



07 00 00

GENERAL THERMAL AND MOISTURE PROTECTION REQUIREMENTS – ROOF DRAINS & ROOFS

1. GENERAL

A. Related sections:

- i. 07 00 00 – General Thermal Moisture Protection Requirements – Roof Drains and Roofs
- ii. 07 31 13 – Asphalt Shingles
- iii. 07 41 10 – Copper & Zinc Sheet Metal Roofing
- iv. 07 41 20 – Steel Standing Seam Metal Roofing
- v. 07 52 13.11 – Cold Adhesive Applied Atactic-Polypropylene (APP) Modified Bituminous Membrane Roofing
- vi. 07 54 23 – Thermoplastic Polyolefin Roofing
- vii. 07 62 00 – Sheet Metal Flashing
- viii. 07 71 23.13 – Gutter Debris Guards
- ix. 07 84 00 – Fire Stopping

B. Roofing

i. Design Approach

- a. For new construction, flat and low slope roofs are not allowed to be the primary roof form for both aesthetic and performance reasons.
- b. For new construction the roof slope is 9 in 12 slope for buildings with the Georgian aesthetic.
- c. For new construction, the design shall minimize the placement of equipment on the roof.
- d. A variance may be requested to allow some low slope roof areas to accommodate mechanical systems. It is not unusual to notch some areas of the sloped roof to provide visual recesses for equipment.
- e. An addition to a building with an existing flat or low slope roof may dictate a design solution with a low slope roof. A variance should be requested for such situations.
- f. For a low slope roof approved through the variance process, a ¼-inch per foot is the minimum allowed. In some cases, intensive or extensive green roof may be allowed per separate approval by the Project Manager and UGA Grounds Department.
- g. The preferred roof material for most new construction is TPO, asphalt shingles, or metal roof (with at least 12-inch panel width) dependent upon specific project requirements and roof slope. Coordinate roof material selections with UGA PM.
- h. For some historic buildings a standing seam roof may be appropriate. Often these roofs are zinc coated copper or zinc.
- i. Interior drainage is prohibited. In instances where existing conditions necessitate such construction, the Design Professional shall submit a variance request to the Project Manager.
- j. Leak detection system(s) shall be installed in roofing systems beneath plazas which are located above occupied building spaces.

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ii. General

- a. Many existing roofs on campus contain asbestos and the Design Professional and Contractor shall be responsible for removal and disposal per applicable codes and regulations.
- b. Contractor shall protect all roof drainage systems during all roof repairs and all roof work. If these roof drainage systems are not protected, maintained or remain open, the Contractor shall be held liable for all damages in the building and on the roof resulting from this failure to protect. Interior drainage is discouraged, unless existing conditions necessitate such construction. Access panels shall be provided to all interior drain pipes and cleanouts to allow for inspection and maintenance of interior chases.
- c. Roof-mounted equipment (exhaust fans, motor starters, etc.):
 - a. On curbs: shall be installed on fully flashed curbs. Curb caps shall not be penetrated by attachment of motors or equipment; install raised brackets that attach through the side of curbs and allow equipment attachment without penetrating the curb cap.
 - b. On stands: allow 24 inches minimum clearance to facilitate repairs to equipment and allow for roof repairs/replacement.
 - c. Other supports: Equipment is not allowed to be mounted on pressure-treated wood, plastic pads or panels set directly on roof surface (exceptions can include ballasted systems specifically designed for maintenance observation and repairs; seek approval by UGA PM).
- d. For steep roofs, greater than 5 in 12 slope, include OSHA compliant fall arrest and roof anchor systems if roof is not accessible via lift or other similar equipment after building construction is complete.
- e. Roofs with parapet walls less than 42 inches in height may require fall arrest anchors. For low slope roofs greater than 3 stories in height, fall restraint anchors shall be installed.
- f. Stone precast concrete or metal coping systems require a complete thru wall flashing system. Flash the roof side of parapet walls the full height.

