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USACE / NAVFAC / AFCEC UFGS-07 62 13 (August 2025)

Preparing Activity: USACE

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Superseding  
UFGS-07 62 13 (August 2009)

## UNIFIED FACILITIES GUIDE SPECIFICATIONS

References are in agreement with UMRL dated July 2025

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### SECTION TABLE OF CONTENTS

#### DIVISION 07 - THERMAL AND MOISTURE PROTECTION

#### SECTION 07 62 13

#### COPPER SHEET METAL FLASHING AND TRIM

08/25

#### PART 1 GENERAL

- 1.1 REFERENCES
- 1.2 SUBMITTALS
- 1.3 DELIVERY, STORAGE, AND HANDLING

#### PART 2 PRODUCTS

- 2.1 SYSTEM DESCRIPTION
- 2.2 MATERIALS
  - 2.2.1 Asphalt Roof Cement
  - 2.2.2 Fasteners
  - 2.2.3 Underlayment
  - 2.2.4 Flux
  - 2.2.5 Slip Sheet
  - 2.2.6 Sheet Metal
  - 2.2.7 Solder
  - 2.2.8 Sealants And Sealing Compounds

#### PART 3 EXECUTION

- 3.1 PREPARATION
  - 3.1.1 Protection of Existing Copper Sheet Metal
- 3.2 INSTALLATION
  - 3.2.1 Soldering And Seaming
    - 3.2.1.1 Soldering
    - 3.2.1.2 Seams
  - 3.2.2 Covering On Minor Flat, Pitched, Or Curved Surfaces
  - 3.2.3 Cleats
  - 3.2.4 Expansion Joints in Copper Flashing and Gutters
  - 3.2.5 Flashings
    - 3.2.5.1 General
    - 3.2.5.2 Base Flashings
    - 3.2.5.3 Cap Flashings (Counter flashings)

- 3.2.5.4 Stepped Flashing
- 3.2.5.5 Valley Flashing
  - 3.2.5.5.1 Open Valley Flashings
  - 3.2.5.5.2 Closed Valleys
- 3.2.5.6 Through-Wall Flashing
  - 3.2.5.6.1 Lintel Flashing
  - 3.2.5.6.2 Sill Flashing
- 3.2.5.7 Eave and Rake Flashings
- 3.2.6 Reglets
- 3.2.7 Gravel Stops And Fascia
- 3.2.8 Downspouts
- 3.2.9 Gutters
- 3.2.10 Scupper Linings
- 3.2.11 Splash Pans
- 3.3 FIELD QUALITY CONTROL

ATTACHMENTS:

TABLE 1

TABLE 2

-- End of Section Table of Contents --

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### SECTION 07 62 13

#### COPPER SHEET METAL FLASHING AND TRIM 08/25

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NOTE: This guide specification covers the requirements for copper sheet metal used as flashing, including gutters and downspouts and for historic structures which require roof repairs.

Adhere to [UFC 1-300-02](#) Unified Facilities Guide Specifications (UFGS) Format Standard when editing this guide specification or preparing new project specification sections. Edit this guide specification for project specific requirements by adding, deleting, or revising text. For bracketed items, choose applicable item(s) or insert appropriate information.

Remove information and requirements not required in respective project, whether or not brackets are present.

Comments, suggestions and recommended changes for this guide specification are welcome and should be submitted as a [Criteria Change Request \(CCR\)](#).

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## PART 1 GENERAL

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NOTE: Details of sheet metalwork will be shown on project drawings in accordance with the appropriate details in the Architectural Sheet Metal Manual of the Sheet Metal and Air Conditioning Contractors National Association, except that the first ply of roofing will not be extended into gutters.

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### 1.1 REFERENCES

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NOTE: This paragraph is used to list the publications cited in the text of the guide

specification. The publications are referred to in the text by basic designation only and listed in this paragraph by organization, designation, date, and title.

Use the Reference Wizard's Check Reference feature when you add a Reference Identifier (RID) outside of the Section's Reference Article to automatically place the reference in the Reference Article. Also use the Reference Wizard's Check Reference feature to update the issue dates.

