

8. MB - SECTION 8 – SHEET METAL FLASHINGS

8.1. General

- 8.1.1. Sheet metal flashing need not cover granular surfaced modified bituminous membrane flashing except where required by the building code.
- 8.1.2. Sheet metal flashings shall continuously cover non-granular surfaced S.B.S. membrane flashing installed at horizontal to vertical roof junctions.
- 8.1.3. Sheet metal flashing shall be supported by and mechanically fastened to continuous solid backing or wood blocking.
- 8.1.4. Sheet metal flashing shall be installed as soon as practical to protect the flashing membrane from damage.
- 8.1.5. Protect the metal finish from damage during shipping and handling.
- 8.1.6. The installation of sheet metal flashing of all metal types forming part of the roofing system shall be installed by the ARCA contractor's own work force.
- 8.1.7. When flashing lengths exceeds 1500 mm (5 ft.) additional attachment is required at the midpoint of the flashing length at both the interior and exterior flashing faces.
- 8.1.8. No fastener shall penetrate the exposed top surface of the sheet metal flashing.
- 8.1.9. In high wind areas, a professional should design flashing securement.

8.2. Weights and Thicknesses

- 8.2.1. The weight and thickness limits shown in the following table shall be followed within the CSA tolerances designated for the metal type shown and does not include the metal finish. The minimum weight or thickness of the sheet metal flashing shown in the table must be increased to the next heavier dimension when the unfastened vertical length of the sheet metal exceeds 457mm (18"), when measured from its main anchorage point.

Metal	MINIMUM			MAXIMUM		
	Gauge	Inches	mm	Gauge	Inches	mm
Aluminum	22	0.021	0.53	16	0.044	1.12
Copper	16 oz.			20 oz.		
Coated Steel	26	0.020-0.022	0.50-0.56	22	0.030-0.034	0.76-0.87
Stainless Steel	28	0.014	0.36	22	0.027	.69

8.3. Fabrication

- 8.3.1. Sheet metal flashing shall be fabricated to ARCA Warranty Ltd. profiles and standards.
- 8.3.2. Sheet metal flashings, fasteners and hook strip shall be corrosion resistant.
- 8.3.3. Individual flashing sections shall not exceed 3000 mm (10 ft.) in length.
- 8.3.4. Where exposed, sheet metal flashing edges shall be hemmed, incorporating a minimum 13 mm (1/2") wide single fold drip edge along their bottom edge.
- 8.3.5. When covered by another sheet metal flashing, edges may be left raw cut. Raw cut edges can occur at flashing corners, drip edge flashing end laps and at two (2) piece wall flashing junctions.
- 8.3.6. When joined with S-lock seams, the flashing end joints shall be fabricated to permit an approximate 25 mm (1") insert, with a minimum tolerance of 6 mm (¼"), in addition to the allowance for thermal movement.
- 8.3.7. Vertical corner seams may be lapped and mitered when not joined with a standing seam.

- 8.3.8. A corner formed at sheet metal flashing junctions may be joined with standing seams extending a minimum distance of 25 mm (1") above the flashing surface secured with a single fold lock or double seam.
- 8.3.9. Where a water tight joint is required at miscellaneous flashing or building envelope junctions, the joint shall be continuously caulked with a compatible sealant tooled to shed water.
- 8.3.10. The severity of oil canning can be reduced by one or more of the following means:
 - 8.3.10.1. Use a heavy gauge metal that is more rigid
 - 8.3.10.2. Use metal with low-gloss finish or textured by embossing or striations to reduce visual effects.
 - 8.3.10.3. When the face exceeds 250 mm (10"), fabricate flashing in two pieces or use stiffening ribs, v-groove or cross breaks.
- 8.3.11. Hook strips shall be fabricated from minimum 24-gauge corrosion resistant sheet metal, in minimum lengths of 1/3 of the cap flashing length, 75 mm (3") wide incorporating a minimum 13 mm (1/2") wide bottom kick-out. Hook strips shall be fastened to wood blocking with a minimum of two (2) fasteners placed at maximum 300 mm (12") centres. Spiral or annular grooved coated nails or corrosion resistant pan head wood screws shall be placed 25 mm (1") above the bottom of the hook strip kick-out. The hemmed sheet metal cap flashing drip edge shall fully cover and engage the hook strip kick-out to form a locked edge.