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iii. Reroofing

- a. Scaled roof plans should indicate, as accurately as possible the locations of existing drains, equipment, vents, hatches, parapets, gutters, scuppers, and other items in fixed locations.
- b. The Design Professional shall determine when new emergency drainage is required and shall add overflow scuppers to the design as required.
- c. Determine the extent of materials to be removed. If the scope cannot be predetermined, the Design Professional should include provision in contract that will allow on-site evaluation for the extent of work.
- d. Complete removal of the existing roofing system to the surface of the roof deck is required to be performed by the Contractor. The Contractor shall take all necessary steps to ensure that while removing the existing roof system, that the Contractor does not damage the existing roof deck. The Design Professional shall inspect the roof deck for damage



and document the repairs / replacement that will be required for the Contractor to perform.

- e. Only when project conditions warrant, identify components (e.g. mechanical equipment) that are required to be removed to facilitate roof repairs and upgrading.
- f. Provide a schedule when differing locations require definition as to extent of removal work and identify the subsequent roofing system to be installed.
- g. Ascertain that roof repairs and especially those involving new roof penetrations do not void existing roof warranties. The Project Manager will assist the Design Professional in determining who holds the current warranties.
- h. Provide the Project Manager with details of boots, sleeves, flashing, counter-flashing, curbs, crickets, etc. compatible with the roofing systems.
- i. The preferred method of flashing penetrations through flat roofs involves the construction of a curb around the opening. Small penetrations do not require curbs.

C. Flashing

- i. Thru-Wall Flashing: Contractor shall inspect and certify proper installation of all thru-wall flashing. Prior to installation of first piece of thru-wall flashing related to the wall system and prior to the first piece of thru-wall flashing related to the roof system, the Contractor shall coordinate an on-site meeting so that the Project Manager (or another person requested by the Project Manager, for example, the Design Professional) can be on site and witness the installation prior to it being covered up. It is the responsibility of the Contractor to allow time in the schedule for each of these initial inspections. The Contractor shall create and maintain a Thru-Wall Flashing Log listing the date, time, and area inspected and provide copies of the log at each job site meeting. The Contractor shall photo document inspections and each photo shall have a date and time stamp. The Contractor shall provide digital copies of the photos within 24 hours upon the Project Manager's request. The log and photos shall be part of the close-out documentation.
- ii. The reuse of existing counter flashing materials is discouraged. The Design Professional shall specify the installation of new counter flashing in materials matching the existing materials.

2. PRODUCTS

- A. All thru-wall flashing shall be stainless steel backplate with 40 mil rubberized asphalt peel and stick over the top for a seamless system.



07 21 19

CLOSED-CELL SPRAY POLYURETHANE FOAM INSULATION

1. **GENERAL**

A. Related sections:

- i. 00 73 01 – Sole Source / Sole Brand

2. **PRODUCTS**

A. This product has sole source approval and the manufacture is:

- i. GacoWallFoam 183M by Gaco Western
 - a. Gaco Western, LLC.
 - b. Address: 200 Wests Mercer Street, Suite #202, Seattle, WA, 98119
 - c. Office Phone: 800-331-0196
 - d. Website: www.gaco.com



07 24 00
EXTERIOR INSULATION AND FINISH SYSTEM (EIFS)

1. GENERAL

- A. The BOR and the UGA prohibits the use of Exterior Insulation Finish Systems (EIFS).



07 31 13
ASPHALT SHINGLES

1. GENERAL

- A. Related sections:
 - i. 01 35 13.02 – Special Project Procedures – Roofing & Hot Work
 - ii. 07 00 00 – General Thermal Moisture Protection Requirement – Roof Drains and Roofs
 - iii. 07 62 00 – Sheet Metal Flashing
 - iv. 07 71 23.13 – Gutter Debris Guards
- B. Asphalt shingles shall be “dimensional” or “architectural” type.
- C. Project Manager shall approve color selection.