References not used in the text will automatically be deleted from this section of the project specification when you choose to reconcile references in the publish print process.

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The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM INTERNATIONAL (ASTM)

ASTM B32	(2020) Standard Specification for Solder Metal
ASTM B152/B152M	(2019) Standard Specification for Copper Sheet, Strip, Plate, and Rolled Bar
ASTM B370	(2022) Standard Specification for Copper Sheet and Strip for Building Construction
ASTM D1970/D1970M	(2021) Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection
ASTM D4586/D4586M	(2007; R 2018) Standard Specification for Asphalt Roof Cement, Asbestos-Free
ASTM D8257/D8257M	(2022) Standard Specification for Mechanically Attached Polymeric Roof Underlayment Used in Steep Slope Roofing
ASTM F547	(2017) Standard Terminology of Nails for Use with Wood and Wood-Base Materials

SHEET METAL AND AIR CONDITIONING CONTRACTORS' NATIONAL ASSOCIATION (SMACNA)

SMACNA 1793	(2012) Architectural Sheet Metal Manual, 7th Edition
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U.S. GENERAL SERVICES ADMINISTRATION (GSA)

CID A-A-51145	(Rev D; Notice 1; Notice 2; Notice 3; Notice 4) Flux, Soldering, Non-Electronic, Paste and Liquid
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## 1.2 SUBMITTALS

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NOTE: Review submittal description (SD) definitions in Section 01 33 00 SUBMITTAL PROCEDURES and edit the following list, and corresponding submittal items in the text, to reflect only the submittals required for the project. The Guide Specification technical editors have classified those items that require Government approval, due to their complexity or criticality, with a "G." Generally, other submittal items can be reviewed by the Contractor's Quality Control System. Only add a "G" to an item, if the submittal is sufficiently important or complex in context of the project.

For Army projects, fill in the empty brackets following the "G" classification, with a code of up to three characters to indicate the approving authority. Codes for Army projects using the Resident Management System (RMS) are: "AE" for Architect-Engineer; "DO" for District Office (Engineering Division or other organization in the District Office); "AO" for Area Office; "RO" for Resident Office; and "PO" for Project Office. Codes following the "G" typically are not used for Navy and Air Force projects.

The "S" classification indicates submittals required as proof of compliance for sustainability Guiding Principles Validation or Third Party Certification and as described in Section 01 33 00 SUBMITTAL PROCEDURES.

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Government approval is required for submittals with a "G" or "S" classification. Submittals not having a "G" or "S" classification are for Contractor Quality Control approval. Submittals not having a "G" or "S" classification are for information only. When used, a code following the "G" classification identifies the office that will review the submittal for the Government. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Sheet Metal

SD-03 Product Data

Field Quality Control

SD-04 Samples

Materials

## 1.3 DELIVERY, STORAGE, AND HANDLING

Ensure materials are adequately packaged and protected during shipment and

inspect for damage, dampness, and wet-storage stains upon delivery to the jobsite. Clearly label material as to type and manufacturer. Handle sheet metal carefully to avoid damage. Store materials in dry, weathertight, and well ventilated areas until installation.

## PART 2 PRODUCTS

### 2.1 SYSTEM DESCRIPTION

- a. Perform sheet metal work to accomplish weathertight construction. Install the work without waves, warps, buckles, fastening stresses or distortion, allowing for expansion and contraction. Ensure cutting, fitting, drilling, and other operations in connection with sheet metal required to accommodate the work of other trades are performed by sheet metal mechanics. Hem exposed edges. Bottom edges of exposed vertical surfaces are to be angled to form a drip edge. Form flashing into a 3-dimensional configuration (three-sided end dam) at the end of a run to direct water to the outside of the system. Provide copper flashing as specified in TABLE 1. Install joints as specified in TABLE 2. Provide accessories and other items essential to complete the sheet metal installation, though not specifically indicated or specified.
- b. Coordinate installation of sheet metal items used in conjunction with roofing work to permit continuous roofing operations. Pack factory-fabricated components in cartons marked with the manufacturer's name or trademark printed or embossed at frequent intervals to permit easy identification. Sheet metal work pertaining to heating, ventilating, and air conditioning is specified in other sections.

