

PART 1- GENERAL

- 1.1 SECTION INCLUDES .1 Counterflashing and base flashing.
.2 Wall flashing.
.3 Exposed trim/fascia units.
.4 Miscellaneous accessories.
- 1.2 RELATED WORK .1 General Requirements Division 1
.2 Rough Carpentry Section 06 10 10
.3 Modified Bituminous Roofing Section 07 52 00
.4 Air Barriers - Descriptive or Proprietary
Section 07 27 00.01
.5 Joint Sealants Section 07 92 10
- 1.3 REFERENCES .1 ASTM B 370-98, Standard Specification for Copper
Sheet and Strip for Building Construction.
.2 Canadian Roofing Contractors Association (CRCA).
.3 Copper Development Association Inc. (CDA).
- 1.4 SUBMITTALS .1 Submit product data for flashing, metal and
accessories: Manufacturer's technical product
data, installation instructions and general
recommendations for each specified sheet material
and fabricated product in accordance with Section
01 33 00 - Submittal Procedures.
.2 Submit samples of the following flashing, sheet
metal, and accessory items:
.1 150mm or 300mm square samples of specified
sheet materials to be exposed as finished
surfaces.
- 1.5 COORDINATION .1 Coordinate work of this section with interfacing
and adjacent work for proper sequencing.
.2 Ensure weather resistance and durability of work
and protection of materials and finishes.
- 1.6 PERFORMANCE .1 Installation Requirements: Fabricator is
responsible for installing Requirements system,
including anchorage to substrate and necessary
modifications to meet specified and drawn
requirements and maintain visual design concepts
in accordance with Contract Documents and
following installation methods as stipulated in
the "Copper in Architecture" handbook published
by the Copper Development Association Inc.(CDA).
1. Drawings are diagrammatic and are intended
to establish basic dimension of units, sight
lines, and profiles of units.

2. Make modifications only to meet field conditions and to ensure fitting of system components.
3. Obtain Departmental Representative's approval of modifications.
4. Provide concealed fastening wherever possible.
5. Attachment considerations: Account for site peculiarities and expansion and contraction movements so there is no possibility of loosening, weakening and fracturing connection between units and building structure or between components themselves.
6. Obtain Departmental Representative's approval for connections to building elements at locations other than indicated in Drawings.

1.7 QUALITY ASSURANCE .1

Fabricator's Qualifications: Company specializing in copper flashing and trim work with three years experience in similar size and type of installations.

- .2 Installer: A firm with 3 years of successful experience with installation of copper flashing and trim work of type and scope equivalent to Work of this Section.
- .3 Industry Standard: Except as otherwise shown or specified, comply with applicable recommendations and details of the "Copper in Architecture" handbook published by the Copper Development Association Inc. (CDA). Conform to dimensions and profiles shown.
- .4 Mock-Up: Before proceeding with fabrication of copper flashing and trim work components, prepare a mock-up of work. Incorporate materials and methods of fabrication and installation identical with project requirements. Install mock-up at location directed by the Departmental Representative. Retain accepted mock-up as quality standard for acceptance of completed copper work. If accepted, mock-up may be incorporated as part of copper work.
 1. Provide mock-up of sufficient size and scope to show typical pattern of seams, fastening details, edge construction, and finish texture and color.

1.8 DELIVERY, STORAGE & HANDLING

- .1 Packing, Shipping, Handling, and Unloading:
Protect finish metal faces.
- .2 Acceptance at Site: Examine each component and accessory as delivered and confirm that material and finish is undamaged. Do not accept or install damaged materials.
- .3 Storage and Protection:
 1. Stack preformed material to prevent twisting, bending, and abrasions.
 2. Provide ventilation.
 3. Prevent contact with materials which may cause discoloration or staining.

1.9 WARRANTY

- .1 Warrant installed flashing and trim components to be free from defects in material and workmanship for period of 2 years.
- .2 Include coverage against leakage and damages to finishes.

PART 2 - PRODUCTS

2.1 FLASHING & TRIM MATERIALS

- .1 Copper: to ASTM B 370; temper H00 (cold rolled) except where temper 060 is required for forming;
1. 16 oz. per sq. ft. (0.0216-inch thick)
(0.55mm) except as otherwise indicated.
2. Pre-patinated factory finish.

2.3 ACCESSORIES

- .1 Solder: ASTM B 32; Provide 50-50 tin/lead or lead free alternative of similar or greater strength solder. Killed acid flux.
- .2 Flux: Muriatic acid neutralized with zinc or approved brand of soldering flux.
- .3 Fasteners: Same metal as flashing/sheet metal or other non-corrosive metal as recommended by sheet manufacturer. Match finish of exposed heads with material being fastened.
- .4 Bituminous Coating: SSPC-Paint 12, Cold-Applied Asphalt Mastic (Extra Thick Film), nominally free

of sulfur, compounded for 15-mil dry film thickness per coat.

- .5 Joint Sealant: One-part, copper compatible elastomeric polyurethane, polysulfide, butyl or silicone rubber sealant as tested by sealant manufacturer for copper substrates. Refer to Division 07. Plastic cement: to CAN/CGSB 37.5-M89.