2. PRODUCTS

- A. Acceptable manufacturers are:
 - i. Strip Shingle with laminated tabs: Three-tab type with random laminated tabs and random shadow line.
 - a. GAF Timberline HD
 - b. Owens Corning Oakridge
 - c. Tamko Heritage 30
- B. Roofing Felt Underlayment
 - i. Underlayment shall be synthetic mat manufactured from UV stabilized polypropylene rolls 54 inches wide by 222 feet long. Equal to “Deck Armor” as manufactured by GAF Corp.
- C. Penetration Flashing
 - i. Vent pipe flashing shall be equal to “Water-Tite Boots” as manufactured by IPS Roofing Products. Base manufactured from plastic, copper or aluminum multi-sized unit for 1-1/2-inch, 2-inch, 3-inch, and 4-inch pipe.
 - ii. Spilt pipe flashing shall be equal to “ASI Retrokit” as supplied by Copperstate Roofing Supply. It shall include galvanized steel base, collar assembly, and clamp.
- D. Mod Bit Underlayment
 - i. Self-adhesive membrane manufactured from elastomeric blend of asphalt with polyethylene film intended for use as shingle underlayment at transitions, roof-wall intersections, eaves, rakes and similar roof perimeters and around penetrations. Membrane shall be installed at all walls adjacent to roofing and at all penetrations. Minimum thickness 40 mils, minimum 36-inch wide rolls. High temperature formulation.

3. EXECUTION

- A. Warranty
 - i. Manufacturer’s 30-year system warranty is required.



07 41 10
COPPER & ZINC SHEET METAL ROOFING

1. GENERAL

- A. Related sections:
 - i. 01 35 13.02 – Special Project Procedures – Roofing & Hot Work
 - ii. 07 00 00 – General Thermal and Moisture Protection Requirements
 - iii. 07 62 00 – Sheet Metal Flashing
 - iv. 07 71 23.13 – Gutter Debris Guards
- B. References
 - i. Copper Development Association (CDA) – Contemporary Copper, A Handbook of Sheet Copper Fundamentals, Design, Details and Specifications.
 - ii. Sheet Metal and Air Conditioning Contractors National Association (SMACNA) – Architectural Sheet Metal Manual, latest edition.
- C. At the UGA Athens, Georgia campus, sheet metal roofs are most often used on historic buildings.
- D. Qualifications: Fabricators and subcontractors shall be pre-approved and deemed acceptable by virtue of having completed at least three comparable projects in the past three years. Examples of comparables shall be documented and an opportunity for site inspection may be required. Personnel responsible for the work shall be identified and should be associated with the comparable projects documented.
- E. Submittals
 - i. Product data including metal manufacturers and fabricator’s specifications, installation instructions, and general recommendations for roofing applications. Include certification or other data substantiating that materials comply with requirements.
 - ii. Samples:
 - a. 6-inch square sample of specified sheet metal roofing materials in thickness indicated.
 - b. Waterproofing sheet membrane underlayment.
 - iii. Shop drawings showing manner of forming, joining, and securing copper roofing, and pattern of seams. Show expansion joint details and waterproofing connections to adjoining work and at obstructions and penetrations. Indicate types of thicknesses of metal and dimensions. Provide layouts at ¼-inch scale and details at 3-inch scale.
 - iv. Mock-up: Before proceeding with final purchase of materials and fabrication of copper roofing components, prepare a mock-up of work. Incorporate materials and methods of fabrication and installation identical with project requirements. Install mock-up at roof area location directed by Design Professional. Retain accepted mock-up as quality standard for acceptance of completed copper roofing. If accepted, mock-up may be incorporated as part of copper roofing work.
 - a. Provide mock-up of sufficient size and scope to show typical pattern of seams, fastening details, edge construction, and finish texture and color.