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**NOTE: Galvanic action between dissimilar metals must be avoided in order to prevent corrosion. In replacing flashing, gutters and other copper sheet metal items on historic structures, it is often necessary to reuse existing non-copper support or connecting items. Proper insulation between unlike materials will provide protection against galvanic action and subsequent deterioration.**

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- c. Avoid galvanic action between copper and iron, aluminum or steel by using proper insulation. Insulate the copper by the following: cover the steel member with insulation; place strips of sheet lead between the two metals; or heavily tin the iron.

### 2.2 MATERIALS

Provide materials conforming to the requirements specified below, and those given in TABLE 1. Provide copper for all materials exposed to weather.

#### 2.2.1 Asphalt Roof Cement

ASTM D4586/D4586M, Type I.

### 2.2.2 Fasteners

Provide and install fasteners of sufficient size and length to penetrate into the supporting element a minimum of one inch to fasten copper flashing to substrates in accordance with the drawings. Nails are required to conform to [ASTM F547](#) or be as approved. Nails and rivets are required to be copper. Screws and bolts are required to be bronze, copper-plated stainless steel, or lead-coated steel. See drawings for required type and spacing of fasteners for each application.

### [2.2.3 Underlayment

Provide self-adhering modified bitumen membrane underlayment material in compliance with [ASTM D1970/D1970M](#), suitable for use as underlayment for metal roofing. Use membrane resistant to cyclical elevated temperatures for extended period of time in high heat service conditions. Provide membrane with integral non-tacking top surface of polyethylene film or other surface material to serve as separator between bituminous material and metal products to be applied above.

### ]2.2.4 Flux

[CID A-A-51145](#), Type I.

### [2.2.5 Slip Sheet

Polymeric membrane meeting the requirements of [ASTM D8257/D8257M](#).

### ]2.2.6 Sheet Metal

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**NOTE: Submit drawings showing weights, gauges, or  
thickness of sheet metal, type of material, joining,  
expansion-joint spacing, and fabrication details and  
installation procedures.**  
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Ensure sheet metal conforms to [ASTM B152/B152M](#), [ASTM B370](#), Light cold-rolled temper (H00) copper. Deliver materials to the site after the approved detail drawings have been returned to the Contractor.

### 2.2.7 Solder

[ASTM B32](#) Sn50.

### 2.2.8 Sealants And Sealing Compounds

Sealants and sealing compounds are specified in Section [07 92 00](#) JOINT SEALANTS.

## PART 3 EXECUTION

### 3.1 PREPARATION

#### 3.1.1 Protection of Existing Copper Sheet Metal

Salvage and reuse existing, original, historic copper sheet metal elements that are intact and serviceable whenever possible. This may include, but is not limited to, gutters, hangers, downspouts, connectors, leader heads,

leader straps, basket strainers, splash pans, and other architectural sheet metal elements such as finials, and decorative panels. When work involves repair and replacement of copper sheet metal elements, ensure new elements match existing original elements as closely as possible.

## 3.2 INSTALLATION

### 3.2.1 Soldering And Seaming

#### 3.2.1.1 Soldering

Tin edges of sheet metals, except lead coated material, before soldering. Solder slowly with well-heated soldering irons to thoroughly heat the seams and completely sweat the solder through the full width of the seam. Scrape or wire-brush edges of lead-coated material to be soldered to produce a bright surface and apply a liberal amount of flux brushed in before soldering is begun. On seams, solder immediately after application of the flux. Upon completion of soldering, clean the acid flux residue thoroughly from the sheet metal with a solution of washing soda in water and rinse with clean water.

#### 3.2.1.2 Seams

Finish flat-lock and soldered-lap seams not less than 25 mm 1 inch wide. Lap unsoldered plain-lap seams not less than 75 mm 3 inches unless otherwise specified. Orient flat seams in the direction of the flow.

