07 60 00 – Flashing and Sheet Metal

1. General

   A. The major considerations with metal flashings are longevity (including appearance), compatibility with other materials and thermal expansion. All flashing should be detailed to permit thermal movement and to shed water mechanically by lapping. The detail shall be designed without the use of sealants. Thermal expansion will generally, over time, exceed the performance capacity of most sealants.

   B. The roof shall be kept clean of penetrations and equipment. A metal roof shall not be installed if there is equipment that needs to be maintained or if there is an excessive number of penetrations planned. The roof design shall be kept simple. Complex shapes quickly nullify the advantage of metal systems. Continuous panels shall be used if possible rather than joining smaller panels using exposed fasteners.

   C. The minimum slope on standing-seam roofing is 4 inches per foot.

   D. All sheet metal materials should be designed for easy removal without interfering with building operations. No conduit or piping should be attached to coping covers. Where pipes cross over flashings or wall tops, there should be sufficient clearance to permit removal of metal without disturbing the pipes. SMACNA and NRCA manuals shall be used as a reference for details. Details and dimensions shall be shown, not simply referenced from the manuals. Do not call for "...design and installation in accordance with SMACNA Manual." Material thickness should follow SMACNA guidelines relative to use. See SMACNA appendices for comprehensive material data and guidelines for consideration in the selection of each material.

   E. All metals used in the roofing assembly shall be of the same type and material. Accessory metal should provide a life expectancy commensurate with that of the membrane roofing assembly. Mechanical or interlocking joints are preferred to ensure that wide metal sections stay in contact and do not admit water through open laps at metal joints.

      1. Face fastening of accessory metal shall be avoided.

      2. Lead- or nylon-based expansion fasteners shall be used to secure accessory metal, not powder-actuated fastening devices.

      3. Mechanical closures shall be specified at all wide metal joints over open spans to ensure watertight integrity of the metal assembly.

      4. A bituminous waterproofing membrane shall be used under all complex metal junctures or in areas where waterproofing integrity is imperative.

5. Preferred materials: copper, lead-coated copper, stainless steel, terne-coated stainless steel, aluminum and lead.

6. Prohibited material: galvanized steel.

7. All gutters and downspouts should be made of a material capable of being soldered. The use of gutters that are pop riveted and caulked is not permitted. Allow for an ample number of expansion joints.

8. Metal flashing applications must be clearly specified and isometric drawings provided as necessary.

9. A reglet having an upward slope is preferred; caulk with a specified caulking compound.

10. Wood blocking attached on the perimeter of the roof must be pressure treated and provided in strict accordance with FM Global requirements for an I-90 rating.

11. Reference latest edition of the FM Global Approval Guide for approved perimeter flashing assembly manufacturers.

12. Metal embedded into the roofing system is not recommended. If embedded, metal edge flashing is required and must be elevated so that water does not drain over the area containing embedded metal.

13. With the use of metal gravel guards and fascia, temperature movements in heavy gauge metal must be considered. If heavy gauge metal is used, gravel guards should not be heavier than 24 to 26 gauge stainless steel, 16-ounce copper or 30 to 40 mil aluminum in maximum 10’ lengths. Hook strips should be one gauge heavier than the fascia.

14. Continuous metal cleats should be used to secure the face side of metal coping, gravel stops and/or fascia metal. Cleats should be one gauge heavier than the coping or gravel stop.

15. Metal gutter blow off can be prevented by placing metal straps around the gutter exterior at intervals of 10 feet and securely anchoring the straps to the roof and wall.

16. Gutters should be designed so they can be replaced without damaging the roof edges.