

Section 07 11 13 Bituminous Dampproofing

Specifications

07 11 13-1

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Dampproofing of concrete masonry, using surface application, in the following locations:
 - 1. Install at exterior face of masonry prior to installation of board insulation.

1.2 RELATED SECTIONS

- A. Section 04 22 00 – Concrete Unit Masonry.

1.3 REFERENCES

- A. ASTM D-1227 Type III.

1.4 SUBMITTALS

- A. Submit under provisions of Section 01 33 00.
- B. Product Data: Manufacturer's printed data sheet, for specified products.
- C. Certificates: Product certificates signed by manufacturer certifying that:
 - 1. Materials comply with specified performance characteristics and physical requirements.
 - 2. Installer is qualified and approved by manufacturer.
- D. Manufacturer's installation instructions.
- E. Manufacturer's report on field inspection of substrates, prior to installation.
- F. Executed warranties.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: A firm with not less than 10 years experience manufacturing crystalline waterproofing of the type specified, able to provide test reports showing compliance with specified performance characteristics, and able to provide on-site technical representation to advise on installation.
- B. Installer Qualifications: Experienced in work of the type specified in this section and approved in writing by waterproofing manufacturer.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.
- B. Store materials protected from exposure to harmful weather conditions and at temperature conditions recommended by manufacturer.

1.7 WARRANTY

- A. Manufacturer's Warranty: Provide manufacturer's standard warranty document executed by authorized company official; warranty period: 5 years commencing on Date of Substantial Completion.
- B. Installer's Warranty: Provide warranty signed by installer that reads as follows:
 - 1. Installer warrants that, upon completion of the work, surfaces treated with crystalline waterproofing will be and will remain free of water leakage resulting from defective workmanship or materials for a period of 5 years from Date of Substantial Completion.
 - 2. In the event that water leakage occurs within the warranty period from such causes, the installer shall, at his own expense, repair, replace, or otherwise correct such defective workmanship and materials.
 - 3. Installer shall not be liable for consequential damages.
 - 4. Installer's liability shall be limited to repair, replacement, or correction of defective workmanship and materials.
 - 5. This warranty excludes leaks or other defects due to causes beyond the installer's control, including but not limited to structural failure, movement of the structure, fire, earthquakes, tornadoes, and hurricanes.

PART 2 PRODUCTS

2.1 MANUFACTURER

- A. Karnak: 100 AF
- B. Tamms: Dehydratine 75
- C. Sonneborn Hydrocide 600

Section 07 11 13 Bituminous Dampproofing

Specifications

07 11 13-2

D. W.R. Meadows: Sealmastic Emulsion

2.2 MATERIALS

- A. Dampproofing Products: Provide installed products that comply with the following, when tested using cured concrete samples made without admixtures, with two 0.05 inch (1 mm) thick coats of waterproofing:
- B. Dampproofing: Two-coat bituminous dampproofing.
 - 1. First Coat Coverage: 50 square feet (maximum) per gallon
 - 2. First Coat Coverage: 50 square feet (maximum) per gallon

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify substrate conditions, which have been previously installed under other sections, are acceptable for product installation in accordance with manufacturer's instructions.
- B. Obtain dampproofing manufacturer's approval of substrates; submit field inspection report.
- C. Do not install unless substrate and ambient air temperature are within range acceptable to dampproofing manufacturer.

3.2 PREPARATION OF CMU

- A. Prepare surfaces to be treated in accordance with dampproofing manufacturer's instructions.
- B. Clean laitance, curing compounds, excess form oil, dirt film, paint, coatings or other foreign matter harmful to the performance of dampproofing from surfaces of CMU to be treated.

3.3 INSTALLATION

- A. Comply with manufacturer's instructions, including product data, technical bulletins, catalog installation instructions, and product carton instructions.
- B. Mix materials in accordance with manufacturer's instructions.
- C. Dampen surfaces and keep damp before application; remove free surface water before application of treatment.
- D. Apply in two coats, either by soft bristle brush or suitable spray equipment – verify means of application with manufacturer's product data.

3.4 FIELD QUALITY CONTROL

- A. Do not cover surfaces with other construction until they have been observed by manufacturer's field representative and Architect/Engineer.

3.5 CLEANING AND PROTECTION

- A. Clean spillage and overspray from adjacent surfaces using appropriate cleaning agents and procedures immediately upon application.
- B. Protect installed product from damage during construction.

END OF SECTION

Section 07 19 00 Water Repellants

Specification

07 19 00-1

PART 1 GENERAL

- 1.01 SECTION INCLUDES
- A. Water repellent coating applied to new exterior brick and cast stone surfaces.
 - B. High Solids water repellent to be applied at new brick veneer inset panels with narrow wall cavity.
 - C. Pressure washing exterior masonry and stone surfaces for cleaning prior to application of Water Repellants – per manufacturer's recommendations.
- 1.02 RELATED SECTIONS
- A. Section 04 21 13- Brick Veneer: Brick surfaces.
 - B. Section 07 92 00 - Joint Sealers.
- 1.03 REFERENCES
- A. FS SS-W-110C - Water Repellent, Colorless Silicone, Resin Base.
- 1.04 SYSTEM DESCRIPTION
- A. Coating to exhibit ability to permit 4 percent maximum moisture absorption in material being treated.
- 1.05 SUBMITTALS
- A. Submit under provisions of Section 01 33 00.
 - B. Product Data: Provide details of product description, tests performed, limitations to coating, cautionary procedures required during application, and chemical properties including percentage of solids.
 - C. Manufacturer's Installation Instructions: Indicate special procedures and conditions required.
 - D. Manufacturer's Certificate: Certify that Products meet or exceed specified requirements.
- 1.06 QUALIFICATIONS
- A. Manufacturer: Company specializing in manufacturing the Products specified in this section with minimum ten years experience.
 - B. Applicator: Company qualified performing the work of this section with minimum three years experience.
- 1.07 MOCKUP
- A. Provide mockup of surface to be coated
 - B. Prepare coated surface on one full standard panel
 - C. Mockup may remain as part of the Work.
- 1.08 DELIVERY, STORAGE, AND HANDLING
- A. Deliver, store, protect and handle products to site under provisions of Section 01 60 00.
 - B. Protect coating liquid from freezing.
- 1.09 ENVIRONMENTAL REQUIREMENTS
- A. Do not apply coating when surface temperature is lower than 50 degrees or higher than 100 degrees F.