### 3.2.2 Covering On Minor Flat, Pitched, Or Curved Surfaces

Unless otherwise indicated, cover or flash minor flat, pitched, or curved surfaces, such as crickets, bulkheads, dormers, and small decks, with 450 x 600 mm 18 x 24 inch metal sheets and secure with cleats. Apply one ply of Self-Adhering Modified Bitumen Underlayment covered with 1 ply of polymeric slip sheet as underlayment on wood surfaces. Place two cleats on the long side and place 1 cleat on the short side. Lock and Solder seams.

### 3.2.3 Cleats

Provide a continuous cleat where indicated or specified to secure loose edges of the sheet metal work. Space butt joints approximately 3 mm 1/8 inch apart. Fasten the cleat to the supporting construction with nails evenly spaced not over 300 mm 12 inches on centers. Where the fastening is to be made to concrete or masonry, use screws driven in expansion shields set in concrete or masonry. Install the cleat for fascia anchorage to extend below the supporting construction to form a drip and to allow the flashing to be hooked over the lower edge at least 19 mm 3/4 inch. Ensure the cleat is of sufficient width to provide adequate bearing area to ensure a rigid installation. Where horizontal nailer is vented for insulation and the cleat is placed over masonry or concrete, install the cleat over 1.6 mm 1/16 inch thick metal washers placed at screws. Use metal washers that are electrolytically compatible with the continuous cleat.

### 3.2.4 Expansion Joints in Copper Flashing and Gutters

Provide expansion joints at 12.0 meter 40 foot intervals. Provide an additional joint where the distance between the last expansion joint and the end of the continuous run is more than half the required interval



spacing evenly space joints.

### 3.2.5 Flashings

#### 3.2.5.1 General

Install flashings at intersections of roof with vertical surfaces and at projections through roof (except that flashing for heating and plumbing), including piping, roof, and floor drains, and for electrical conduit projections through roof or walls that are specified in appropriate sections for such work. Turn cap flashings around exterior corners of masonry or concrete walls at least 50 mm 2 inches, secure into masonry joints and into concrete with expansion anchors and seal with No. 2 or 4 sealing compound. Ensure corner units have mitered joints, installed with 75 mm 3 inch lap joints over flashings on each side. Unless otherwise indicated, terminate through-wall flashing with an angled drip edge at the face of the wall. Provide cap flashings over base flashings. Cover perforations in flashings made by masonry anchors by an application of bituminous plastic cement at the perforation. Turn exposed and unfastened flashings under at the edge of the strip 13 mm 1/2 inch. Install flashing on top of joint reinforcement.

#### 3.2.5.2 Base Flashings

- a. Extend base flashings under the uppermost row of tile the full depth of the tile or at least 100 mm 4 inches over the tile immediately below the metal.
- b. Turn up the vertical leg of the metal not less than 100 mm 4 inches and preferably 200 mm 8 inches on the abutting surface. Where a vertical surface butts against the roof slope, build the base flashing into each course of tile as it is laid (see paragraph STEPPED FLASHING), turning the metal out 100 mm 4 inches on the tile and at least 200 mm 8 inches above the roof.
- c. Where the roof stops against a stucco or plaster wall, secure a wood 2 x 4 with a beveled top edge to the wall. Then turn out base flashing over the tile at least 100 mm 4 inches and bend up vertically at least 75 mm 3 inches on the board.
- d. Turn out the base flashing 100 mm 4 inches on the roof surface and from 150 to 200 mm 6 to 8 inches on the vertical surface for either sloping or flat slate roofs.
- e. Use base flashings where posts, flagpoles, or scuttles project through the roof. Vent pipes are required to have base flashings in the form of special sleeves [and][or] EPDM boots.

#### 3.2.5.3 Cap Flashings (Counter flashings)

Where the base flashing is not covered by vertical tile or siding, build a cap flashing into the masonry joints lapping not less than 50 mm 2 inches vertically, extending down over the base flashing 100 mm 4 inches, and the edge bent back and up 13 mm 1/2 inch.

