SECTION 07 60 00
FLASHING AND SHEET METAL

SPEC WRITER NOTES:
1. Use this section only for NCA projects.
2. Delete between // _____ // if not applicable to project. Also delete any other paragraph not applicable in the section and renumber the paragraphs.
3. This section requires close coordination with roofing and masonry sections for flashing installed by other trades and for flashings integral with manufactured metal roofing/wall systems where matching finish is required of the same material.
4. Coordinate with drawing terminology for correct and uniform nomenclature.

PART 1 - GENERAL

1.1 DESCRIPTION

Formed sheet metal work for flashing and insulated expansion joint covers are specified in this section.

1.2 RELATED WORK

A. Composition base flashings and stripping in metal roof flanges: Section 07 51 00, BUILT-UP BITUMINOUS ROOFING.

B. Single ply base flashing system: // Section 07 54 19, POLYVINYL-CHLORIDE ROOFING, // Section 07 53 23, ETHYLENE-PROPYLENE-DIENE-MONOMER ROOFING, // Section 07 57 13, SPRAYED POLYURETHANE FOAM ROOFING, // Section 07 56 00, FLUID-APPLIED ROOFING//.

C. Flashing components of factory finished roofing and wall systems: //Section 07 40 00, ROOFING AND SIDING PANELS, // Section 07 61 16, BATTEN SEAM SHEET METAL ROOFING. //

D. Sealant compound and installation: Section 07 92 00, JOINT SEALANTS.

E. Color of factory coated metal and anodized aluminum: Section 09 06 00, SCHEDULE FOR FINISHES.

F. Integral flashing component of manufactured roof specialties and accessories or equipment: Section 07 71 00, ROOF SPECIALTIES // Section 07 72 00, ROOF ACCESSORIES //, and Division 22, PLUMBING.

G. Paint materials and application: Section 09 91 00, PAINTING.

H. Flashing and sheet metal in connection with prefabricated metal buildings: Section 13 34 19, METAL BUILDING SYSTEMS.
I. Flashing of Roof Drains: Section 22 05 19, METERS AND GAGES FOR PLUMBING PIPING // Section 22 05 23, GENERAL-DUTY VALVES FOR PLUMBING PIPING // Section 22 05 33, HEAT TRACING FOR PLUMBING PIPING // Section 22 11 00, FACILITY WATER DISTRIBUTION // Section 22 13 00, FACILITY SANITARY SEWERAGE // Section 22 13 23, SANITARY WASTE INTERCEPTORS // Section 22 14 00, FACILITY STORM DRAINAGE // Section 23 11 23, FACILITY NATURAL-GAS PIPING.

1.3 SUBMITTALS
A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.

SPEC WRITE NOTES: Add to shop drawing list special items not specified in this section that are added to this section.

B. Shop Drawings:
Flashings
Copings
Gravel Stop-Fascia
Gutter and Conductors
Expansion joints
Fascia-cant

C. Manufacturer's Literature and Data:
Two-piece counterflushing
Thru wall flashing
Expansion joint cover, each type
Non-reinforced, elastomeric sheeting
Copper clad stainless steel
Polyethylene coated copper
Bituminous coated copper
Copper covered paper
Fascia-cant

D. Certificates: Stating that aluminum has been given - specified // finish // thickness of anodizing. // Coating formulators approvals as specified.