PART 2 PRODUCTS

- 2.01 MANUFACTURERS
- A. Noxcrete: Stifle V.
 - B. Tamms: Chemstop.
 - C. Prosoco: Custom Masonry Sealer
 - D. Advanced Chemical Technologies: SIL-ACT ATS-22
- 2.02 MATERIALS
- A. Coating: Silane, colorless; containing 5 percent minimum solids.
- 2.03 MANUFACTURERS (HIGH SOLIDS WATER REPELLANT)
- A. Degussa Corporation: Chem-Trete PB-VOC
 - B. Tamms: Chemstop WB Heavy Duty.
 - C. Prosoco: Block Guard/Graffiti Control

Section 07 19 00 Water Repellants

Specification

07 19 00-2

- 2.04 MATERIALS (HIGH SOLIDS WATER REPELLANT)
A. Coating: Silane, colorless; containing 40 percent minimum solids.

PART 3 EXECUTION

- 3.01 EXAMINATION
A. Verify joint sealants are installed and cured.
B. Verify surfaces to be coated are dry, clean, and free of efflorescence, oil, or other matter detrimental to application of coating.
- 3.02 PREPARATION
A. Delay work until concrete substrate is cured a minimum of 60 days.
B. Remove loose particles and foreign matter.
C. Remove oil or foreign substance with a chemical solvent which will not affect coating.
D. Scrub and rinse surfaces with water and let dry.
E. Pressure-wash all surfaces to receive sealer; use 2500 psi pressure (minimum).
- 3.03 APPLICATION
A. Apply coating in accordance with manufacturer's instructions.
B. At new brick surfaces, apply at rate of sq. ft./gallon as per manufacturer's instructions, by airless spray.
C. Apply in two continuous, uniform coats.
D. To be applied at all new exterior brick veneer surfaces of building.
E. At new brick veneer panel surfaces with inset panels and having less than 1" airspace in wall cavity, apply "HIGH SOLIDS" water repellent.
- 3.04 PROTECTION TO FINISHED AND ADJACENT WORK
A. Protect adjacent surfaces not scheduled to receive coating.
B. Protect property.
C. If applied to unscheduled surfaces, remove immediately by a method instructed by coating manufacturer.

END OF SECTION

Section 07 21 00 Building Insulation

Specifications

07 21 00-1

PART 1 - GENERAL

- 1.01 SECTION INCLUDES
- A. Board insulation and integral vapor retarder at cavity wall construction.
 - B. Foil faced batt thermal insulation at interstitial space between studs, trusses, crevices and penetrations; unfaced sound attenuation batts above suspended ceiling tile.
 - C. Vapor Barrier at crevices, corners, intersections, where the insulation board is not applied, as required to provide continuous vapor barrier envelope around building.
 - D. Mineral fiber insulation at perimeter gap at CMU and roof deck.
- 1.02 SYSTEM DESCRIPTION
- A. Extent of insulation work is shown on drawings and indicated by this section.
 - B. All insulation shall meet requirements of Section 720, IBC, 2012 Edition.
- 1.03 REFERENCES
- A. ASTM C578 - Preformed, Cellular Polystyrene Thermal Insulation.
 - B. ASTM C665 - Mineral Fiber Batt Blanket Insulation
- 1.04 ENVIRONMENTAL REQUIREMENTS
- A. Install insulation adhesives in accordance with manufacturer's instructions.

PART 2 - PRODUCTS

- 2.01 INSULATION MATERIALS
- A. Batt Insulation: ASTM C665, preformed glass fiber batt, friction fit, manufactured by Owens Corning, conforming to the following:
 - 1. Thermal Resistance: R19 at 10 inch batts.
 - 2. Facing: Foil faced; unfaced at sound attenuation batts on suspended ceilings
 - 3. Thicknesses; verify, as indicated in drawings; 6" at sound attenuation batts.
 - 4. Manufacturers:
 - a. Celotex
 - b. Owens Corning
 - c. Knauf
 - B. Board Insulation: ASTM C578, extruded polystyrene board, conforming to the following:
 - 1. Facing: Water resistant integral film, one side.
 - 2. Size: 16" wide, 96" length, 2" thick.
 - 3. Compressive Strength: 15 psi minimum.
 - 4. Edges: Square
 - 5. Products/Manufacturers:
 - a. Amifoam SB by Tenneco
 - b. Cavitymate by Dow.
 - c. Foamglas by Owens Corning
 - C. Mineral Fiber Insulation: ASTM C553 and E 96, conforming to the following:
 - 1. Absorption: less than 1% by weight and volume
 - 2. Thicknesses: minimum of 4" before compressed into cavities.
 - 3. Manufacturers:
 - a. Thermafiber LLC: FireSpan
 - b. Owens Corning: Safing Insulation/MW
- 2.02 ADHESIVES
- A. Adhesive: Type recommended by insulation manufacturer for application.
- 2.03 ACCESSORIES
- A. Tape: Mesh reinforced; compatible with insulation board.
- 2.04 VAPOR BARRIER
- A. Vapor Barrier: ASTM E96, reinforced 3 ply polyethylene vapor barrier; Type-65.
 - B. Tape: Asphalt mastic tape used at overlaps of vapor barrier sheets.