2. PRODUCTS

- A. Copper or Zinc Coated Copper Roofing Sheets



- i. Z-T Alloy Coated Copper Sheets: Zinc / Tin coated copper sheet, ASTM B 370; temper H00 (cold-rolled) except where temper 060 is required for forming; thickness as indicated. Provide zinc / tin coating of 0.5 mils thick; both sides of copper sheet. Composition of the alloy shall be approximately 50-percent zinc and 50-percent tin with trace elements controlled for durability, corrosion resistance and color.
 - a. Roofing Sheets: Weight: 20 oz. per sq. ft. unless otherwise indicated.
 - ii. Product: Freedom Gray, Z-T Alloy Coated Copper, as manufactured by Revere Copper Products, Inc., or approved equal.
 - B. Zinc Roof Panels
 - i. Equal to Rheinzink 24 gauge and the manufacturer's approved underlayment to control condensation.
 - C. Shop-Fabricated Units
 - i. General Metal Fabrication: Shop-fabricate work to greatest extent possible. Comply with details shown and with applicable requirements of CDA "Copper in Architecture Handbook" and SMACNA "Architectural Sheet Metal Manual" 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 substrate. Comply with material manufacturer's instructions and recommendations for forming materials. For exposed copper work without excessive oil-canning, buckling, and too marks, true to line and levels indicate, with exposed edges folded back to form hems.
 - D. Underlayment
 - i. System shall include high temperature self-adhesive modified bitumen underlayment.
- 3. EXECUTION**
 - A. Preparation
 - i. Coordinate metal roofing with rain drainage work, flashing, trim, roof decking replacement (if applicable), and other adjoining work to provide a permanently leak proof, secure, and noncorrosive installation.
 - B. Installation of Metal Roofing
 - i. Except as otherwise indicated, comply with manufacturer's installation instructions and recommendations and with CDA "Copper in Architecture Handbook" and SMACNA "Architectural Sheet Metal Manual." Anchor units of work securely in place by methods indicated, providing for thermal expansion of metal 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.
 - ii. All seams shall be crimped.
 - iii. Construct the hip and ridge cap flashing by hand rolling panels to form watertight joints. Ridge and hip caps are not acceptable.
 - C. Warranty
 - i. The Manufacturer shall provide a 30-year system warranty.



07 41 20
STEEL STANDING SEAM SHEET METAL ROOFING

1. GENERAL

- A. Related sections:
 - i. 01 35 13.02 – Special Project Procedures – Roofing & Hot Work
 - ii. 07 00 00 – General Thermal and Moisture Protection Requirements
 - iii. 07 62 00 – Sheet Metal Flashing
 - iv. 07 71 23.13 – Gutter Debris Guards
- B. Qualifications: Fabricators and Subcontractors shall be pre-approved and deemed acceptable by virtue of having completed at least three comparable projects in the past three years. Examples of comparables shall be documented and an opportunity for site inspection may be required. Personnel responsible for the work shall be identified and should be associated with the comparable projects documented.
- C. Submittals
 - i. Product data including metal manufacturers and fabricator's specifications, installation instructions, and general recommendations for roofing applications. Include certification or other data substantiating that materials comply with requirements.
 - ii. Samples:
 - a. Square sample of specified metal roofing materials in thickness indicated.
 - b. Waterproofing sheet membrane underlayment.
 - iii. Shop drawings showing manner of joining and securing roofing, and pattern of seams. Show expansion joint details and waterproofing connections to adjoining work and at obstructions and penetrations. Indicate types of thicknesses of metal and dimensions. Provide layouts at ¼-inch scale and details at 3-inch scale.
 - iv. Mock-up: Before proceeding with final purchase of materials and fabrication of roofing components, prepare a mock-up of work. Incorporate materials and methods of fabrication and installation identical with project requirements. Install mock-up at roof area location directed by Design Professional. Retain accepted mock-up as quality standard for acceptance of completed roofing. If accepted, mock-up may be incorporated as part of roofing work.
 - a. Provide mock-up of sufficient size and scope to show typical pattern of seams, fastening details, edge construction, and finish texture and color.

2. PRODUCTS

- A. Roof Panels shall be:
 - i. Roll formed, 24-gauge galvanized steel (42,000 PSI yield), sheet coated on both sides with 1.25 ounce zinc coating, G-90 conforming to ASTM A525. Mechanically seamed cap strip with factory applied weather stripping.
 - ii. Finish: Manufacturer's standard color Kynar 500 fluoropolymer.
 - iii. Style: Thin Seam
 - a. Width: (see note on standing seam spacing)
 - b. Panel depth: 1 ¾-inch
 - c. 2 stiffening flues centered in the flat plan



- iv. Standing Seam Spacing:
 - a. Standing seam spacing shall be coordinated with the Project Manager to ensure proper aesthetic spacing for the building. Standing seams spaced 12 inches on center or 16 inches on center are typical spacing dimensions. 18 inches on center may be considered. 24 inches on center standing seam spacing is not acceptable.
- v. Mounting Clip: Fabricated from 22-gauge stainless steel with two fasteners through the 3-inch length.
- vi. Panel Length: As field measured to assure no panel end seams.