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. American Society for Testing and Materials (ASTM):
<table>
<thead>
<tr>
<th>Standard</th>
<th>Description</th>
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<tbody>
<tr>
<td>A167-99-09</td>
<td>Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip</td>
</tr>
<tr>
<td>A653/A653M-08</td>
<td>Steel Sheet Zinc-Coated (Galvanized) or Zinc Alloy Coated (Galvanized) by the Hot-Dip Process</td>
</tr>
<tr>
<td>B32-08</td>
<td>Solder Metal</td>
</tr>
<tr>
<td>B209-07</td>
<td>Aluminum and Aluminum-Alloy Sheet and Plate</td>
</tr>
<tr>
<td>B370-09</td>
<td>Copper Sheet and Strip for Building Construction</td>
</tr>
<tr>
<td>D173-03</td>
<td>Bitumen-Saturated Cotton Fabrics Used in Roofing and Waterproofing</td>
</tr>
<tr>
<td>D412-06</td>
<td>Vulcanized Rubber and Thermoplastic Elastomers-Tension</td>
</tr>
<tr>
<td>D1187-97 (R2002)</td>
<td>Asphalt Base Emulsions for Use as Protective Coatings for Metal</td>
</tr>
<tr>
<td>D1784-08</td>
<td>Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds</td>
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<tr>
<td>D3656-07</td>
<td>Insect Screening and Louver Cloth Woven from Vinyl-Coated Glass Yarns</td>
</tr>
<tr>
<td>D4586-07</td>
<td>Asphalt Roof Cement, Asbestos Free</td>
</tr>
<tr>
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<td>ES-1-2003 Wind Design Standard for Edge Systems Used with Low Slope Roofing Systems</td>
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<td>E</td>
<td>National Association of Architectural Metal Manufacturers (NAAMM): AMP 500-06 Metal Finishes Manual</td>
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<tr>
<td></td>
<td>UU-B-790A Building Paper, Vegetable Fiber</td>
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</table>

**FLASHING AND SHEET METAL**

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PART 2 - PRODUCTS

SPEC WRITER NOTES: Make material requirements agree with applicable requirements specified in the referenced Applicable Publications. Update and specify only that which applies to the project.

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. Copper ASTMB370, cold-rolled temper.
F. Polyethylene Coated Copper: Copper sheet ASTM B370.
H. Galvanized Sheet: ASTM, A653.
K. Fasteners:
   1. As recommended by the manufacturer for each type, unless specified otherwise.

2.2 SHEET METAL THICKNESS

A. Except as otherwise shown or specified use thickness or weight of sheet metal as follows:
B. Concealed Locations (Built into Construction):
   1. Copper: 30g (10 oz) minimum 0.33 mm (0.013 inch thick).
   2. Stainless steel: 0.25 mm (0.010 inch) thick.
   3. Copper clad stainless steel: 0.25 mm (0.010 inch) thick.
   4. Galvanized steel: 0.5 mm (0.021 inch) thick.
C. Exposed Locations:
   1. Copper: 0.4 Kg (16 oz).
   2. Stainless steel: 0.4 mm (0.015 inch).
   3. Copper clad stainless steel: 0.4 mm (0.015 inch).
D. Thickness of aluminum or galvanized steel is specified with each item.
2.3 FABRICATION, GENERAL

A. General: Fabricate sheet metal flashing and trim to comply with SMACNA guidelines.

B. Joints:
   1. Form nonexpansion, but moveable in metal to accommodate sealant to comply with SMACNA guidelines.
   2. Conceal all fasteners where possible.

C. Flat and lap joints shall be made in direction of flow.

D. Edges of bituminous coated copper, copper covered paper, non-reinforced elastomeric sheeting and polyethylene coated copper shall be jointed by lapping not less than 100 mm (4 inches) in the direction of flow and cementing with asphalt roof cement or sealant as required by the manufacturer's printed instructions.

E. Soldering:
   1. Comply with ASTM B32

F. Expansion and Contraction Joints:
   1. Fabricate in accordance with the Architectural Sheet Metal Manual recommendations.

G. Cleats:
   1. Fabricate cleats, metal edges, drips, edge strips, and attachment devices from the same material as accessory being anchored.

   SPEC WRITER NOTES:
   1. For alteration work and small projects, minimize number of specified optional flashing materials. Match existing metals.

H. 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.

   SPEC WRITER NOTES:
   1. If more than one finish is used on project, precede finish spec with "Finish for (list items): "Following items are of aluminum: Coping, Gravel Stop and Fascia-Cant, Exp. Jt. Cover, Gutter and Downspout.
   2. Coordinate with Section 09 06 00, SCHEDULE FOR FINISHES and drawings clearly identify locations of different colors or finish on the same item.
2.4 FINISH

A. Use same finish on adjacent metal or components and exposed metal surfaces unless specified or shown otherwise.

B. In accordance with NAAMM Metal Finishes Manual, unless otherwise specified.

SPEC WRITER NOTES:
2. Clearly detail flashings at copings, building setbacks, sills, spandrels, lintels, and grade.
3. Coordinate with waterproofing or dampproofing to show interface.