8.4. Wall Flashings

8.4.1. Base Flashings

- 8.4.1.1. Where required, the base flashing shall be mechanically fastened at maximum 600 mm (24") centres placed approximately 175 mm (7") above the membrane cap sheet or concrete paver or ballast surface.
- 8.4.1.2. The upper edge of base flashings shall be covered with an overlapping cap or counter flashing a minimum distance of 50 mm (2").

8.4.2. Counter Flashings

- 8.4.2.1. When the membrane flashing terminates on a smooth vertical surface, the upper termination of the membrane flashing (exposed edge) shall be continuously covered with either a reglet or kick-out style counter flashing.
- 8.4.2.2. Counter flashings shall be fabricated in maximum 100 mm (4") widths excluding a drip formed along its lower edge to shed water.
- 8.4.2.3. Counter flashings shall overlap sheet metal base flashings a minimum distance of 50 mm (2").
- 8.4.2.4. For a reglet style counter flashing detail, the wall reglet opening shall be straight, of uniform width ranging between 12.7 mm (1/2") and 19 mm (3/4") wide and not less than 19 mm (3/4") deep. The reglet counter flashing shall be mechanically fastened into the reglet opening at maximum 600 mm (24") centres. The reglet opening shall be continuously sealed with a compatible sealant tooled to shed water.
- 8.4.2.5. Where a reglet style detail is impractical, a kick-out style counter flashing may be substituted. The kick-out style flashing shall incorporate single fold hem along both its upper and lower edges. Kick-out style counter flashing shall be mechanically fastened to solid wall backing at maximum 600 mm (24") centres with fasteners placed immediately below the upper kick-out lip. A continuous metal bar may be incorporated over the flashing

to ensure uniform contact is maintained. The upper kick-out lip shall be continuously sealed to the vertical substrate with a compatible sealant tooled to shed water.

8.4.3. Cap Flashings

- 8.4.3.1. Where cap flashing is required at the top of a wall or parapet, they shall completely cover and be supported by continuous wood blocking capable of providing sufficient holding force to anchor nail or screw fasten the cap flashing.
- 8.4.3.2. Cap flashings shall incorporate a minimum 50 mm (2") wide vertical face, excluding the minimum 13 mm (1/2") wide bottom drip edge.
- 8.4.3.3. Where membrane flashing does not cover the blocking, a waterproof membrane shall cover the blocking and extend a minimum distance of 50 mm (2") past the wood blocking.
- 8.4.3.4. When wall or parapet exceeds 100 mm (4") in width, the top of the wood blocking shall be sloped towards the roofing at a minimum slope of 1:50 (1/4"/ft.).
- 8.4.3.5. The vertical flashing faces shall overlap the wall finish a minimum distance of 25 mm (1"), excluding the drip.
- 8.4.3.6. When the parapet width (girth) exceeds 400 mm (16"), cap flashing sections shall not exceed 1500 mm (5 ft.) in length.
- 8.4.3.7. Cap flashing sections shall use concealed fasteners and shall be secured to the wood blocking with galvanized roofing nails placed both in the horizontal and vertical sheet metal flanges of the S-lock end joints.
- 8.4.3.8. Cap flashing exceeding 1500 mm (5 ft.) in length require additional exposed fasteners or hook strip fastening to the wood blocking at the midpoint of the cap flashing length for both the interior and exterior flashing faces.

8.5. Roof Edge Flashings

8.5.1. General

- 8.5.1.1. A modified bituminous membrane perimeter may be finished with a cant edge, a parapet or a drip edge flashing detail to shed water and to protect the modified roof membrane at roof edges.
- 8.5.1.2. When horizontal roof edge flashing width exceeds 100 mm (4"), the top of the wood blocking shall be sloped towards the roofing at a minimum slope of 1:50 (1/4"/ft.).
- 8.5.2. Cant Edge Flashing
 - 8.5.2.1. Where a cant edge flashing is used, both the non-granule surfaced membrane flashing and sheet metal flashing shall be continuously supported by a minimum 75 mm (3") high wooden cant fastened to the structure.
 - 8.5.2.2. A one-piece sheet metal cant flashing shall be fabricated to cover the membrane flashing installed over the cant. The flashing shall extend horizontally approximately 25 mm (1") over the membrane measured from the toe of the cant. The exterior vertical cant flashing face shall overlap the completed wall surface and contain a drip edge of a minimum of 25mm (1").
 - 8.5.2.3. Cant edge flashing shall be joined by S-lock end joints and concealed fastened to the exterior and cant faces of the wood cant strip with galvanized roofing nails placed in the flashing end joint flange.
 - 8.5.2.4. Exposed fasteners are not permitted at securement location.