3. EXECUTION

- A. Preparation
 - i. Coordinate metal roofing with rain drainage work, flashing, trim, roof decking replacement (if applicable), and other adjoining work to provide a permanently leak proof, secure, and noncorrosive installation.
- B. Installation of Metal Roofing
 - i. Anchor units of work securely in place by methods indicated, providing for thermal expansion of metal 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.
- C. Warranty
 - i. The Manufacturer shall provide a 30-year system warranty.



07 52 13.11

**COLD ADHESIVE APPLIED ATACTIC-POLYPROPYLENE (APP) MODIFIED BITUMINOUS MEMBRANE
ROOFING**

1. GENERAL

- A. Related sections:
 - i. 01 35 13.02 – Special Project Procedures – Roofing & Hot Work
 - ii. 07 00 00 – General Thermal & Moisture Protection Requirements – Roof Drains & Roofs
 - iii. 07 71 23.13 – Gutter Debris Guards
- B. Single Source Responsibility:
 - i. All components shall be provided by and installed by a single manufacturer.
 - ii. Manufacturer approved installer with not less than 10 years of successful experience and installation of materials described in this section.

2. PRODUCTS

- A. Roof system to be constructed shall be a two-ply modified bitumen using a base ply and a cap ply.
- B. Equal to:
 - i. Firestone Building Products Company: APP Premium base ply and APP Premium FR cap ply field of roof and base flashing.
 - a. Membrane adhesive: MB cold adhesive.
 - b. Flashing adhesive: MB flashing adhesive.
 - c. Base sheet: APP 80 glass base cool.
 - d. Vapor retarder: V Force (self-adhesive) and V Force SB Primer.
 - e. Primer: 603 SA
 - ii. Johns Manville: JM APP base ply and Tricor M FR cap ply field of roof and base flashing.
 - a. Membrane adhesive: MBR cold application adhesive.
 - b. Flashing adhesive: MBR utility cement.
 - c. Base sheet: JM APP Base.
 - d. Vapor retarder: DynaGrip Base SD / SA (self-adhesive).
 - e. Primer: ASTM D41
 - iii. Performance Roof Systems, Inc: Derbibase Ultra base ply and Derbicolor GP FR cap ply field of roof and base flashing.
 - a. Membrane adhesive: Permastic cold adhesive.
 - b. Flashing adhesive: Perflash cold mastic.
 - c. Base sheet: PRS modified base.
 - d. Vapor retarder: PRS SA base (self-adhesive).
 - e. Primer: ASTM D41
- C. Insulation shall be supplied by the membrane manufacturer and included in the required 20-year system warranty.

3. EXECUTION

- A. The roof manufacturer shall provide a 20-year system warranty.
- B. Provide tapered installation with positive slope to drain.
- C. Standing water shall evaporate within 48 hours after each rain event.



07 54 23
THERMOPLASTIC-POLYOLEFIN (TPO) ROOFING

1. GENERAL

- A. Related sections:
 - i. 01 35 13.02 – Special Project Procedures – Roofing & Hot Work
 - ii. 07 00 00 – General Thermal & Moisture Protection Requirements – Roof Drains & Roofs
 - iii. 07 71 23.13 – Gutter Debris Guards
- B. This system is typically used for reroofing of existing roofs, not for new construction. Refer to Section 07 00 00 General Thermal & Moisture Protection Requirements – Roof Drains & Roofs.

2. PRODUCTS

- A. TPO single-ply roof system shall be a cold applied, white color, minimum of 60 mil thickness.
- B. Equal to:
 - i. Carlisle Syntec “Sureweld”
 - ii. Firestone Building Products “TPO”
 - iii. Johns Manville “TPO”
- C. Insulation shall be supplied by the membrane manufacturer and included in the required 20-year system warranty.
- D. A protection board is required to be provided between the insulation and the TPO membrane, regardless of whether or not it is required to obtain the roof warranty.
- E. Walkway pads shall be included for access from roof access point to all equipment access locations, if applicable, to facilitate maintenance.