2.5 THROUGH-WALL FLASHINGS

A. Flexible flashing not exposed to exterior

1. Copper Laminated; 1500 grams/square meter (5 oz/square foot) copper sheet bonded with asphalt between 2 layers of glass fiber cloth.

2. Rubberized Asphalt Flashing; Composite flashing consisting of a pliable adhesive rubberized asphalt compound not less than 8 mm (0.30 inch) thick.

3. Elastomeric Thermoplastic Flashing; Composite flashing product consisting of polyester-reinforced ethylene interpolymer alloy as follows:
   a. Monolithic Sheet: Elastomeric thermal flashing 1 mm (0.04 inch) thick.
   b. Self Adhesive Sheet: Elastomeric thermal flashing 0.635 mm (0.025 inch) thick with 0.40 mm (0.015 inch) thick coating of rubberized asphalt adhesive.

4. EPDM Flashing: Sheet flashing product made from Ethylene-Propylene-Dieterpolymer, 1mm (0.04 inch) thick.

SPEC WRITER NOTES:
1. Galvanized steel is not desired due to maintenance, especially painting, if used specify 0.6 mm (0.023 inch) thick material for counter flashing.
2. Use 1.25 mm (0.050 inch) thick aluminum for counter flashing.
3. Identify clearly locations of different metals if used for same item.

2.6 COUNTERFLASHING

A. Either copper or stainless steel, unless specified otherwise.
B. Comply with SMACNA guidelines for installation tolerances.

C. Fabricate to lap base flashing a minimum of 100 mm (4 inches) with drip.

D. One-piece Counterflashing:
   1. Back edge turned up and fabricates to lock into reglet in concrete.
   2. Upper edge formed to extend full depth of masonry unit in mortar joint with back edge turned up 6 mm (1/4 inch).

E. Two-Piece Counterflashing:
   1. Receiver to extend into masonry wall depth of masonry unit with back edge turned up 6 mm (1/4 inch) and exposed edge designed to receive and lock counterflashing upper edge when inserted.
   2. Counterflashing upper edge designed to snap lock into receiver.

F. Surface Mounted Counterflashing; one or two piece:
   1. Use at existing or new surfaces where flashing cannot be inserted in vertical surface.
   2. One piece fabricate upper edge folded double for 65 mm (2 1/2 inches) with top 19 mm (3/4 inch) bent out to form "V" joint sealant pocket with vertical surface. Perforate flat double area against vertical surface with horizontally slotted fastener holes at 400 mm (16 inch) centers between end holes. Option: One piece surface mounted counter-flashing (cap flashing) may be used. Fabricate as detailed on Plate 51 of SMACNA Architectural Sheet Metal Manual.
   3. Two pieces: Fabricate upper edge to lock into surface mounted receiver. Fabricate receiver joint sealant pocket on upper edge and lower edge to receive counterflashing, with slotted fastener holes at 400 mm (16 inch) centers between upper and lower edge.

SPEC WRITER NOTES: See Architectural Sheet Metal Manual for minimum thickness of sheet metal and specify. Detail gutter and show size on drawings.

2.7 HANGING GUTTERS

A. Fabricate gutters to cross-section indicated, complete with end caps, outlet tubes, and other accessories as required.

B. Fabricate hanging gutters in sections not less than 2400 mm (8 feet) long, except at ends of runs where shorter lengths are required.

C. Gutter Spacers:
   1. Furnish flat stock gutter spacers and brackets from the same material as gutters, and of size recommended by SMACNA.
PART 3 – EXECUTION

3.1 INSTALLATION

A. General:

1. Anchor sheet metal flashing and trim and other components of the work securely in place with provisions for thermal and structural movement. Use fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required to complete flashing and trim assemblies.

2. Install flashing and sheet metal items as shown in Sheet Metal and Air Conditioning Contractors National Association, Inc., publication, ARCHITECTURAL SHEET METAL MANUAL, except as otherwise shown or specified.