#### 3.2.5.4 Stepped Flashing

Install stepped flashing where sloping roofs surfaced with tiles abut vertical surfaces. Place separate pieces of base flashing in alternate

tile courses. Extend each piece of base flashing out onto the roof at least 100 mm 4 inches and nail to the deck. Extend the stepped base flashing up along the wall not less than 100 mm 4 inches and stop beneath the cap flashing or anchor beneath wood siding in frame construction. Set cap flashings in a sawcut reglet into masonry and concrete construction, and lap cap flashing over the flashing below not less than 75 mm 3 inches. Lap the stepped base flashing at vertical joints between the sections not less than 75 mm 3 inches.

#### 3.2.5.5 Valley Flashing

Ensure valley flashing is free from longitudinal seams and of a width sufficient to extend not less than 150 mm 6 inches under the roof covering on each side. Lap the sheets not less than 200 mm 8 inches in the direction of flow and secure to roofing construction with cleats on each side. Space cleats not more than 600 mm 24 inches on centers. Do not puncture the copper sheet with nails at any place.

##### 3.2.5.5.1 Open Valley Flashings

- a. Ensure open valleys are not less than 100 mm 4 inches wide. Determine the proper width by the following rule: Starting at the top with a width of 100 mm 4 inches, increase the width 25 mm 1 inch for every 2.4 meters 8 feet of length of the valley. Use flashing pieces made from full length sheets of sufficient width to cover the open portion of the valley and extend up under the roofing not less than 150 mm 6 inch on each side.
- b. Where two valleys of unequal size come together, where the areas drained by the valley are unequal, where the slope of the valley is 26 degrees or less (500 mm per meter or less 6 inches or less per foot), or where the intersecting roofs are of different slopes, install an inverted V-joint 25 mm 1 inch high along the centerline of the valley. Hem the edge of the valley sheets and extend 200 mm 8 inches under the roof covering on each side. Strip in valley metal edges with self-adhered bituminous underlayment.

##### 3.2.5.5.2 Closed Valleys

- a. Use flashing pieces for closed valleys of sufficient length to extend 50 mm 2 inches above the top of the roofing piece and lap the flashing piece below 75 mm 3 inches, and of sufficient width to extend up the sides of the valley far enough to make the valley 200 mm 8 inches deep.
- b. Place flashing with the roofing so that all pieces are separated by a course of tile. Set pieces so as to lap at least 75 mm 3 inches and to be entirely concealed by the tiles. Fasten flashing by nails at the top edge only.

#### 3.2.5.6 Through-Wall Flashing

Through-wall flashing includes sill, lintel, and spandrel flashing. Lay the flashing with a layer of mortar above and below the flashing so that the total thickness of the two layers of the mortar and flashing are the same thickness as the regular mortar joints. Use one piece flashing for lintels and sills. Terminate through-wall flashings with an angled drip edge at the face of the wall unless otherwise specified.

#### 3.2.5.6.1 Lintel Flashing

Extend lintel flashing the full length of lintel and turn up ends to create end dams. Use a slip sheet between the copper flashing and metal lintel. Extend flashing through the wall one masonry course above the lintel, across any air space, and turn up behind wall moisture barrier attached to the substrate wall. Bend flashing down over the top of lintel, terminating the outer edge of the flashing with an angled drip edge at the exterior side of the cladding. Underlay bed-joints of lintels at control joints with sheet metal bond breaker.

#### 3.2.5.6.2 Sill Flashing

Extend sill flashing the full width of the sill and turn up ends to create end dams.

#### 3.2.5.7 Eave and Rake Flashings

Place eave and rake flashings in accordance with [SMACNA 1793](#).

#### 3.2.6 Reglets

Use factory fabricated reglets, complete with fittings and special shapes as may be required, with fiberboard or another suitable separator to prevent crushing of the slot during installation. Locate reglets no less than [200 mm 8 inches](#) no more than [400 mm 16 inches](#) above roofing that do not have cant strips or locate no less than [125 mm 5 inches](#) no more than [325 mm 13 inches](#) above cant strip. Space reglet plugs not over [300 mm 12 inches](#) on centers and fill reglet grooves with sealant. Friction or slot-type reglets are to have metal flanges inserted the full depth of slot and are to be lightly punched every [300 mm 12 inches](#) to crimp the reglet and cap flashing together.

