

ROOFING**1 GENERAL****1.1 INSPECTION****Notice**

Give sufficient notice so that inspection may be made of:

- Roof framing during construction.
- Those parts of the roofing, vapour barrier, insulation and roof plumbing installation which will be covered up or concealed.

1.2 SUBMISSIONS**Samples**

Submit samples of the following showing the range of variation available:

- Currugated and flat metal roof sheeting
- Roof cappings, flashings, gutters, downpipes

2 PRODUCTS**2.1 MATERIALS AND COMPONENTS****Fasteners**

Self-drilling screws: Corrosion resistant screws to approval of Engineer.

Nuts and bolts: Corrosion resistant fastenings to approval of Engineer.

Fastenings to timber battens or purlins: Provide fastenings just long enough to penetrate the thickness of the timber without piercing the underside.

2.2 CORRUGATED METAL ROOFING AND CLADDING**General**

Provide a proprietary system of preformed corrugated sheets and all purpose-made accessories required to complete the installation to roof framing or wall framing. Refer to **Corrugated Sheet Roofing Materials Schedule** for details.

2.3 FLAT SHEET METAL ROOFING AND CLADDING**General**

Provide a system of flat metal sheets and all purpose-made accessories required to complete the installation to roof framing or wall framing. Refer to **Flat Sheet Roofing Materials Schedule** for details.

2.4 GLAZED ROOFING AND SKYLIGHTS**General**

Provide a proprietary overhead glazing system fixed to glazing bars or directly to the roof framing. Provide all purpose-made accessories required to complete the installation. Refer to **Glazed Roofing Materials and Skylight Schedule** for details.

2.5 ROOF VENTILATORS**General**

Provide proprietary roof mounted ventilators and all purpose-made accessories required to complete the installation where shown on the drawings to ventilate the roof space.

Provide fabricated ventilators in walls as shown on the drawings to ventilate the roof space.

Refer to **Roof Ventilators Schedule** for details.

3 EXECUTION

3.1 INSTALLATION

Protection

Keep the roofing and rainwater system free of debris and loose material during construction, and leave them clean and unobstructed on completion. Repair damage to the roofing and rainwater system.

If it is necessary to repair minor damage to metal roofing, do so immediately after the damage has occurred. The Contractor is take care to not damage other surfaces during the repair works.

Thermal movement

Provide for thermal movement in the roof installation and the structure, including movement in joints and fastenings.

3.2 SHEET METAL ROOFING AND CLADDING

Roofing sheet installation

Fixings: Provide all fixings required to fix the roof sheeting to the framing so that the entire roof covering is waterproof and secure. All loose edges are to be fixed down to ensure that they cannot get loose in high winds.

Expansion joints: refer to drawings for locations of expansion joints in roofs and details of construction.

Ridges and eaves

Treat ends of sheets as follows:

- Project sheets 50 mm into gutters.
- Close off ribs of ribbed sheeting at bottom of sheets using mechanical means or with purpose-made end caps.
- Turn pans of ribbed sheeting up at tops and down into gutters by mechanical means.
- Provide pre-cut notched eaves flashings and birdproofing wire mesh where necessary.

Ridge and eaves capping

Finish off along ridge and side eaves edges with purpose-made ridge capping and eaves cappings.

End laps

Where end laps are unavoidable in roof sheeting, and the sheet profile is not suitable for interlocking or contact end laps, construct a stepped type lap. Refer to details on drawings as required.

Length of lap (mm): Laps to ends of sheets should not be less than 150mm and sealed with a continuous line of silicone sealant between the sheets of roofing.

Curved corrugated sheet

Form by rolling from material recommended for curving. Minimise crimping or creasing across the face of the sheet. Trim off crimped or creased edges and ends.

K-Span roofing where identified on the drawings is to be strictly controlled during the installation process to ensure that the completed work is of a high standard.

Cladding sheet installation

Fixings: Provide all fixings required to fix the wall cladding sheeting to the framing so that the entire wall is waterproof and secure. All loose edges are to be fixed to ensure that they cannot get loose in high winds.

Expansion joints: refer to drawings for locations of expansion joints in walls and details of construction.

Flashings: Flashings are required at the top, sides and bottom of all metal wall cladding to ensure that the wall is waterproof in all weather conditions.