3. Apply Sealant as specified in Section 07 92 00, JOINT SEALANTS.

4. Apply sheet metal and other flashing material to surfaces which are smooth, sound, clean, dry and free from defects that might affect the application.

5. Remove projections which would puncture the materials and fill holes and depressions with material compatible with the substrate. Cover holes or cracks in wood wider than 6 mm (1/4 inch) with sheet metal compatible with the roofing and flashing material used.

6. Coordinate with masonry work for the application of a skim coat of mortar to surfaces of unit masonry to receive flashing material before the application of flashing.

7. Confine direct nailing of sheet metal to strips 300 mm (12 inch) or less wide. Nail flashing along one edge only. Space nails not over 100 mm (4 inches) on center unless specified otherwise.

8. Install bolts, rivets, and screws where indicated, specified, or required in accordance with the SMACNA Sheet Metal Manual. Space rivets at 75 mm (3 inch) on centers in two rows in a staggered position. Use neoprene washers under fastener heads when fastener head is exposed.

9. Coordinate with roofing work for the installation of metal base flashings and other metal items having roof flanges for anchorage and watertight installation.

10. Nail continuous cleats on 75 mm (3 inch) centers in two rows in a staggered position.

11. Nail individual cleats with two nails and bend end tab over nail heads. Lock other end of cleat into hemmed edge.
12. Install flashings in conjunction with other trades so that flashings are inserted in other materials and joined together to provide a water tight installation.

13. Where required to prevent galvanic action between dissimilar metal isolate the contact areas of dissimilar metal with sheet lead, waterproof building paper, or a coat of bituminous paint.

14. Isolate aluminum in contact with dissimilar metals others than stainless steel, white bronze or other metal compatible with aluminum by:
   a. Paint dissimilar metal with a prime coat of zinc-chromate or other suitable primer, followed by two coats of aluminum paint.
   b. Paint dissimilar metal with a coat of bituminous paint.
   c. Apply an approved caulking material between aluminum and dissimilar metal.

15. Paint aluminum in contact with or built into mortar, concrete, plaster, or other masonry materials with a coat of bituminous paint.

16. Paint aluminum in contact with absorptive materials that may become repeatedly wet with two coats of bituminous paint or two coats of aluminum paint.

17. Bitumen Stops:
   a. Install bitumen stops for built-up roof opening penetrations through deck and at formed sheet metal gravel stops.
   b. Nail leg of bitumen stop at 300 mm (12 inch) intervals to nailing strip at roof edge before roofing material is installed.

3.2 THROUGH-WALL FLASHING

A. General:

1. Install continuous through-wall flashing between top of concrete foundation walls and bottom of masonry building walls; at top of concrete floors; under masonry, concrete, or stone copings and elsewhere as shown.

2. Where exposed portions are used as a counter flashings, lap base flashings at least 100 mm (4 inches) and use thickness of metal as specified for exposed locations.

3. Exposed edge of flashing may be formed as a receiver for two piece counter flashing as specified.

4. Terminate exterior edge beyond face of wall approximately 6 mm (1/4 inch) with drip edge where not part of counter flashing.
5. Turn back edge up 6 mm (1/4 inch) unless noted otherwise where flashing terminates in mortar joint or hollow masonry unit joint.
6. Terminate interior raised edge in masonry backup unit approximately 38 mm (1 1/2 inch) into unit unless shown otherwise.
7. Under copings terminate both edges beyond face of wall approximately 6 mm (1/4 inch) with drip edge.
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. Where ends of flashing terminate turn ends up 25 mm (1 inch) and fold corners to form dam extending to wall face in vertical mortar or veneer joint.
12. Turn flashing up not less than 200 mm (8 inch) between masonry or behind exterior veneer.
13. When flashing terminates in reglet extend flashing full depth into reglet and secure with lead or plastic wedges spaced 150 mm (6 inch) on center.
14. Continue flashing around columns:
   a. Where flashing cannot be inserted in column reglet hold flashing vertical leg against column.
   b. Counterflash top edge with 75 mm (3 inch) wide strip of saturated cotton unless shown otherwise. Secure cotton strip with roof cement to column. Lap base flashing with cotton strip 38 mm (1 1/2 inch).