Specifications

Section 07 21 00 Building Insulation

Specifications

07 21 00-2

- C. Patch Tape: Self-adhesive tape used to repair any holes in the vapor barrier that are caused during installation and adjacent construction.
- D. Tape and patch tape shall be made by same manufacturer of vapor barrier.
- E. Board Joint Tape: As recommended by board insulation manufacturer.

PART 3 - EXECUTION

3.01 EXAMINATION AND PREPARATION

- A. Verify that substrate, adjacent materials are dry and ready to receive insulation and adhesive.
- B. Verify that vapor barrier and adjacent surfaces to be adhered are clean and dry.

3.02 INSTALLATION - BATT INSULATION

- A. Install insulation and vapor retarder in accordance with insulation manufacturer's instructions.
- B. Install in exterior walls roof and ceiling spaces at gaps or voids.
- C. Fit insulation tight in spaces. Leave no gaps or voids.
- D. Where insulation is required on ceilings, provide and install on associated HVAC and electrical items (diffusers/necks, light fixture backs, etc); leave no crevasses, fitting tightly on the items so as to provide a continuous, uninterrupted layer of insulation on ceiling and all associated and integral items.

3.03 INSTALLATION - VAPOR BARRIER

- A. Install vapor barrier in accordance with insulation manufacturer's instructions.
- B. Install without gaps or voids.
- C. Secure sheet barrier to surfaces with tape. Lap edges and ends 6 inches and adhesive seal to ensure complete and continuously seal. Patch all holes with patch tape
- D. Lap all window and door frame perimeters with barrier at wall with 3 inches of contact over frame bearing to frames with 1 inch of contact and seal.
- E. Vapor barrier shall be installed at perimeter gap at wall and roof deck; lap vapor barrier at perimeter of corrugated steel roof deck, down face/edge of deck at building perimeter so as to prevent outside air from seeping into interstitial space.

3.04 INSTALLATION - BOARD INSULATION

- A. Apply adhesive in three continuous beads per board length to 1/8 inch thick on CMU.
- B. Daub adhesive tight to protrusions to ensure continuity of vapor retarder and air seal.
- C. Install boards horizontally between wall reinforcement.
- D. Place membrane surface facing out; tape seal board joints.
- E. Stagger end joints; butt edges and ends tight to adjacent boards.
- F. Cut and fit insulation tight to protrusions or interruptions to the insulation plane.

END OF SECTION

Section 07 26 00 Under-Slab Vapor Barrier

Specifications

07 26 00 - 1

PART 1 – GENERAL

1.01 SUMMARY

- A. Products Supplied Under This Section
 1. Vapor barrier, seam tape, mastic, and pipe boots for installation under concrete slabs.
- B. RELATED SECTIONS
 1. Section 03 30 00 Cast-in-place Concrete

1.02 REFERENCES

- A. American Society for Testing and Materials (ASTM)
 1. ASTM E 1745-97 (2004) Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill Under Concrete Slabs
 2. ASTM E 154-99 (2005) Standard Test Methods for Water Vapor Retarders Used in Contact with Earth Under Concrete Slabs
 3. ASTM E 96-05 Standard Test Methods for Water Vapor Transmission of Materials
 4. ASTM F 1249-06 Standard Test Method for Water Vapor Transmission Rate Through Plastic Film and Sheeting Using a Modulated Infrared Sensor
 5. ASTM E 1643-98 (2005) Standard Practice for Installation of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs
- B. American Concrete Institute (ACI)
 1. ACI 302.1R-04

1.03 SUBMITTALS

- A. Quality Control / Assurance
 1. Manufacturer's samples, literature
 2. Manufacturer's installation instructions and details for placement, seaming and pipe boot installation

PART 2 – PRODUCTS

2.01 MATERIALS

- A. Vapor Barrier must have all of the following qualities:
 1. Permeance of less than 0.01 Perms [grains/(ft² *hr * in.Hg)] per ASTM F 1249 or ASTM E 96; 15 mil thickness minimum
 2. ASTM E 1745 Class A
- B. Vapor Barrier products:
 1. Stego Wrap Vapor Barrier (15-mil) by Stego Industries LLC
 2. Zero Perm Vapor Barrier by Alumiseal
 3. Perminator by W.R. Meadows

2.02 ACCESSORIES

- A. Seam Tape:
 1. Permeance less than 0.3 perms per ASTM F 1249 or ASTM E 96
- C. Vapor Proofing Mastic:
 1. Permeance less than 0.3 perms per ASTM F 1249 or ASTM E 96
- E. Pipe Boots
 1. Construct pipe boots from vapor barrier material, pressure sensitive tape and/or mastic per manufacturer's instructions.

Section 07 26 00
Under-Slab Vapor Barrier

Specifications

07 26 00 - 2

PART 3 – EXECUTION

3.01 PREPARATION

- A. Ensure that subsoil is approved by Architect or Geotechnical Engineer.
 - 1. Level and tamp or roll aggregate, sand or granular base.

3.02 INSTALLATION

- A. Install vapor barrier in accordance with manufacturer's instructions and ASTM E 1643.
 - 1. Unroll vapor barrier with the longest dimension parallel with the direction of the concrete pour.
 - 2. Lap vapor barrier over footings and/or seal to foundation walls.
 - 3. Overlap joints 6 inches and seal with manufacturer's tape.
 - 4. Seal all penetrations (including pipes) per manufacturer's instructions.
 - 5. No penetration of the vapor barrier is allowed except for reinforcing steel and permanent utilities.
 - 6. Repair damaged areas by cutting patches of vapor barrier, overlapping damaged area 6 inches and taping all four sides with tape.
- B. Manufacturer's representative to visit site upon completion for submittal to Architect.

