

**SECTION 07 60 00
FLASHING AND SHEET METAL**

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Drawings and general provisions of the contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this section.

1.2 RELATED WORK

- A. Sealant compound and installation: Section 07 92 00, JOINT SEALANTS.
- B. Section 04 20 00 UNIT MASONRY
- C. Section 01 43 39 MOCKUP REQUIREMENTS
- D. Section 04 43 00 NATURAL STONE
- E. Section 01 33 23 SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES
- F. Section 07 92 00 JOINT SEALANTS

1.3 SUBMITTALS

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Shop Drawings:
 - Flashings
 - Expansion joints
- C. Manufacturer's Literature and Data:
 - Thru wall flashing
 - Nonreinforced, elastomeric sheeting

1.4 APPLICABLE PUBLICATIONS

- A. The publications listed below for a part of this specification to the extent referenced. The publications are referenced in the text by the basic designation only.
- B. Aluminum Association (AA):
 - AA-C22A41.....Aluminum Chemically etched medium matte, with clear anodic coating, Class I Architectural, 0.7-mil thick
 - AA-C22A42.....Chemically etched medium matte, with integrally colored anodic coating, Class I Architectural, 0.7 mils thick
 - AA-C22A44.....Chemically etched medium matte with electrolytically deposited metallic compound, integrally colored coating Class I Architectural, 0.7-mil thick finish

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C. American Architectural Manufacturers Association (AAMA):

- AAMA 605-98.....Voluntary Specification for High Performance
Organic Coatings on Architectural Extrusions
Panels
- AAMA 620.....High Performance Organic Coatings on Coil
Coated Architectural Aluminum
- AAMA 621.....High Performance Organic Coatings on Coil
Coated Architectural Hot Dipped Galvanized
(HDG) and Zinc-Aluminum Coated Steel Substrates

D. American Society for Testing and Materials (ASTM):

- A167-99(R 2009).....Stainless and Heat-Resisting Chromium-Nickel
Steel Plate, Sheet, and Strip
- A653/A653M-09.....Steel Sheet Zinc-Coated (Galvanized) or Zinc
Alloy Coated (Galvanized) by the Hot- Dip
Process
- B32-08.....Solder Metal
- B209-10.....Aluminum and Aluminum-Alloy Sheet and Plate
- B370-09.....Copper Sheet and Strip for Building
Construction
- D146Standard Test Methods for Sampling and Testing
Bitumen Saturated Felts and Woven Fabrics for
Roofing and Waterproofing
- D173-03.....Bitumen-Saturated Cotton Fabrics Used in
Roofing and Waterproofing
- D412-06Standard Test Methods for Vulcanized Rubber and
Thermoplastic Elastomers - Tension
- D570Standard Test Method for Water Absorption of
Plastics
- D903Standard Test Method for Peel and Stripping
Strength of Adhesive Bonds
- D1187-97 (R2002).....Asphalt Base Emulsions for Use as Protective
Coatings for Metal
- D1784-07.....Rigid Poly (Vinyl Chloride) (PVC) Compounds and
Chlorinated Poly (Vinyl Chloride) (CPVC)
Compounds
- D3656-07.....Insect Screening and Louver Cloth Woven from
Vinyl-Coated Glass Yarns

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- D4586-07.....Asphalt Roof Cement, Asbestos Free
- D1876Standard Test Method for Peel Resistance of
Adhesive
- D4263Standard Test Method for Indicating Moisture
Content by Plastic sheet Method
- E96Standard Test Methods for Water Vapor
Transmission of Materials
- E154Standard Test Methods for Water Vapor Retarders
used in Contact with Earth under Concrete
Slabs, on Walls or as Ground Cover
- E. Sheet Metal and Air Conditioning Contractors National Association
(SMACNA): Architectural Sheet Metal Manual (2012 Edition).
- F. National Association of Architectural Metal Manufacturers (NAAMM):
AMP 500-06.....Metal Finishes Manual
- G. Federal Specification (Fed. Spec):
A-A-1925A.....Shield, Expansion; (Nail Anchors)
UU-B-790A.....Building Paper, Vegetable Fiber
- H. International Building Code (IBC):
Current Edition

1.5 PERFORMANCE REQUIREMENTS

- A. Provide a membrane constructed to perform as a through-wall flashing durably integrated with the wall assembly's water resistive barrier and cavity drainage system. The installed through-wall flashing shall perform as a liquid water drainage plane to discharge incidental condensation or water penetration to the exterior through the cavity drainage system.

REQUIREMENT	RESULT	TEST METHOD
Tensile Strength	Not less than 900 psi	ASTM D-412
Puncture Resistance	Not less than 80 lb.	ASTM E 154
Low Temperature Flexibility	Unaffected at minus 25 degrees F, 0.063 inch mandrel	ASTM D 146
Peel Adhesion	Not less than 5 lb per inch width on concrete prepared with contact adhesive	ASTM D 903
Lap Adhesion	Not less than 5 lb. per inch width	ASTM D 1876
Water Vapor Permeance	Not more than 0.05 Perm	ASTM E-96, Method B

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Water Absorption	Not more than 0.12 percent by weight	ASTM D 570
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PART 2 - PRODUCTS

