

SECTION 07100

DAMPPROOFING

PART 1 GENERAL

1.1 DESCRIPTION OF WORK

- A. The work includes furnishing all labor, materials and equipment required to complete the Dampproofing work as shown on the Drawings and as specified herein.
- B. Work Included: The work of this Section shall include, but is not limited to the following:
 - 1. Dampproofing of below grade concrete walls

1.2 QUALITY ASSURANCE

- A. Materials: Handle, store, and install proprietary materials in compliance with manufacturer's instructions.

1.3 SUBMITTALS

- A. Manufacturer's Data. Submit copies of manufacturers technical information and installation instructions in accordance with the requirements of SECTION 01340. This submittal is for information only and shall be made prior to installing any materials. Submittal must be made for all materials required for the installation and should include certifications and any other data as may be required to show compliance with these specifications. Transmit a copy of each instruction to the installer.

1.4. DELIVERY AND STORAGE

- A. Deliver packaged materials and store in original containers with seals unbroken and labels intact until time of use, in accordance with manufacturer's instructions.

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PART 2 PRODUCTS

2.1 MATERIALS:

A. Dampproofing :

1. Mar-Flex 500 Foundation Coating, as manufactured by Mar-Flex Systems, Inc.
2. Karnak 83 or 86, as manufactured by Karnak Chemical Corporation.
3. Hydrocide 700 or 700B, as manufactured by Sonneborn.
4. Sealmastic Type 2 or 3, as manufactured by W.R. Meadows, Inc.
5. or approved equal.

PART 3 EXECUTION

3.1 INSTALLATION:

- A. Inspection: Installer must examine the areas and conditions under which the work is to be installed and notify the General Contractor of conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected in a manner acceptable to the Installer.
- B. Installation: All surfaces to be coated with dampproofing must be dry, swept clean and free from oil, grease, rust, scale, loose paint and dirt. Dampproofing shall be spray applied at the rate of 2 gallons/100 sq. ft. Dampproofing shall be allowed to cure for 24 hours before any backfilling.

END OF SECTION

SECTION 07145

CONCRETE SEALER

PART 1 GENERAL

1.1 GENERAL

- A. Description of Work: The work includes furnishing all labor, materials and equipment required to complete the Concrete Sealing work as shown on the Drawings and as specified herein.
- B. Work Included: The work of this Section shall include, but is not limited to the following:
 - 1. Sealing of exposed interior concrete floor slabs and exterior horizontal concrete surfaces

1.2 QUALITY ASSURANCE

- A. Materials: Handle, store, and install proprietary materials in compliance with manufacturer's instructions.

1.3 SUBMITTALS

- A. Manufacturer's Data. Submit copies of manufacturers technical information and installation instructions in accordance with the requirements of SECTION 01340. This submittal is for information only and shall be made prior to installing any materials. Submittal must be made for all materials required for the installation and should include certifications and any other data as may be required to show compliance with these specifications. Transmit a copy of each instruction to the installer.

1.4. DELIVERY AND STORAGE

- A. Deliver packaged materials and store in original containers with seals unbroken and labels intact until time of use, in accordance with manufacturer's instructions.

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PART 2 PRODUCTS

2.1 MATERIALS

- A. Concrete Sealer: Shall be Thoroclear Special, as manufactured by Thoro Architectural Coatings, a division Of Harris Specialty Chemicals, Inc., or approved equal.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Inspection: Installer must examine the areas and conditions under which the work is to be installed and notify the General Contractor of conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected in a manner acceptable to the Installer.
- B. Installation: All concrete surfaces to be sealed with concrete sealer must be dry, swept clean and free from oil, grease, rust, scale, loose paint and dirt. Sealer shall be applied in strict accordance with manufacturer's printed instructions. Sealer shall be applied by brush or low pressure sprayer. Surface shall be completely flooded at a rate of 200-300 sq. ft. per gallon. Care shall be taken to treat in one coat; after drying starts the sealer will repel itself. Do not apply when temperature below or expected to be below 40 degrees F.
- C. Protection: Protect sealed concrete surfaces until sealer had completely dried. Protect sealed surfaces from damage and spills until final acceptance of the building.

END OF SECTION

SECTION 07200

INSULATION

PART 1 GENERAL

1.1 DESCRIPTION OF WORK

- A. The work includes furnishing all labor, materials and equipment required to complete the Insulation work as shown on the Drawings and as specified herein.
- B. Work Included: The work of this Section shall include, but is not limited to the following:
 - 1. Perimeter insulation, and wall and roof insulation.
- C. Work Not Included:
 - 1. Wall and roof insulation installed with pre-engineered metal buildings.