END OF SECTION

Section 07 27 00 Weather Barriers

Specifications

07 27 00-1

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes
 - 1. Water resistive barriers and air barrier assembly in exterior walls; weather barriers.
 - 2. Provide flashing terminations at material transitions, openings, and perimeter of building faces (horizontal and vertical).

1.2 REFERENCES

- A. ASTM International:
 - 1. ASTM E283 - Standard Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.
 - 2. ASTM E330 - Standard Test Method for Structural Performance of Exterior Windows, Curtain Walls, and Doors By Uniform Static Air Pressure Difference.
- B. Sealant, Waterproofing and Restoration Institute:
 - 1. SWRI - Sealant Specification.

1.3 PERFORMANCE REQUIREMENTS

- A. Thickness: 0.121 inches average.
- B. Breaking Strength Test: 94 pounds mean value per ASTM D 5034.
- C. Water Vapor Transmission: 9-15 perms (grains per hr.in.Hg.sqft) per ASTM E96, dessicant method.
- D. Pliability: No signs of cracking per AC38, Sec. 3.3.4.
- E. Ultraviolet Exposure: Not less than 10 months prior to exterior cladding coverage.
- F. Accelerated Aging Cycling: No signs of failure at 21 days per AC38.
- G. Water Resistance Test: Exceeds one hour per ASTM D779.
- H. Elongation: 1.9 inches mean value per ASTM D 5034, 4 inch wide sample.

1.4 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Submittal procedures.
- B. Product Data: Submit data on material characteristics, performance criteria, limitations.
- C. Submit detail drawings of all flashing termination conditions, typical opening details, and perimeter of building faces (horizontal and vertical).

1.5 SEQUENCING

- A. Section 01 10 00 - Summary: Work sequence.
- B. Sequence Work to permit installation of materials in conjunction with related materials and seals.

1.6 COORDINATION

- A. Coordinate the Work of this section with sections referencing this section.

PART 2 PRODUCTS

2.1 WEATHER BARRIERS

- A. Manufacturers:
 - 1. VaproShield WallShield
 - 2. Dupont Tyvek Commercial Wrap D
 - 3. Substitutions: 01630

2.2 ACCESSORIES

- A. Tape: compatible with sheet material.
- B. Attachments: Galvanized steel bars and anchors.

Section 07 27 00 Weather Barriers

Specifications

07 27 00-2

PART 3 EXECUTION

3.1 Installation

- A. Installation: Comply with manufacturer's installation instructions including but not limited to the requirements specified in this section. Sequence construction such that barrier material is not exposed for more than 12 months before covering material is applied.
- B. At locations with Stucco/ Portland Cement Plaster, provide one layer of corrugated Tyvek "Stucco Wrap" (or approved equal) over the weather barrier.
- C. Overlaps: Install shingle style to shed water, with minimum 2 inch (50 mm) overlap horizontally, 6 inch (300 mm) overlap vertically, and 12 inches (600 mm) overlap at corners, at all locations where this is possible.
- D. Fasteners at Metal Studs: Use manufacturer's recommended fasteners with up to 2 inch (50 mm) plastic disk around shank of No. 10 stainless steel self-taping screws. Use 2 inch (50 mm) long screws when 1/2 inch (12 mm) thick gypsum board is used.
- E. Fastener Pattern: Attach one fastener or more every 24 inches (600 mm) in horizontal and vertical direction.
- F. Edge Seal Where Material is Sealed to Itself: Construction Tape.
- G. Edge Seal Where Material is Sealed to Adjacent Material: Install approved sealant on the substrate 1 inch to 2 inches back from the edge of the barrier material. Press barrier material into the sealant to seal to create air and water seal. If required by location of termination, provide furring strip to hold the barrier material in place.
- H. Edge Seal at Penetrations: Install approved sealant on the substrate 1 inch (25 mm) back from the edge of the cut. Press barrier material into the sealant to create air and water seal. Install Flashing on the exterior of the barrier material to join the material to the penetration.
- I. Final Inspection of barrier material: When each section is complete, the installer shall visually inspect the installation and verify that all rows of material have overlapped the row below it, that all materials and components have been installed in a shingle fashion, that the fasteners are the proper ones, that the nailing pattern is correct, that all penetrations and terminations have been done correctly and that doors and windows have been properly flashed

3.2 PROTECTION OF INSTALLED CONSTRUCTION

- A. Section 01 70 00 - Execution and Closeout Requirements: Protecting installed construction.
- B. Do not permit adjacent work to damage work of this section.

END OF SECTION

Section 07 60 00 Sheet Metal Flashing and Trim

Specifications

07 60 00 - 1

PART 1 GENERAL

1.01 SUMMARY

- A. Fabricated sheet metal items for roof work, including flashings, coping/fascia, joints, vents.
- B. Roof manufacturer's requirements for flashing and sheet metal work shall be met in order to maintain the roof warranty.
- C. Any conflicting requirements of this Section with the roof manufacturer's warranty requirements shall necessitate the Contractor to provide a higher quality product, installation, and/or quantity to satisfy warranty requirements.
- D. Manufactured coping systems at parapets and other locations detailed in drawings.
- E. Kiln vent weatherproof cap.

1.02 SUBMITTALS

- A. Fabrication Drawings: Submit sheet metal fabrication shop drawings, drawn to scale, sheet metal components showing details of jointing and attachments, sizes, dimensions and shape of various members.
- B. Manufactured Items: Submit manufacturer's product data of required coping and flashing systems including related accessories.
- C. Submit manufacturer's standard color selection.
- D. All flashing and sheet metal materials, systems, and shop drawings shall be reviewed and approved by the roofing system manufacturer. Provide written endorsement from roof system manufacturer of all submitted proposed flashing details.
- E. Provide calculations for gutters and downspouts for resistance to winds and rain, as required by all applicable Codes. Indicate sizes, strengths, gauges, fasteners, support brackets, etc.