#### 3.2.7 Gravel Stops And Fascia

Fabricate sheets without longitudinal joints except where 2-piece fascias are used when fascia depth exceeds [175 mm 7 inches](#). Provide provision for expansion at joints. Provide factory fabricated internal and external corner units with mitered joints. Extend roof flange and splice plate of the gravel stop and fascia out on the roof no less than [100 mm 4 inches](#) and set in bituminous cement. Secure roof flange with nails spaced no greater than [75 mm 3 inches](#) on centers located within [25 mm 1 inch](#) of the outer edge of the flange. Do not face nail the fascia section except as specified for 2-piece fasciae. Ensure the upper piece of two-piece fascia is the same as specified above except that the fascia depth is at least [90 mm 3-1/2 inches](#) and overlaps the lower fascia not less than [50 mm 2 inches](#). Hook the lower piece [13 mm 1/2 inch](#) over edge strip and splice plate and face nail on [300 mm 12 inch](#) centers [25 mm 1 inch](#) below top of sheet. Hem the upper fascia [13 mm 1/2 inch](#) at lower edge and form to fit tight against lower fascia.

#### 3.2.8 Downspouts

Downspouts are to be set plumb and not less than [25 mm 1 inch](#) from the wall. Connect gutters with leaders on overhanging eaves to downspouts. Set leaders with a slope no less than 0.3 degrees, [5 mm per m 1/16 inch per foot](#) or more than 30 degrees below a horizontal line. Ensure leaders fit over the outlet tube in gutter bottom and fit into and are riveted to the downspout. Space rivets no more than [50 mm 2 inches](#). Set strainers

loosely in the eave tube opening in gutter. Make joints between lengths of downspouts by telescoping the end of the upper lengths at least 19 mm 3/4 inch into the lower length. Ensure downspouts terminating in drainage lines are neatly fitted into downspout boots and the joint filled with a portland cement mortar cap sloped away from downspout. Provide downspouts terminating at splash blocks or splash pans with stock elbow-type fittings. Provide downspout hangers adjacent to the joint at the top of each section of downspout, except ensure the bottom section an additional strap adjacent to the bottom joint when splash blocks or splash pans are required. Use 1.5 x 25 mm 1/16 x 1 inch flat stock hangers made of the same material as the downspout.

### 3.2.9 Gutters

Terminate gutters at least 13 mm 1/2 inch away from vertical surfaces.[ Anchor supporting cleats to the structure at spacings not exceeding 400 mm 16 inches.][ Fasten gutter brackets and spacers to roof nailer by screws or deformed shank-type nails and interlock with or fasten to the leading edge of gutter. Use gutter spacers of 1.5 x 25 mm 1/16 x 1 inch flat-stock of the same material as the gutter. Alternate brackets and spacers at no more than 900 mm 36 inches on centers.] Hang gutters with high points at ends or equidistant from downspouts and[ level][ slope no less than 0.3 degrees 5 mm per m 1/16 inch per foot]. Provide expansion joints in gutter lengths extending over 12.2m 40 feet.

### 3.2.10 Scupper Linings

Line the interior of scupper openings with sheet metal. Form the lining to return not less than 25 mm 1 inch against both faces of the wall or parapet with the outside edges folded under 13 mm 1/2 inch less on the top and sides. The perimeter of the lining must be approximately 13 mm 1/2 inch less than the perimeter of the scupper. Join the top and sides of scuppers on the roof-deck side to base flashing by a locked and soldered joint. Join the bottom edge by a locked and soldered joint to the base flashing and where required, form with a ridge to act as a gravel stop around the scupper inlet. Coat surfaces to receive the lining with bituminous cement.

### 3.2.11 Splash Pans

Install splash pans where downspouts discharge on roof surfaces and at other locations as indicated. Size pans as indicated. Bed and strip flash pans and roof flanges in plastic bituminous cement.