2.4 FABRICATION

- .1 General Metal Fabrication: Shop-fabricate work to greatest extent possible. Comply with details shown and with applicable requirements of Copper Development Association (CDA) "Copper in Architecture" handbook and other recognized industry practices. Fabricate for waterproof and weather-resistant performance, with expansion provisions for running work, sufficient to permanently prevent leakage, damage, or deterioration of the work. Form work to fit substrates. Comply with material manufacturer instructions and recommendations for forming material. Form exposed copper work without excessive oil-canning, buckling, and tool marks, true to line and levels indicated, with exposed edges folded back to form hems.
1. Fabricate to allow for adjustments in field for proper anchoring and joining.
 2. Form sections true to shape, accurate in size, square, free from distortion and defects.
 3. Cleats: Fabricate cleats of same material as sheet, interlockable with sheet in accordance with CDA recommendations.
 4. Fabricate corners from one piece with minimum 18-inch (450-mm) long legs; solder for rigidity if required; seal non-soldered weather joints with sealant.
- .2 Seams: Fabricate nonmoving seams with flat-lock seams where possible. Tin edges and cleats to be seamed, form seams, and solder. Where soldered flat-lock seams are not possible, use soldered riveted lap seams joints for additional strength.
- .3 Expansion Provisions: Where lapped or bayonet-type expansion provisions in work cannot be used or would not be sufficiently water/weatherproof, form expansion joints of intermeshing hooked flanges, not less than 1-inch (25-mm) deep,

filled with mastic sealant (concealed within joints).

- .4 Sealant Joints: Where movable, nonexpansion type joints are indicated or required for proper performance of work, form metal to provide for proper installation of elastomeric sealant, in compliance with CDA standards.
- .5 Separations: Provide for separation of metal from noncompatible metal or corrosive substrates by coating concealed surfaces at locations of contact, with bituminous coating or other permanent separation as recommended by manufacturer/fabricator.
- .6 Solder
 1. Solder and seal metal joints except those indicated or required to be expansive type joints.
 2. Tin edges of copper sheets and cleats at soldered joints.
 3. After soldering, carefully remove flux and other residue from surfaces. Neutralize acid flux by washing with baking soda solution, and then flushing clear water rinse. Wipe and wash solder
- .7 Seams:
 1. Provide following seam types unless noted or detailed otherwise.
 2. Flat: Flat lock.
 3. Corner: Double lock corner.
- .8 Copper Thickness: Comply with CDA recommendations for copper size and shape.
- .9 Flashing and Counter Flashing:
 1. Fabricate as indicated on Drawings and in accordance with the CDA "Copper in Architecture" handbook.
 2. Hem exposed flashings on underside $\frac{1}{2}$ -inch (13-mm); miter and seam corners.

3. Fabricate vertical faces with bottom edge formed outward ¼-inch (6-mm) and hemmed to form drip.
4. Fabricate flashings to allow toe to extend minimum 2-inches (50-mm) over wall surfaces.

2.5 FINISHES .1 Factory pre-patinated finish.

PART 3 - EXECUTION

- 3.1 EXAMINATION .1 General: Examine conditions and proceed with work when substrates are ready.
- .2 Confirm that substrate system is even, smooth, sound, clean dry, and free from defects.

- 3.2 INSTALLATION .1 General: Except as otherwise indicated, comply with manufacturer's installation instructions and recommendations and with the "Copper in Architecture" handbook published by the Copper Development Association Inc. (CDA). Anchor units of work securely in place by methods indicated, providing for thermal expansion of units; conceal fasteners where possible, and set units true to line and level as indicated. Install work with laps, joints, and seams that will be permanently watertight and weatherproof.
1. Install units plumb, level, square, and free from warp or twist while maintaining dimensional tolerances and alignment with surrounding construction.
 2. Apply asphalt mastic on copper surfaces of units in contact with dissimilar metals.
 3. Fit flashings tight in place. Make corners square, surfaces true and straight in planes, and lines accurate to profiles.
 4. Miter, lap seam and close corner joints with solder. Seal seams and joints watertight.
 5. Install expansion joints at frequency recommended by CDA. Do not fasten moving seams such that movement is restricted.
 6. Coordinate with installation of roofing system and roof accessories.

3.3 CLEANING

- .1 Remove protective film (if any) from exposed surfaces of copper promptly upon installation. Strip with care to avoid damage to finishes.
- .2 Clean exposed copper surfaces, removing substances that might cause abnormal discoloration of metal.
- .3 Upon completion of each area of soldering, carefully remove flux and other residue from surfaces. Neutralize acid flux by washing with baking soda solution, and then flushing with clear water rinse. Use special care to neutralize and clean crevices.
- .4 Clean exposed metal surfaces of substances that would interfere with normal oxidation and weathering.

3.4 PROTECTION

- .1 Advise Contractor of required procedures for surveillance and protection of flashings and sheet metal work during construction to ensure that work will be without damage or deterioration other than natural weathering at time of Substantial Completion.

END OF SECTION