1.03 JOB CONDITIONS

- A. Coordinate sheet metal with roofing, interfacing and adjoining work for proper sequencing of each installation.
- B. Ensure weather resistance and durability of the work and protection of materials and finishes.

1.04 WARRANTIES

- A. Flashing & coping systems: 2-year material and labor covering all defects in materials and workmanship within warranty period. To be combined with roofing warranty
- B. Fluoropolymer coatings: 5-years against cracking, fading, crazing, peeling, loss of cohesion and/ or adhesion, and chalking.

PART 2 PRODUCTS

2.01 SHEET METAL MATERIALS

- A. Precoated Aluminum, with Kynar 500 paint finish to match Class 1 Clear Anodized Storefront and Curtainwall framing; minimum 0.063 inch thick, unless otherwise indicated in drawings and elsewhere in this specification. 3003 alloy, meeting ASTM B-209. Use 2-coat fluoropolymer finish meeting AAMA 605.2-90 criteria or anodized finishes on all exposed-to-view items. Use mill finish on all concealed items.
 - 1. Manufacturers
 - a. Petersen Aluminum
 - b. Ryerson Building Products
 - c. Unaclad
- B. Lead: 4 lb. per sq.ft. (20 kg/m²), common desilverized pig lead.
- C. Counterflashing: .040 Aluminum (color clad type). minimum 16 oz./ s.f.

2.02 MISCELLANEOUS MATERIALS AND ACCESSORIES

- A. Welding: Perform welding of aluminum sheet metal to applicable ASTM standards.
- B. Fasteners: Provide only corrosion resistant treated or stainless steel.

Specifications

Section 07 60 00 Sheet Metal Flashing and Trim

Specifications

07 60 00 - 2

1. Screws: the best type for the application. Include neoprene washers at exposed screw fasteners.
2. Nails: Hot-dipped galvanized, minimum 12 gauge (2.5 mm) with large flat head annular or spiral thread type shank of sufficient length to penetrate substrate a minimum of 7/8 inch (22 mm).
3. Rivets: Compatible with aluminum
- C. Bituminous Coating: SSPC-Paint 12, solvent type bituminous mastic, nominally free of sulfur, compounded for 15-mil (0.38 mm) dry film thickness per coat.
- D. Roofing Cement: See Section 07 52 00.
- E. Metal Accessories: Clips, straps, anchoring devices and similar accessory units as required for installation of work, matching or compatible with material being installed, non-corrosive, size and gage required for performance.
- F. Sealant: type specified in Section 07 92 00.

2.03 FABRICATED UNITS

- A. Metal Fabrication: Shop-fabricate work to greatest extent possible; manufactured systems may be used at the Contractor's option. Comply with details, with applicable requirements of 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 substrates. Comply with material manufacturer instructions and recommendations. Form exposed sheet metal work without excessive oil-canning, buckling and tool marks, true to line and levels with exposed edges folded back to form hems.
- B. Seams: Fabricate nonmoving seams in sheet metal with flat-lock seams. Tin edges to be seamed, form seams, and weld. Solder seams continuously at exposed side for waterproof performance. Smooth for visual appearance and, to provide even surface for application of overlaying roof membranes.
- C. Expansion Provisions: Fabricate as indicated. Include back-up and cover plates. Provide "hug" edges for cover plates.
- D. Corners and Intersections: Fabricate one-piece formed metal units at corners and intersections.
 1. Miter at each corner condition.
 2. Aluminum:
 - a. Double lap seam and solder both sides continuously.
 - b. At the outside corner of the drip, provide folded metal bridge to span the open corner. Weld bridge piece to each side of the within hem of drip.
 3. Extend each leg of the formed metal component up to 24 inches, unless indicated otherwise, and provide an expansion joint before continuation of the flashing.
- E. Sealant Joints: Where movable, non-expansion type joints are indicated or required for proper performance of work, form metal to provide for proper installation of elastomeric sealant, in compliance with industry standards.
- F. Separations: Separate metal from non-compatible metal or corrosive substrates by coating concealed surfaces at locations of contact, with bituminous coating or other permanent separation as recommended by manufacturer/fabricator.
- G. Copings: Minimum 0.063" thickness aluminum; use shop (or factory) prefabricated corners, tees, crossovers, and transitions for minimum 24" distances in each respective dimension from intercepts. Apply finish coatings after fabrication
- H. Mastic: type recommended by roof system manufacturer for roof conditions and flashing materials used

Specifications

Section 07 60 00 Sheet Metal Flashing and Trim

Specifications

07 60 00 - 3

PART 3 EXECUTION

3.01 SHEET METAL INSTALLATION REQUIREMENTS

- A. General: Except as otherwise noted, comply with manufacturer's installation instructions and recommendations, and SMACNA "Architectural Sheet Metal Manual".
 - 1. Anchor units of work to substrates securely.
 - 2. Conceal fasteners as much as possible.
 - 3. Set units true to line and level as indicated.
 - 4. Install work with laps, joints and seams which will be permanently watertight and waterproof.
 - 5. Bed flanges of work in a thickened coat of bituminous roofing cement where required for waterproof performance.
- B. Workmanship: Form sheet metal accurately to the dimensions and shapes required. Finish molded and broken surfaces with true, sharp and straight lines and angles. Where intercepting other members, cope to an accurate fit and weld securely. Unless otherwise specifically permitted by the Architect, turn exposed edges back ½ inch (13 mm).
- C. Expansion: Form, fabricate and install sheet metal so as to adequately provide for expansion and contraction in the finished work.
- D. Weatherproofing: Finish watertight and weathertight. Make lock seam work flat and true to line and sweated full of solder. Make lock seams and lap seams, when welded at least ½ inch (13 mm) wide, except that aluminum is to be welded. Where lap seams are not welded, lap according to pitch but in no case less than 3 inches (76 mm). Make flat and lap seams in direction of flow.
- E. Joints: Join parts with rivets or sheet metal screws where necessary for strength of stiffness. Provide suitable watertight expansion joints as indicated on the Drawings or required for proper installation.
- F. Nailing: Wherever possible, secure metal by means of clips or cleats without nailing through the metal. Unless indicated otherwise, space nails, rivets and screws not more than 8 inch (203 mm) apart and, where exposed to the weather, use lead washers. Nail into wood with barbed roofing nails 1-1/4 inch long by 11 gauge through flat tin discs. Fasten in masonry with expansion type anchors.
- G. Welding: Thoroughly clean and tin joint materials prior to welding. Weld slowly in order to heat the seams thoroughly and to completely fill them with the weld. Make exposed welding on finished surfaces neat, full flowing and smooth.