2.1 MATERIALS

- A. Solder: ASTM B32; flux type and alloy composition as required for use with metals to be soldered.
- B. Stainless Steel: ASTM A167, Type 302B, dead soft temper.
- C. Nonreinforced, Elastomeric Sheet: Elastomeric substances reduced to thermoplastic state and extruded into continuous homogenous sheet (0.056 inch) thick. Sheet shall have not less than 7 MPa (1,000 psi) tensile strength and not more than seven percent tension-set at 50 percent elongation when tested in accordance with ASTM D412. Sheet shall show no cracking or flaking when bent through 180 degrees over a 1 mm (1/32 inch) diameter mandrel and then bent at same point over same size mandrel in opposite direction through 360 degrees at temperature of -30°C (-20 °F), self adhering through wall flashing.
- D. Bituminous Paint: ASTM D1187, Type I.
- E. Fasteners:
 - 1. Use stainless steel for copper and copper clad stainless steel, and stainless steel for stainless steel and aluminum alloy. Use stainless steel for galvanized steel.
 - 2. Nails:
 - c. Minimum diameter for stainless steel nails: 2 mm (0.095 inch) and annular threaded.
 - d. Length to provide not less than 22 mm (7/8 inch) penetration into anchorage.
 - 3. Expansion Shields: Fed Spec A-A-1925A.
- F. Sealant: As specified in Section 07 92 00, JOINT SEALANTS for exterior locations.
- G. Termination Bar: Dayton Superior DA 1510, Stainless Steel, 12 gauge (1/8"), 1 1/2" wide, holes 5/16" at 8" on center, or an approved equal.
- H. Mortar Net: Dayton Superior DA 1008 - 100% Recycled Polyester, or an approved equal.
- I. Cell Vent: One piece, flexible extrusion made from UV-resistant polypropylene copolymer, full height and width of joint - color to be selected from manufacturer's full range Dayton Superior Cell Vent, or an approved equal.

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J. Self-Adhering Membrane at top of walls and piers - see drawings: 40 mil EPDM

K. Stainless Steel Drip flashing: Stainless steel 26 ga x 3 inch wide by 8 foot sections, 3/8 inch 45 degree lip with a 3/16 inch closed hem.

Manufacturer - Wire Bond or an approved equal

2.2 FABRICATION, GENERAL

A. Expansion and Contraction Joints:

1. Fabricate in accordance with the Architectural Sheet Metal Manual recommendations for expansion and contraction of sheet metal work in continuous runs.
2. Space joints as shown or as specified.
3. Fabricate slip-type or loose locked joints and fill with sealant unless otherwise specified.

B. Edges:

1. Edges of flashings concealed in masonry joints opposite drain side shall be turned up 6 mm (1/4 inch) to form dam, unless otherwise specified or shown otherwise.
2. Finish exposed edges of flashing with a 6 mm (1/4 inch) hem formed by folding edge of flashing back on itself when not hooked to edge strip or cleat. Use 6 mm (1/4 inch) minimum penetration beyond wall face with drip for through-wall flashing exposed edge.

C. Metal Options:

1. Where options are permitted for different metals use only one metal throughout.
2. Stainless steel may be used in concealed locations for fasteners of other metals exposed to view.

2.3 FINISH

A. Steel and Galvanized Steel:

1. Finish painted unless specified as prefinished item.
2. Manufacturer's finish:
 - a. Baked on prime coat over a phosphate coating.
 - b. Baked-on prime and finish coat over a phosphate coating.
 - c. Fluorocarbon Finish: AAMA 605, high performance organic coating.

PART 3 - EXECUTION

3.1 GENERAL

- A. All work performed under this section shall be in accordance with the Specifications, Drawings, and Manufacturer's instructions and

recommendations. In the event of a conflict, the stricter requirement shall prevail.

3.2 EXAMINATION

- A. Examine substrates, areas, and conditions affecting installation of the through-wall flashing and accessory products for compliance with requirements. Verify that surfaces and conditions are suitable prior to commencing Work of this section. Do not proceed with installation until unsatisfactory conditions have been corrected.
- B. Concrete shall be cured for a minimum of seven days.
- C. Surfaces shall be sound, dry and free of oil, grease, dirt, excess mortar or other contaminants.
- D. Surfaces shall be supported and flush at joints without large voids or sharp protrusions.
- E. Inform Architect in writing of anticipated problems applying Product over substrate.

3.3 SURFACE PREPARATION

- A. Fill joints and cracks greater than 1/1 inch width with Fill Compound struck flush.
- B. Fill inside corners and angle changes with minimum 1A inch tooled bead of Fill Compound.

3.4 THROUGH-WALL FLASHING

- A. General:
 - 1. Install continuous through-wall flashing between top of concrete foundation walls and bottom of columns; under masonry, concrete, or stone copings and elsewhere as shown.
 - 2. Cut and fit to cover inside and outside corners.
 - 3. Turn up ends at discontinuities 1 inch minimum to form end dams.
 - 4. Roll firmly to substrate with hand roller tool. Roll laps firmly in perpendicular direction to terminating edge.
 - 5. Seal end laps, cut edges and around penetrations with Mastic.
 - 6. Product shall extend vertically up the back-up wall 8 inches minimum.
 - 7. Keep product minimum 1/4 inch minimum from finished exterior. Keep edge from contacting visible sealant.
 - 8. Lap end joints at least two corrugations, but not less than 100 mm (4 inches). Seal laps with sealant.

9. Where dowels, reinforcing bars and fastening devices penetrate flashing, seal penetration with sealing compound. Sealing compound is specified in Section 07 92 00, JOINT SEALANTS.
10. Coordinate with other work to set in a bed of mortar above and below flashing so that total thickness of the two layers of mortar and flashing are same as regular mortar joint.
11. At concrete backing, extend flashing to termination bar as indicated on drawings. Seal termination bar to substrate with Mastic.

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