SPEC WRITER NOTES: Details required of flashing.
1. Verify details show flashing at masonry faced concrete walls and termination of back edge.
2. Coordinate with waterproofing to define interface with metal flashing at joint.
3. Show metal flashing to have not less than 200 mm (8 inch) high vertical portion and termination against or in concrete backup or into masonry backup mortar joint.
B. Flashing at Top of Concrete Foundation Walls Where concrete is exposed. Turn up not less than 200 mm (8 inch) high and into masonry backup mortar joint or reglet in concrete backup as specified.

C. Flashing at Top of Concrete Floors (except where shelf angles occur): Place flashing in horizontal masonry joint not less than 200 mm (8 inch) below floor slab and extend into backup masonry joint at floor slab 38 mm (1 1/2 inch).

D. Flashing at Cavity Wall Construction: Where flashing occurs in cavity walls turn vertical portion up against backup under waterproofing, if any, into mortar joint. Turn up over insulation, if any, and horizontally through insulation into mortar joint.

E. Flashing at Veneer Walls:
   1. Install near line of finish floors over shelf angles or where shown.
   2. Turn up against sheathing.
   3. At stud framing, hem top edge 19 mm (3/4 inch) and secure to each stud with stainless steel fasteners through sheathing.
   4. At concrete backing, extend flashing into reglet as specified.
   5. Coordinate with installation of waterproofing or asphalt felt for lap over top of flashing.

F. Lintel Flashing when not part of shelf angle flashing:
   1. Install flashing full length of lintel to nearest vertical joint in masonry over veneer.
   2. Turn ends up 25 mm (one inch) and fold corners to form dam and extend end to face of wall.
   3. Turn back edge up to top of lintel; terminate back edge as specified for back-up wall.

G. Window Sill Flashing:
   1. Install flashing to extend not less than 100 mm (4 inch) beyond ends of sill into vertical joint of masonry or veneer.
   2. Turn back edge up to terminate under window frame.
   3. Turn ends up 25 mm (one inch) and fold corners to form dam and extend to face of wall.

H. Door Sill Flashing:
   1. Install flashing under bottom of plate sills of doors over curbs opening onto roofs. Extend flashing out to form counter flashing or receiver for counter flashing over base flashing. Set in sealant.
2. Extend sill flashing 200 mm (8 inch) beyond jamb opening. Turn ends up one inch in vertical masonry joint, extend end to face of wall. Join to counter flashing for water tight joint.

3. Where doors thresholds cover over waterproof membranes install sill flashing over water proof membrane under thresholds. Extend beyond opening to cover exposed portion of waterproof membrane and not less than 150 mm (6 inch) beyond door jamb opening at ends. Turn up approximately 6 mm (1/4 inch) under threshold.

I. Flashing at Masonry, Stone, or Precast Concrete Copings:
   1. Install flashing with drips on both wall faces unless shown otherwise.
   2. Form penetration openings to fit tight against dowel or other item with edge turned up. Seal penetrations with sealant.

   SPEC WRITER NOTES: At steel pipes a standard screwed iron fitting for clamping counterflashing may be used in lieu of turning metal down into pipe. Check with PLUMBING specification.

3.3 COUNTERFLASHING

A. General:
   1. Install counterflashing over and in conjunction with installation of base flashings, except as otherwise specified or shown.
   2. Install counterflashing to lap base flashings not less than 100 mm (4 inch).
   3. Install upper edge or top of counterflashing not less than 225 mm (9 inch) above top of the roofing.
   4. Lap joints not less than 100 mm (4 inch). Stagger joints with relation to metal base flashing joints.
   5. Use surface applied counterflashing on existing surfaces and new work where not possible to integrate into item.
   6. When fastening to concrete or masonry, use screws driven in expansion shields set in concrete or masonry. Use screws to wood and sheet metal. Set fasteners in mortar joints of masonry work.