3.02 METAL FLASHING AND COUNTERFLASHINGS

- A. Unless otherwise shown, all flashings shall be counterflashed.
- B. Flashings and counterflashings generally shall not exceed 10 feet (3 m) in length. Flashings shall be free from longitudinal joints.
- C. Counterflashings shall have both edges folded or returned upon themselves at least ½ inch and the lower edge shall overlap the flashing at least 4 inches with the lower edge parallel to the roof line. Counterflashing must be bent to the required shape before being placed.
- D. Make joints between the units shall with a ½ inch (13 mm) expansion joint between sheets with 8 inches (203 mm) wide backup plates and 6 inches (152 mm) cover plates formed to exact profile of units. Fill space between copings and plates with 2 continuous beads of sealant.
- E. Provide continuous cleats unless indicated otherwise.

3.03 VENT THROUGH ROOF FLASHING

- A. Provide sheet lead roof vent flashing where indicated.
- B. Cement metal flange to surface of the roofing ply with hot bitumen or flashing cement. Over the flange apply strip flashing as described in Section 07 55 00 and as detailed.

Specifications

Section 07 60 00 Sheet Metal Flashing and Trim

Specifications

07 60 00 - 4

- 3.04 CLEATS
- A. Provide continuous cleats where indicated or specified to secure loose edges of the sheet metalwork.
 - B. Space butt joints approximately 1/8 inch (3 mm) apart.
 - C. Fasten cleats to the supporting construction with nails evenly spaced not over 12 inches (305 mm) on centers. Fasten to concrete or masonry with screws driven in expansion shields set in concrete or masonry. The cleat shall be of sufficient width to provide adequate bearing area to insure a rigid installation.
- 3.05 COPING/FASCIA
- A. Fabricate to profile shown without longitudinal joints. Provide continuous cleat at bottom of fascia section. No exposed fasteners are permitted unless indicated otherwise. Provide clips at cant edge at roof side.
 - B. Provide ice-and-water shield over the cleat and mechanical fasteners as a substrate to the coping.
 - B. Provide expansion-contraction joints with backup and cover plates as indicated.
 - B. Fabricate internal, external corner units with mitered and continuously welded joints.
- 3.06 ROOF JOINTS
- A. Fabricate to profile shown without longitudinal joints. Provide continuous cleat at bottom of fascia section. No exposed fasteners are permitted unless indicated otherwise. Provide clips at cant edge at roof side.
 - B. Provide expansion-contraction joints with backup and cover plates as indicated.
 - C. Fabricate one-piece formed termination/connection units with mitered and continuously welded joints.
- 3.07 GRAVITY VENTS
- A. Fabricate as indicated.
 - B. At Contractor's option, provide manufactured units made of aluminum, similar in design and size as that indicated and appropriate for use in each condition.
- 3.08 SHEET METAL MATERIAL SCHEDULE
- A. General: Provide the following types of sheet metal at the locations indicated.
 - B. Aluminum:
 - 1. Flashings and counterflashings at roof-wall juncture

END OF SECTION

Section 07 84 00 Firestopping

Specifications

07 84 00-1

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes firestopping and through-penetration protection system materials and accessories; firestopping tops and penetrations of fire rated walls; and smoke sealing.
- B. Related Sections:
 - 1. Section 07 21 00 – Building Insulation: Vapor retarder materials to adjacent insulation.
 - 2. Section 04 22 00 -- Concrete Unit Masonry: Firestopping at metal deck and penetrations.
 - 3. Section 09 29 16 – Gyp Board Systems: Firestopping at metal deck and penetrations.
 - 4. Division 15 – Mechanical: Mechanical work requiring firestopping.
 - 5. Division 16 – Electrical: Electrical work requiring firestopping.

1.02 REFERENCES

- A. ASTM E84-Test Method for Surface Burning Characteristics of Building Materials.
- B. ASTM E119-Method for Fire Tests of Building Construction and Materials.
- C. ASTM E814-Test Method of fire Tests of Through Penetration Firestops.
- D. FM (Factory Mutual Engineering Corporation)-Fire Hazard Classifications.
- E. UL (Underwriters Laboratories, Inc.)-Fire Resistance Directory.
- F. UL 263 (Underwriters Laboratories, Inc.)-Fire Tests of Building Construction and Materials.
- G. UL 723 (Underwriters Laboratories, Inc.)-Test for Surface Burning Characteristics of Building Materials.
- H. UL 1479 (Underwriters Laboratories, Inc.)-Fire Tests of Through-Penetration Firestops.
- I. WH (Warnock Hersey)-Directory of Listed Products.

1.03 DEFINITIONS

- A. Firestopping (Through-Penetration Protection system): A sealing or stuffing material or assembly placed in spaces between and penetrations through building materials to arrest the movement of fire, smoke, heat and hot gases through fire rated construction.

1.04 SYSTEM DESCRIPTION

- A. Firestopping Materials: UL 1479 to achieve fire ratings as noted on drawings for adjacent construction, but not less than 1-hour fire rating.
- B. Firestop interruptions to fire rated assemblies, materials and components.

