.
 - 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 to BS EN 14592 for zinc clips. 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 plastics plugs: Compatible with screws.
- Screws to composite metal decks: Self tapping as recommended by the deck and zinc manufacturer for zinc or stainless steel clips.

- 715 ZINC CLIPS
- General: Cut from strip/ sheet with clip length in direction of rolling.
- 720 STANDING SEAM FIXED CLIPS
- Zinc clips: Cut from same thickness of metal as that being secured.
 - Dimensions:
 - Width: Not less than 30 mm.
 - Base length: Not less than 20 mm.
 - Upstand: To suit standing seam profile.
 - Stainless steel (austenitic) clips: As supplied or recommended by the zinc manufacturer to suit project conditions.
 - Fixing: Secure each clip to substrate with two fixings.
- 725 STANDING SEAM SLIDING CLIPS
- Zinc clips: Cut from same thickness of metal as that being secured.
 - Fixed component dimensions:
 - Width: Not less than 90 mm.
 - Base length: Not less than 20 mm.
 - Upstand: 20 mm, with slot for locating sliding component.
 - Sliding component dimensions:
 - Width: Not less than 30 mm.
 - Upstand: To suit standing seam profile.
 - Stainless steel (austenitic) clips: As supplied or recommended by the zinc manufacturer to suit project conditions.
 - Fixing: Secure each clip to substrate with three fixings.
- 745 CAPPED WELT CLIPS
- Material: Zinc of same thickness as that being secured.
 - Dimensions:
 - Width: Not less than 50 mm.
 - Length: Sufficient to fold into welts of adjoining strips/ sheets.
 - Fixing: Secure each clip to substrate with two screws.
- 750 CLIPS FOR FLASHINGS/ CROSS JOINTS
- Material: Zinc of same thickness as that being secured.
 - Dimensions:
 - Width: Not less than 50 mm.
 - Length: To suit detail.
 - Fixing: Secure each clip to substrate with two fixings not more than 50 mm from edge of strip/ sheet being fixed. Clips folded around edges of strip/ sheet to be turned over 25 mm.
- 760 CONTINUOUS CLIPS
- Material: Zinc of same thickness as that being secured.
 - Dimensions:
 - Width: To suit detail.
 - Length: Not more than 1800 mm.
 - Fixing: To substrate at 200 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.
- Zinc: Fold 25 mm into joint/ chase with a waterstop weltd end.
 - Fixing: Zinc or lead wedges at not more than 450 mm centres, at every change of direction, and with at least two for each piece of zinc.
- Sealant: Contractor's choice.
 - Application: As section Z22 .

790 SCREW FIXING INTO JOINTS/ CHASES

- Joint/ Chase: Rake out to a depth of not less than 25 mm.
- Zinc: Fold into joint/ chase and up back face.
 - 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.
- Sealant: Contractor's choice.
 - Application: As section Z22.

JOINTING ZINC

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.

825 SOLDERING DETAILS

- Solder (not less than 40% tin content) and flux: As recommended by the zinc manufacturer.
- Flux residues: Wash away as work proceeds.
- Seams: Neat and consistent with an overlap of clean zinc as recommended for the particular joint by the zinc manufacturer.

830 STANDING SEAM JOINTS

- Joint allowances: 45 mm overlap, 35 mm underlap and 5 mm gap for thermal movement. Preformed interlocking profiles for overlap and underlap are permitted.
- Clip positions:
 - Fixed clips: Determined by Contractor.
 - Sliding clips: Determined by Contractor.
- Forming: Double welt overlap and clips around underlap to form a standing seam 25 mm high of consistent cross section.

835 ANGLE STANDING SEAM JOINTS

- Joint allowances: 45 mm overlap, 35 mm underlap and 5 mm gap for thermal movement. Preformed interlocking profiles for overlap and underlap are permitted.
- Clip positions:
 - Fixed clips: Determined by Contractor.
 - Sliding clips: Determined by Contractor.
- Forming: Single welt overlap and clips around underlap, fold at right angles to upstand to form a standing seam 25 mm high of consistent cross section.

860 DRIP/ STEP JOINTS

- Strip/ Sheet from below step: Fold up full height of upstand and fix to top edge.
- Form zinc 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 joints in direction of fall positions.
- Strip/ Sheet from above step: Fold around underlap projection and single welt to form a drip.

880 SINGLE LOCK WELT JOINTS

- Joint allowance: 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.

885 SINGLE LOCK WELT WITH CHECK WELT JOINTS

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

890 DOUBLE LOCK WELT JOINTS

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