## 3.3 FIELD QUALITY CONTROL

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**NOTE:** When justified by the amount or criticality of the roofing involved, and similar requirements are not established for the Contractor Quality Control organization specified elsewhere, the following requirement will be added at the end of the paragraph:

A roofing technician responsible directly to the Contractor and experienced in the construction of the specified roofing system and related work shall perform the quality control functions and be on the site whenever roofing operations are in progress.

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Establish and maintain a quality control procedure for sheet metal used in conjunction with roofing to assure compliance of the installed sheet metal work with the contract requirements. Promptly remove and replace or correct any work found not to be in compliance with the contract in an approved manner. Submit a Quality Assurance Plan, including a checklist of points to be observed, prior to start of roofing work. Quality control must include, but not be limited to, the following:

- a. Observation of environmental conditions; number and skill level of sheet metal workers; condition of substrate.
- b. Verification of compliance of materials before, during, and after installation.
- c. Inspection of sheet metal work, for proper size and thickness, fastening and joining, and proper installation.

Document the actual quality control observations and inspections and provide a copy of the documentation to the Contracting Officer at the end of each day.

TABLE 1 - COPPER SHEET METAL WEIGHTS AND THICKNESSES	
Item Description	Copper (kg/square m)(oz/square foot)
Building expansion joints: Cap	4.9 16
Building expansion joints: Waterstop - bellows or flanged-U-type	4.9 16
Cleats (Continuous)	7.3 24
Covering on minor flat, pitched, or curved surfaces	6.1 20
Downspouts, heads, and leaders	4.9 16
Flashings: Base	6.1 20
Flashings: Cap, stepped or valley	4.9 16
Gravel stops and fasciae: Sheets, corrugated	4.9 16
Gutters (girth): Up to 380 mm 15 inches	4.9 16
Gutters (girth): 380 to 510 mm 15 to 20 inches	4.9 16
Gutters (girth): 510 to 635 mm 20 to 25 inches	6.1 20

TABLE 1 - COPPER SHEET METAL WEIGHTS AND THICKNESSES	
Item Description	Copper (kg/square m)(oz/square foot)
Gutters (girth): 635 to 760 mm 25 to 30 inches	7.3 24
Gutter brackets (girth): Up to 380 mm 15 inches	3 x 25 mm 1/8 x 1 inch
Gutter brackets (girth): 380 to 510 mm 15 to 20 inches	6 x 25 mm 1/4 x 1 inch
Gutter brackets (girth): 510 to 610 mm 20 to 24 inches	6 x 38 mm 1/4 x 1 1/2 inch
Gutter cleats and cover plates	4.9 16
Scupper lining	6.1 20
Strainers (wire gauge)	No. 9
Reglets (1)	3.1 10
Splash pans	4.9 16
Copings	4.9 16
Pitch pockets	4.9 16
Through-wall, flashings above roof line	4.9 16
Through-wall, below roof line, except as otherwise specified in paragraph MATERIALS	3.1 10

TABLE 2 - COPPER SHEET METAL JOINTS	
Item Designation	Type of Joint
Building expansion joint at roof	32 mm 1-1/4 inch single lock standing seam, cleated
Cleats (Continuous)	Butt
Flashings: Base	25 mm 1 inch flat locked, soldered 75 mm 3 inch lap for expansion joint

TABLE 2 - COPPER SHEET METAL JOINTS	
Item Designation	Type of Joint
Cap - in reglet	75 mm 3 inch lap
Cap - two - piece	Receiver 75 mm 3 inch lap Cap piece 75 mm 3 inch lap
Stepped	75 mm 3 inch lap
Through-wall spandrel flashing (metal)	38 mm 1-1/2 inch mechanical interlock
Valley	150 mm 6 inch lap, cleated
Sheet, corrugated	Butt with 6 mm 1/4 inch
Sheet, smooth	Butt with 6 mm 1/4 inch space
Gutters	38 mm 1-1/2 inch lap, riveted and soldered
Pitch pockets	25 mm 1 inch soldered lap
Reglets	Butt joint

-- End of Section --