1.05 PERFORMANCE REQUIREMENTS

- A. Conform to UL requirements for fire resistance ratings and surface burning characteristics.
- B. Conform to all requirements of the State Fire Marshal of the State of Louisiana.

1.06 SUBMITTALS

- A. Section 01 33 00 – Submittal Procedures: Submittal procedures.
- B. Product Data: Submit data on product characteristics, performance and limitation criteria.
- C. Schedule: Provide a schedule of opening locations and sizes, penetrating items, and required listed design numbers to seal openings to maintain fire resistance rating of adjacent assembly.
- D. Manufacturer's Installation Instructions: Submit preparations and installation instructions.
- E. Manufacturer's Certificate: Certify products meet or exceed applicable code requirements.
- F. Engineering Judgments: For conditions not covered by UL or WH listed designs, provide judgments by licensed professional engineer suitable for presentation to authority having jurisdiction for acceptance as meeting code fire protection requirements.
- G. AHJ Inspection Material: Provide schedule and detailed instructive cut sheets of the fire penetration sealing system used and locations to the General Contractor for subsequent submittal to the AHJ inspector.

1.07 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years documented experience.
- B. Installer: Company whose major specialty is the installation of firestopping products.

Specifications

Section 07 84 00

Firestopping

Specifications

07 84 00-2

1.08 ENVIRONMENTAL REQUIREMENTS

- A. Do not apply materials when temperature of substrate material and ambient air is below 60 degrees F.
- B. Maintain this minimum temperature before, during and for minimum 3 days after installation of materials.
- C. provide ventilation in areas to receive solvent cured materials.

PART 2 PRODUCTS

2.01 FIRESTOPPING

- A. Manufacturer's
 - 1. Dow Corning Corp.
 - 2. STI
 - 3. 3M Fire Protection Products
 - 4. United States Gypsum Co.
- B. Product Description: Different types of products by multiple manufacturers are acceptable as required to meet specified system description and performance requirements; provide only one type for each similar application.
 - 1. Silicone Firestopping Elastomeric Firestopping: Single component silicone elastomeric compound and compatible silicone sealant.
 - 2. Foam Firestopping Compounds: Single Component foam compound.
 - 3. Formulated Firestopping Compound of Incombustible Fibers: Formulated compound mixed with incombustible non-asbestos fibers.
 - 4. Fiber Stuffing and Sealant Firestopping: Composite of ceramic fiber stuffing insulation with silicone elastomer for smoke stopping.
 - 5. Intumescent Firestopping: Intumescent putty compound which expands on exposure to surface heat gain.
 - 6. Firestop Pillows: Formed mineral fiber pillows.
 - 7. Metal Deck Plugs: Ceramic fiber stuffing formed to fit voids of corrugation of metal deck.

2.02 ACCESSORIES

- A. Primer: Type recommended by firestopping manufacturer for specific substrate surfaces and suitable for required fire ratings.
- B. Installation Accessories: Provide clips, collars, fasteners, temporary stops or dams, and other devices required to position and retain materials in place.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Section 01 31 00 - Coordination and project conditions.
- B. Verify openings are ready to receive firestopping.

3.02 PREPARATION

- A. Clean substrate surfaces of dirt, dust, grease, oil, loose material, or other matter which may affect bond of firestopping material.
- B. Remove incompatible materials which may affect bond.
- C. Install backing materials to arrest liquid material leakage.

3.03 APPLICATION

- A. Install material at fire rated construction perimeters and openings which contain penetrating sleeves, piping, ductwork, conduit and other items, requiring firestopping.
- B. Apply primer where recommended by manufacturer for type of firestopping material and substrate involved, and as required for compliance with required fire ratings.
- C. Apply firestopping material in sufficient thickness to achieve required fire and smoke rating.
- D. Compress fibered material to maximum 40 percent of its uncompressed size.
- E. Place foamed material in layers to ensure homogenous density, filling cavities and spaces. Place sealant to completely seal junctions with adjacent dissimilar materials.
- F. Place intumescent coating in sufficient coats to achieve rating required.

Specifications

Section 07 84 00

Firestopping

Specifications

07 84 00-3

- G. Upon completion of installation of all firestopping, notify the district State Fire Marshal for inspection of all completed fire and/or smoke barrier walls before any construction is installed that would conceal such construction and prevent a proper inspection.
- 3.04 FIELD QUALITY CONTROL
- A. Inspect installed firestopping for compliance with specifications and submitted schedule.
- 3.05 PROTECTION OF INSTALLED CONSTRUCTION
- A. Protect adjacent surfaces from damage by material installation.

END OF SECTION

Section 07 92 00 Joint Sealers

Specifications

07 92 00-1

PART 1 – GENERAL

- 1.01 SECTION INCLUDES
 - A. Preparing sealant substrate surfaces.
 - B. Sealant and joint backing.
- 1.02 SYSTEM DESCRIPTION
 - A. System performance to achieve moisture and joint seals.
- 1.03 SUBMITTALS
 - A. Product Data: Provide data indicating sealant chemical characteristics, performance criteria, substrate preparation, limitations, and colors available.
- 1.04 QUALITY ASSURANCE
 - A. Perform work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.
 - B. In the event of that sealants of this section conflicts with sealants specified in other sections of these specifications, the sealant which is higher quality and expense shall be assumed to be the sealant to be used.
- 1.05 ENVIRONMENTAL REQUIREMENTS
 - A. Maintain temperature and humidity recommended by the sealant manufacturer during and after installation.
- 1.06 WARRANTY
 - A. 5-year full material & labor against failures in material & workmanship