Metal separation

Prevent direct contact between incompatible metals, and between green hardwood and aluminium or coated steel, by either:

- Applying an anti-corrosion, low moisture transmission coating to contact surfaces.
- Inserting a separation layer.

3.3 GLAZED ROOFING AND SKYLIGHTS

Installation

Fixing: Fix all glazed roof panels and skylights in accordance with the drawings.

Flashings: Flashings are required at the top, sides and bottom of all glazed roof panels and skylights to ensure that the roof is waterproof in all weather conditions.

3.4 ROOF VENTILATORS

Installation

Fixing: Fix roof ventilators in accordance with the manufacturers construction details or in accordance with the drawings for fabricated ventilators.

3.5 ROOF PLUMBING

General

Provide the flashings, cappings, gutters, rainwater heads, outlets and downpipes necessary to complete the roof system.

Jointing sheet metal rainwater goods

Butt joints: Make joints over a backing strip of the same material.

Soldered joints: Do not solder aluminium or aluminium/zinc-coated steel.

Sealing: Seal fasteners and mechanically fastened joints. Fill the holes of blind rivets with silicone sealant.

Jointing system: Refer to the Gutter and Downpipe Schedule for specific jointing details for each type of element.

Flashings and cappings

Installation: Flash roof junctions, upstands, abutments and projections through the roof. Preform to required shapes where possible. Cut, notch, bend or dress down as necessary to follow the profile of adjacent surfaces. Lap joints 150 mm in running lengths. Provide matching expansion joints at 6 m maximum intervals.

Upstands: Flash projections above or through the roof with two part flashings, consisting of a base flashing and a cover flashing, with at least 100 mm vertical overlap. Provide for independent movement between the roof and the projection.

Wall abutments: Provide overflashings where roofs abut walls, stepped to the roof slope in brickwork.

- In masonry: Build cover flashing at least 100mm into the wall at least 250mm above the roof level. Provide base flashing on roof and provide at least 100mm vertical overlap.
- In concrete: Turn cover flashing at least 30 mm into sawcut grooves at least 250mm above the roof level, wedge at 200 mm centres with compatible material and render over top of flashing. Provide base flashing on roof and provide at least 100mm vertical overlap.

Fixing to pipes: Solder, or seal with neutral cured silicone rubber and either of the following:

- Secure with a clamping ring.
- Provide a proprietary flexible clamping shoe with attached metal surround flashing.

Gutters

Prefabricate gutters to the required shape where possible. Form stop ends, bends and returns. Provide overflows to prevent back-flooding.

Gutter and sump support: Provide framing and lining to support valley gutters, box gutters and sumps. Line the whole area under the gutters and sumps.

Support: Steel straps as shown on drawings or as approved by the Engineer.

Lining: Timber boards or plywood as shown on drawings or as approved by the Engineer.

Valley gutters: Profile to suit the valley boarding. Nail or screw to the valley boarding at the top end to prevent the gutter creeping downwards.

Gratings and guards: Provide removable gratings over rainwater heads and sumps:

- Type: Wire mesh cages reinforced with steel bars where required due to size and expected snow loads. Refer to drawings for details.

Expansion joints: Provide expansion joints in guttering longer than 30 m:

- Type: Refer to drawings for details.

Downpipes

Prefabricate downpipes to the required section and shape where possible. Connect heads to gutter outlets and, if applicable, connect feet to rainwater drains.

Access cover: Provide a removable watertight access cover at the foot of each downpipe stack if the downpipe is connected to rainwater drains.

Downpipe support: Provide supports and fixings for downpipes.

3.6 ROOF MOUNTED EQUIPMENT ACCESS

Walkway

Product: Provide proprietary walkway system to locations as shown on drawings. Provide fabricated system constructed as shown on drawings. Fabricate in accordance with metalwork section of the specification.

Installation: Install proprietary systems in accordance with manufacturers details and as identified on drawings.

3.7 COMPLETION

Roof Inspection

The Contractor is to closely inspect the entire roof covering and metal cladding to walls at completion of the works.

Make good any defects or damage to the sheeting, cappings or flashings. Remove all loose metal and other rubbish, spare nails, screws, filings and other debris.

Clean down the roof, gutters, downpipe outlets to ensure that it is good condition ready for occupation.