3. EXECUTION

- A. The Contractor shall provide a 20-year system warranty.

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07 62 00

SHEET METAL FLASHING AND GUTTERS AND DOWNSPOUTS

1. GENERAL

- A. Related sections:
 - i. 01 35 13.02 – Special Project Procedures – Roofing & Hot Work
 - ii. 07 00 00 – General Thermal and Moisture Protection Requirements
 - iii. 07 71 23.13 – Gutter Debris Guards
- B. Summary
 - i. Gutters, leaders, conductor heads, and associated accessories.
- C. References
 - i. Copper Development Association (CDA) – Contemporary Copper, A Handbook of Sheet Copper Fundamentals, Design, Details and Specifications.
 - ii. Sheet Metal and Air Conditioning Contractors National Association (SMACNA) – Architectural Sheet Metal Manual, latest edition.
- D. At the UGA Athens, Georgia campus, the majority of new construction utilizes copper gutters, leaders, and conductor heads. Aluminum systems may be considered on a project specific basis and approved through the variance process.
- E. Qualifications: Fabricators and subcontractors shall be pre-approved and deemed acceptable by virtue of having completed at least three comparable projects in the past three years. Examples of comparables shall be documented and an opportunity for site inspection may be required. Personnel responsible for the work shall be identified and should be associated with the comparable projects documented.
- F. Submittals
 - i. Submit manufacturer’s technical information and installation instructions for:
 - a. Each specified sheet metal material and fabricated product, indicating that materials meet standards specified herein.
 - b. Solder and flux.
 - ii. Shop Drawings showing layout, profiles, method of joining, and anchorage details. Show expansion joint details where applicable and waterproof connections to adjoining work. Indicate types and thicknesses of metal and dimensions. Provide layouts at ¼-inch scale and details at 3-inch scale.
 - iii. Samples: Each material and profile proposed for use; minimum 12 inches long.
 - a. 12-inch long section of gutter.
 - b. 12-inch long section of downspout.
 - c. Gutter strap.
 - d. Downspout strap.
 - e. Each type of fastener.

2. PRODUCTS

- A. Flashing
 - i. Z-T Alloy Coated Copper Sheets: Zinc / tin coated copper sheet, ASTM B 370; temper H00 (cold-rolled) except where temper 060 is required for the thickness as indicated. Provide zinc / tin coating of 0.5 mils thick, both sides of copper sheet. Composition of the alloy shall be approximately 50-percent durability, corrosion resistance and color.
 - a. Counterflashing, Base Flashing and Trim: Weight: 16 oz. per sq. ft.



- B. Copper Gutter, Downspouts, Outlet Tube, and Conductor Head
 - a. Copper sheet: ASTM B370, temper H00 (Cold-rolled) except where temper 060 is required for forming; 16 oz. (0.0216-inch thick) except as otherwise indicated. Basis of design is manufactured by CopperCraft.
 - 1) Gutter and End Caps: Pre-fabricated, half-round gutters and smooth round downspout and elbow.
 - 2) Downspout and Outlet Tube: Pre-fabricated, smooth round downspout and elbow.
 - 3) Downspout Elbow: Pre-fabricated round, crimped elbow.
 - 4) Conductor Head: Windsor Conductor Head.
 - b. Size gutter and downspouts to meet requirements of 100-year rainfall events.
- C. Miscellaneous Materials and Accessories
 - i. Gutter Straps: 1-inch wide x 1/8-inch thick copper, equal to CopperCraft.
 - ii. Downspout straps shall not be used.
 - iii. Downspout brackets shall be used to stand off the downspout to clear the exterior wall by 2 inches.
 - iv. Strainers: Wire basket type copper strainer.
 - v. Solder: ASTM B 32, and shall be pure tin or lead-free, high tin.
 - vi. Flux: Tin bearing flux.
 - vii. Sails: Copper or hardware bronze, 0.109-inch minimum not less than 7/8 inches long barbed with large head.
 - viii. Rivets: 1/8 – 3/16-inch diameter, with solid copper mandrels and washers.
- D. Fabrication
 - i. Fabricate components in accordance with SMACNA Manual and CDA Handbook.
 - ii. Pre tin edges of copper sheet.
 - iii. Solder shop formed joints. After soldering, remove flux, and wash clean.
 - iv. Fabricate corners in single units with minimum 18 inches long legs.
 - v. Fabricate vertical faces with bottom edge formed outward ¼-inch and hemmed to form drip.
 - vi. Provide the thermal expansion and contraction in sheet metal:
 - a. Provide expansion joints in sheet metal exceeding 15 feet in running length.
 - b. Place expansion joints at 10 feet on center maximum 2 feet from corners and intersections.
 - c. Joint width: Consistent with types and sizes of materials, minimum width ¼-inch.
 - vii. Unless otherwise indicated, provide minimum ¾-inch wide flat lock seams, lap in direction of water flow.