PART 2 – PRODUCTS

- 2.01 SEALANTS
 - A. Silicone Sealant (Type A):
 - 1. Description: ASTM C920, single component, non-staining, non-bleeding, non-sagging type.
 - 2. Product/Manufacturer:
 - a. Silicone 790 manufactured by Dow Corning.
 - b. Spectrem I manufactured by Tremco.
 - c. Pecora 890.
 - B. Silicone Sealant (Type B):
 - 1. Description: ASTM C920, single component, neutral curing, non-sagging, non-staining, non-bleeding; color as selected.
 - 2. Product/Manufacturer:
 - a. Silicone 791 manufactured by Dow Corning.
 - b. Spectrem 2 manufactured by Tremco
 - c. Pecora 864.
 - C. Silicone Sealant (Type C):
 - 1. Description: ASTM C920, single component, fungus resistant, non-sagging, non-staining, non-bleeding; color as selected;
 - 2. Product/Manufacturer:
 - a. Parking Structure Silicone Sealant NS by Dow Corning.
 - b. Ultrapruf SCS 2300 by GE.
 - c. Pecora 301S.

Section 07 92 00 Joint Sealers

Specifications

07 92 00-2

- D. Silicone Acetoxy Sealant (Type D):
 - 1. Description: ASTM C920, single component, mildew resistant.
 - 2. Product/Manufacturer:
 - a. Silicone 786 manufactured by Dow Corning.
 - b. Tremsil 200 manufactured by Tremco.
 - c. Approved equal.
- E. Silicone Sealant (Type E):
 - 1. Description: ASTM C920, single component, paintable.
 - 2. Product/Manufacturer:
 - a. Trade Mate manufactured by Dow Corning.
 - b. Sonolac manufactured by Sonneborn.
 - c. Approved equal.

2.02 ACCESSORIES

- A. Primer: Non-staining type, recommended by sealant manufacturer to suit application.
- B. Joint Cleaner: Non-corrosive and non-staining type, recommended by sealant manufacturer; compatible with joint forming materials.
- C. Joint Backing: ASTM D1056 D1565; round, closed cell polyethylene foam rod; oversized 30 to 50 percent larger than joint width.
- D. Bond Breaker: Pressure sensitive tape recommended by sealant manufacturer to suit application.

PART 3 - EXECUTION

3.01 EXAMINATION AND PREPARATION

- A. Verify that substrate surfaces and joint openings are ready to receive work.
- B. Remove loose materials and foreign matter which might impair adhesion of sealant.
- C. Verify that joint backing and release tapes are compatible with sealant.

3.02 INSTALLATION

- A. Clean and prime seal joints in accordance with manufacturer's instructions.
- B. Install sealant in accordance with manufacturer's instructions.
- C. Measure joint dimensions and size materials to achieve 2:1 width/depth ratios.
- D. Install joint backing to achieve a neck dimension no greater than 1/3 the joint width.
- E. Install bond breaker where joint backing is not used.
- F. Apply sealant within recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.
- G. Tool joints concave; NOTE: SLOPPY APPLICATION WILL NOT BE ACCEPTED.
- H. Install sealants at brick veneer and CMU control joints shown on drawings.

3.03 SCHEDULE

	<u>LOCATION/SURFACE</u>	<u>TYPE</u>
A.	CMU (Exterior)/Brick	A
B.	Paving	C
C.	Metals	B
D.	Doors & Windows(perimeter)	B
E.	Ceramic Tile/SGFT	D
F.	CMU (Interior)	E

END OF SECTION

Section 08 11 13 Steel Doors and Frames

Specifications

08 11 13 -1

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Flush steel doors and frames; integral sidelites; non-rated and fire rated.
- B. Grouting of all interior and exterior frames.

1.02 RELATED SECTIONS

- A. 08 71 00 – Finish Hardware

1.03 SUBMITTALS

- A. Shop Drawings: Indicate door and frame elevations, internal reinforcement, cut-outs for glazing, louvers, and finish.
- B. Product Data: Indicate door and frame configurations, location of cut-outs for hardware reinforcement.

1.04 QUALITY ASSURANCE

- A. Conform to the following:
 - 1. SDI-100 - Standard Steel Doors and Frames.
 - 2. DHI- Door Hardware Institute - The Installation of Commercial Steel Doors in Wood Frames and Builder's Hardware.
 - 3. Fire Rated Door Panel and Frame Construction: ASTM E152, NFPA 252, UL 10B, NFPA 80.
 - 4. Handicapped: ANSI A117.1.
 - 5. HMMA 861 - Commercial Hollow Metal Doors and Frames.

PART 2 PRODUCTS

2.01 DOORS AND FRAMES

- A. Manufacturers:
 - 1. CECO Corp.
 - 2. Steelcraft
 - 3. Curries
- B. Exterior Doors: Grade III, steel reinforced.
- C. Exterior & Interior Frames: 14 gage thick material at exterior, 16 gage at interior.
- D. Door Core: Polystyrene at rated interior; Polyurethane at all exterior doors.

2.02 ACCESSORIES

- A. Silencers: Resilient rubber.
- B. Bituminous Coating: Fibered asphalt emulsion.
- C. Primer: Zinc chromate type.
- D. Anchors: Wire masonry type; drywall types; expansion anchor types; use types as appropriate for existing and new wall construction types.
- E. Door Louvers: Same material and finish as door; provide insect screens.

2.03 FABRICATION - DOORS

- A. Fabricate doors with hardware reinforcement welded in place.
- B. Close top and bottom edge of exterior doors with inverted steel channel closure. Seal joints watertight.
- C. Provide face sheets, thicknesses, stiffeners, vertical, top, and bottom edges, glass stops in accordance with HMMA 861.

2.04 FABRICATION - FRAMES

- A. Fabricate frames as welded unit.
- B. Fabricate frames with hardware reinforcement plates welded in place. Provide mortar guard boxes.

Specifications