B. One Piece Counterflashing:
   1. Where flashing is installed at new masonry, coordinate to insure proper height, embed in mortar, and end lap.
   2. Where flashing is installed in reglet in concrete insert upper edge into reglet. Hold flashing in place with lead wedges spaced not more than 200 mm (8 inch) apart. Fill joint with sealant.
   3. Where flashing is surface mounted on flat surfaces.
a. When top edge is double folded anchor flat portion below sealant "V" joint with fasteners spaced not over 400 mm (16 inch) on center:
   1) Locate fasteners in masonry mortar joints.
   2) Use screws to sheet metal or wood.
b. Fill joint at top with sealant.

4. Where flashing or hood is mounted on pipe.
   a. Secure with draw band tight against pipe.
   b. Set hood and secure to pipe with a one by 25 mm x 3 mm (1 x 1/8 inch) bolt on stainless steel draw band type clamp, or a stainless worm gear type clamp.
c. Completely fill joint at top with sealant.

C. Two-Piece Counterflashing:
   1. Where receiver is installed at new masonry coordinate to insure proper height, embed in mortar, and lap.
   2. Surface applied type receiver:
      a. Secure to face construction in accordance, with manufacturer’s instructions.
      b. Completely fill space at the top edge of receiver with sealant.
   3. Insert counter flashing in receiver in accordance with fabricator or manufacturer's instructions and to fit tight against base flashing.

D. Where vented edge occur install so lower edge of counterflashing is against base flashing.

E. When counter flashing is a component of other flashing install as shown.

3.4 COPINGS

A. General:
   1. On walls topped with a wood plank, install a continuous edge strip on the front // and rear // edge of the plank. Lock the coping to the edge strip with a 19 mm (3/4 inch) loose lock seam.
   2. Where shown turn down roof side of coping and extend down over base flashing as specified for counter-flashing. Secure counter-flashing to lock strip in coping at continuous cleat.
   3. Install ends adjoining existing construction so as to form space for installation of sealants. Sealant is specified in Section 07 92 00, JOINT SEALANTS.

B. Aluminum Coping:
   1. Install with 6 mm (1/4 inch) joint between ends of coping sections.
2. Install joint covers, centered at each joint, and securely lock in place.

**SPEC WRITER NOTES:** If prefinished galvanized steel copings are used change title and specify as if aluminum with sealant in lieu of solder.

C. Stainless steel / Copper / Copings:
   1. Join ends of sheets by a 19 mm (3/4 inch) locked and soldered seam, except at intervals of 9600 mm (32 feet), provide a 38 mm (1 1/2 inch) loose locked expansion joint filled with sealant or mastic.
   2. At straight runs between 7200 mm (24 feet) and 19200 mm (64 feet) locate expansion joint at center.
   3. At straight runs that exceed 9600 mm (32 feet) and form the leg of a corner locate the expansion joint not more than 4800 mm (16 feet) from the corner.

### 3.5 HANGING GUTTERS

A. Hang gutters with high points equidistant from downspouts. Slope at not less than 1:200 (1/16 inch per foot).

B. Lap joints, except for expansion joints, at least 25 mm (one inch) in the direction of flow. Rivet and seal or solder lapped joints.

C. Support gutters in brackets spaced not more than 600 mm (24 inch) on centers, brackets attached to facial or wood nailer by at least two screws or nails.
   1. For copper or copper clad stainless steel gutters use brass or bronze brackets.
   2. For stainless steel gutters use stainless steel brackets.
   3. For aluminum gutters use aluminum brackets or stainless steel brackets.
   4. Use brass or stainless steel screws.

D. Secure brackets to gutters in such a manner as to allow free movement of gutter due to expansion and contraction.

**SPEC WRITER NOTES:** Insure roof plan shows location of gutters, outlets or conductors, and expansion joints.

E. Gutter Expansion Joint:
   1. Locate expansion joints midway between outlet tubes.
   2. Provide at least a 25 mm (one inch) expansion joint space between end baffles of gutters.
   3. Install a cover plate over the space at expansion joint.
4. Fasten cover plates to gutter section on one side of expansion joint only.
5. Secure loose end of cover plate to gutter section on other side of expansion joint by a loose-locked slip joint.

F. Outlet Tubes: Set bracket strainers loosely into gutter outlet tubes.

--- END ---