3. EXECUTION

- A. Installation
 - i. Install flashings and sheet metal as indicated and in accordance with SMACNA Manual and CDA Handbook.
 - ii. Install expansion joints at maximum 40 feet on center.
 - iii. Hung Gutter Installation:



- a. Hangers shall be of adjustable shank and circle type, secured by brass screws. Hangers shall be spaced not more than 32 inches apart.
- b. Outlet Tubes: Connect to outside leader or downspout with locked and soldered longitudinal seam. Upper end of tube shall be flanged ½-inch to gutter lining. Tube shall extend into leader at least 3 inches.



07 71 23.13
GUTTER AND DEBRIS GUARDS

1. GENERAL

A. Related sections:

- i. 07 00 00 – General Thermal & Moisture Protection Requirements – Roof Drains & Roofs
- ii. 07 31 13 – Asphalt Shingles
- iii. 07 41 10 – Copper & Zinc Sheet Metal Roofing
- iv. 07 41 20 – Steel Standing Seam Sheet Metal Roofing
- v. 07 52 13.11 – Cold Adhesive Applied Atactic – Polypropylene (APP) Modified Bituminous Membrane Roofing
- vi. 07 54 23 – Thermoplastic-Polyolefin (TPO) Roofing
- vii. 07 62 00 – Sheet Metal Flashing
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B. Gutter Debris Guards shall be included on all gutters for sloped roofs that are located under a canopy of trees or will be susceptible to leaf collection. Coordinate with the Project Manager.

C. If conductor drains are utilized, they shall have guards to prevent pigeons from nesting.

2. PRODUCTS

A. Acceptable Debris Guard manufacturers are equal to:

- i. Hallett Gutter Cover
- ii. Gutter Helmet by Southeastern Metals Manufacturing Company, Inc.

B. Screws shall be stainless steel or aluminum to attach to the clip.

C. Colors shall be coordinated with Project Manager.

D. Debris guard material shall be compatible with gutter material to avoid galvanic corrosion.



07 84 00
FIRE STOPPING

1. GENERAL

- A. Related sections:
 - i. 27 00 00 – General Communications Requirements
- B. Contractor shall be required to provide verification of purchase to UGA of product provided for fire stopping penetrations through rated partitions.
- C. UGA reserves the right to verify that the correct thickness of material has been provided at fire-stopped penetrations by cutting out sections at random at no extra cost to the contract.
- D. Fire stop installer shall post labels at all fire stopped penetrations to identify “hour rating”, UL System, etc. Submit samples with shop drawing submittals.
- E. The installing Contractor shall be trained and authorized by the manufacturer of the fire stop product used to do the work; authorization shall be included in product submittals.
- F. The manufacturer’s local representative shall be required to periodically visit the site to review the work done and make recommendations to UGA on the work performed. A site visit report shall be submitted to the Project Manager.
- G. Floor penetrations in all mechanical spaces shall be sealed and water-proofed. On new construction sleeves shall be cast-in-place schedule 40 steel pipe and shall project 3 inches above the floor in all above grade rooms housing mechanical equipment.
- H. All fire rated penetrations related to communications rooms, telecommunication conduit (MDF and IDF) shall be per Section 27 00 00 General Communications Requirements, 2B.

2. PRODUCTS

- A. Acceptable manufactures are:
 - i. Fire Protection Products
 - ii. Flame Stop, Inc.
 - iii. Hilti Corporation
 - iv. Specified Technologies, Inc.