PART 0 DESIGN STANDARDS

0.01 GENERAL DESIGN GUIDELINES

A. Design sheet metal to shed water.

B. Sheet metal coping caps shall be used at the top of parapet walls and masonry walls.

1. Caps shall be sloped to the roof interior. Provide adequate pitch and edge detail to prevent drainage onto exterior face of building.
2. Provide continuous clip at exposed face.
3. Provide 45-degree hemmed drip edge at bottom of exposed face.
4. Provide continuous solid support under copings.

C. Reglets and counterflashing

1. At masonry parapets, cast reglet into masonry joint and use cotton weep ropes and weep tubes to facilitate removal of moisture from wall cavity.
2. At surfaces other than masonry, two-piece, surface mounted reglet and counterflashing shall be used to terminate completed base flashings, termination bars (EPDM system), and 3-course treatments (BUR system).
3. Wherever possible, maintain constant reglet elevation at entire roof perimeter (avoid stepping reglet).
4. Reglet elevation shall consider minimum flashing height required at high point of any insulation elevation, including any crickets/saddles that intersect the perimeter details.

D. Edge metal shall have raised (gravel stop-style) edge to prevent water from draining onto exterior face of building.

1. Provide continuous clip at exposed face.
2. Provide 45-degree hemmed drip edge at bottom of exposed face.

E. Expansion joints shall be detailed using metal covers. Use of bellows-style covers is not approved, unless absolutely necessary. If used, bellows-style covers shall be installed only after watertight, continuous; single-ply membrane drapes are installed over the joints.

F. Pre-manufactured fascia systems

1. Pre-manufactured fascia systems are not recommended for use with built-up roof systems.
2. Specify pre-manufactured fascia system at single-ply roof system.
3. Verify the required face height and specify the model number accordingly.
4. The pre-manufactured fascia system shall be supplied by the membrane manufacturer, and shall be included under the total system warranty.

G. Locate expansion joints within 2’ of corners and intersections and maximum 15’ spacing elsewhere (10’ preferred). Break counterflashing, coping cap, edge metal sections, and similar sheet metal constructions where they cross building expansion joints.

H. Joint type at each roof related sheet metal component shall be indicated in the detail drawings.

I. Adjoining coping cap and gravel stop sections shall be joined with the use of splice plates or cover plates, with full sealant beads between plates and sheet metal flashing.

J. Specify galvanized or stainless steel for all components that require field soldering or welding. Pre-finished steel cannot be specified where a solder or weld joint is required. Examples include pitch pans, pipe jacks, and scupper inserts.

K. For most situations, specify pre-finished steel for components where soldering or welding of joints is not required, including counterflashings, copings, edge metal, fascia extensions, expansion joint covers, control joint covers, etc. Galvanized steel shall be used for associated concealed cleats.

L. Gutters and downspouts are not recommended but may be used when necessary.

1. Minimum one downspout per 50 lineal feet of gutter, or oversize gutter by 25% for every additional 10 lineal feet of downspout separation
2. Provide overflow at header.
3. Open front downspout style is preferred. Space braces far enough apart to prevent inadvertent creation of a ladder.
4. Design, detail, locate, and install to discourage vandalism and unauthorized roof access.
5. Surface discharge onto sidewalks or pavement is prohibited.

M. Prohibited materials: Plastic, PVC, lead, zinc, and “weathering” type materials.

PART 1 GENERAL

1.01 QUALITY ASSURANCE

A. In the absence of other information, standards of the following organizations shall apply

1. Sheet Metal and Air Conditioning Contractors National Association (SMACNA) Architectural Sheet Metal Manual, current edition
2. National Roofing Contractors Association (NRCA) roofing and Waterproofing Manual, current edition

1.02 WARRANTY

A. Manufacturer’s 20-year paint film warranty on prefinished sheet metal

B. If pre-manufactured metalwork is used, include under provisions of roof membrane manufacturer’s total system warranty.

PART 2 PRODUCTS

2.01 MATERIALS

A. Sheet metal gauges or thicknesses shall be as recommended by SMACNA manual for specific exposed face girths.

B. Continuous clips shall be fabricated of material one gauge heavier than connecting component.

2.02 MATERIAL SPECIFICATIONS

A. Aluminum

1. Alloy and temper 3003-H14.
2. Minimum gauge .040”
3. Only aluminum or stainless steel fasteners shall be used with aluminum metal work.

B. Copper

1. Minimum 16 oz.
2. Only copper or copper alloy fasteners shall be used with copper metal work.
3. Copper metal work shall be soldered using 50/50 solder and neutralize flux after soldering.

C. Galvanized steel

1. G-90 material

2. Minimum 24 gauge

D. Stainless steel

1. Type 304L or 316L.
2. Minimum 24 gauge

E. Kynar prefinished steel or aluminum

1. Pre-finished steel is preferable to pre-finished aluminum, due to steel's lower coefficient of expansion and contraction.
2. Sheet steel shall be minimum 24 ga. Sheet aluminum shall be minimum .040".

2.03 FASTENERS

A. Corrosion resistant fasteners as appropriate for each substrate

B. Where fasteners are exposed, provide stainless steel, watertight, EPDM sealing washers.

C. Continuous metal cleats are preferred for securing counterflashing.

D. 12" o.c. maximum spacing

E. Conceal fasteners to the greatest extent possible; limit exposed fasteners to vertical surfaces.

F. Nylon or plastic anchors are not approved.

2.04 OTHER MATERIALS

A. Membrane Closure/Cover: Sheet waterproofing underlayment at parapets, expansion joints, control joints, platform curbs, etc.

B. Sealants and Related Accessories: See standard Section 07920

2.05 PRE-MANUFACTURED ROOF EDGE SYSTEM

A. Pre-manufactured system of snap-on fascia covers, anchor bars, fasteners, factory fabricated mitered inside and outside corners, and accessories

B. Manufacturer approved by the roof membrane manufacturer.

PART 3 EXECUTION

3.01 FABRICATION

A. All exposed edges of cut sheet metal shall be hemmed 1/2" minimum.

B. Slightly over-break counterflashing as required to provide spring tension against base flashing.

C. Fold and return counterflashing at exposed ends, to provide fully closed, neatly finished ends.

D. Maintain continuity at corners and jogs.

E. End dams with overlapped and sealed corners are required at terminations and transitions.

F. Locate seams above highest anticipated water level.

3.02 DISSIMILAR METALS

A. Dissimilar materials in contact, which are subject to electrolysis, shall be protected against such action prior to installation. Protective materials shall not be visible after installation. Protect metals by coatings recommended by manufacturer, or separated by felt, EPDM, or roof cement.

END OF SECTION 07620