8.5.3. Parapet Flashing

- 8.5.3.1. The parapet flashing may be fabricated in one-piece for low parapets projecting 200 mm (8") and less than above the membrane surface.
- 8.5.3.2. The parapet flashing may be of two-piece construction consisting of a cap and base flashing for parapet exceeding 200 mm (8") in height.

8.5.4. Drip Edge Flashing

- 8.5.4.1. Granular surfaced modified bituminous flashing membrane may be terminated to a continuous sheet metal drip edge flashing located at the top exterior edge of the parapet or structural deck's perimeter wood blocking.
- 8.5.4.2. The sheet metal drip edge flashings shall be fabricated with horizontal flanges between 100 mm (4") and 125 mm (5") wide. The vertical fascia flange shall not exceed 100 mm (4") in width on the vertical surface, excluding the drip. When fascia flange width exceeds 100 mm (4"), a two-piece flashing shall be used.
- 8.5.4.3. A minimum 13 mm (1/2") vertical extension to the top of the fascia flange, to conceal exposed membrane edges is optional.
- 8.5.4.4. The horizontal flange shall be mechanically fastened to the blocking with fasteners staggered front to back at maximum 200 mm (8") centres. Drip edge sections shall be joined with minimum 100 mm (4") wide flashing end joint overlap. The top surface of the exposed horizontal flange shall be primed with a compatible primer to ensure proper adhesion of the flashing membranes.

8.6. Control Joint Flashings

- 8.6.1. Expansion and roof area dividers shall extend a minimum distance of 200mm (8") above the membrane surface. Membrane level control joints are not accepted unless otherwise approved.
- 8.6.2. When a roof area divider is fully covered by a granular surfaced membrane flashing cap sheet, sheet metal flashing is not required.
- 8.6.3. Roof expansion joints with a width over 400mm (1") require a sloping sheet metal cap flashing regardless of the membrane flashing cap sheet surface. The cap flashing shall be fabricated with a minimum slope of 1:50 (1/4" /ft.) and have an allowance made for the thermal movement anticipated at the expansion joint.

8.7. Scupper Drains

- 8.7.1. Sheet metal scupper drains may be either through wall or open scupper type.
- 8.7.2. Sheet metal scupper drains shall be sized to extend beyond the exterior wall finish 50mm (2") and to provide for a minimum 100 mm (4") wide base and wall flanges formed at the interior faces of the scupper drain opening.
- 8.7.3. Through wall type scuppers shall be four (4) sided so the upper scupper opening surface/substrate is completely covered with sheet metal.
- 8.7.4. To aid roof drainage, the scupper assembly shall be positioned below finished membrane surface level.
- 8.7.5. Where control of drainage is required, the scupper assembly may include a water tight external hopper and an attached downpipe.
- 8.7.6. Splash pads shall be installed beneath scupper outlets discharging run off water onto lower roofs.

8.8. Miscellaneous Sheet Metal Flashings

- 8.8.1. Miscellaneous non-curbed sheet metal flashings found at roof jacks, gum boxes, ventilators, goosenecks membrane penetrations and scuppers shall be water tight, incorporate a continuous one-piece horizontal flange, with no open corners, using a double seam or approved lock to secure the deck flange to the vertical flashing body.
- 8.8.2. Horizontal flanges shall be fabricated no smaller than 100 mm (4") nor larger than 200 mm (8") in width.
- 8.8.3. Watertight sheet metal flashing joints shall be soldered or welded.
- 8.8.4. Watertight aluminum flashing joints must be welded.
- 8.8.5. When approved, miscellaneous specialty flashings may be substituted for fabricated sheet metal flashings.