1.2 QUALITY ASSURANCE

- A. Deliver materials in unbroken containers labeled with Manufacturer's name and "R" value. Do not break seals or use materials until time for installation.

1.3 SUBMITTALS

- A. Submit Product data for review and acceptance in accordance with SECTION 01340 prior to delivery of any insulation material to the site.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Perimeter Insulation: Shall be 2" thick Styrofoam brand Square Edge, rigid, extruded polystyrene board, meeting ASTM C578, Type IV, with a total "R" value of 10, as manufactured by The Dow Chemical Company, or approved equal.
- B. Wall Insulation (Rigid): Shall be 1 1/2" thick Styrofoam brand Square Edge, rigid, extruded polystyrene board, meeting ASTM C578, Type IV with a total "R" value of 7.5, as manufactured by The Dow Chemical Company, or approved equal.

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- C. Roof Insulation shall be Apache "Isofoil", rigid polyisocyanurate foam board with a minimum "R" value of 38, complying with ASTM C1289, Class I, Type II, as manufactured by Apache Productions Company, or approved equal.
- E. Insulation / Ceiling Finish Board: Shall be "Thermax Heavy Duty Plus", 2" thickness, as manufactured by "The Celotex Corporation" (1-800-CELOFAX). Thermax Heavy Duty Plus (HDP) Insulation/Finish board system shall be installed **EXPOSED** directly to the interior of rooms using the Thermax PVC Interlock Joint Closure System placed 4'-0" o.c. Panels shall be held in place by decorative screws. Screw size, type and spacing per manufacturers recommendations.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that framing system is complete and ready to receive insulation system. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 EXECUTION

- A. Insulation: Install in locations shown on drawings, thicknesses as required to attain specified resistance (R) values. Install vapor barrier on inside or "warm" side. Installation shall be in strict accordance with the Manufacturer's printed instructions for the specific product.

END OF SECTION

SECTION 07610

PREFORMED METAL ROOFING

PART 1 GENERAL

1.1 DESCRIPTION OF WORK

- A. The work includes furnishing all labor, materials, equipment and appliances required to complete the Metal Roofing work indicated on the Drawings and as specified herein.

1.2 RELATED WORK

- A. Flashing, Trim and Downspouts - SECTION 07620.
- B. Caulking & Sealants - SECTION 07920.

1.3 SUBMITTALS

- A. Shop Drawings: Submit shop drawings indicating plan for entire layout, panel configuration, finish, dimensions, attachment methods, etc., in accordance with SECTION 01340 before fabrication of any material.
- B. Colors: Submit 6" x 6" samples on metal of manufacturer's standard colors for Owner's selection.

1.4 DELIVERY, STORAGE AND HANDLING

- A. Protect roofing metals and accessories from damage and discoloration during transit and on site. Store sheets and components in a dry manner providing ample ventilation to prevent condensation, bending, twisting or abrasions. Do not store other materials or allow traffic on roofing while in storage or in place. Care must be taken to prevent contact with any substance which may cause a discoloration in the finish during storage.

1.5 WARRANTY

- A. Furnish manufacturer's standard 20-year warranty against fading, chipping, cracking or peeling and a 20-year weathertight warranty covering roofing panels

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- B. Furnish written warranty signed by the applicator and the general contractor for a two-year period from the date of substantial completion of the building covering repairs required to maintain the roof and flashing in watertight condition.

1.6 QUALITY ASSURANCE

- A. Field Dimensions: Contractor shall be responsible for all field measurements.
- B. Manufacturer shall have a minimum of ten (10) years experience in manufacture of architectural metal roofing systems.
- C. If roofing panels are site-rolled, rollforming machine must be owned and operated by the specified manufacturer. Installer operated rollforming machines are not acceptable.
- D. Installer shall have a minimum of five (5) years experience in installation of metal roofing of a similar size and scope. Installer shall be factory-approved and certified for roofing system specified. Substrate shall be inspected before roof installation to verify that substrate complies with shop drawings and specified tolerances. Do not install the metal roofing until any unsatisfactory conditions have been corrected. Commencement of the metal roofing work shall constitute acceptance of the substrate.

1.7 REFERENCES

- A. Underwriters Laboratories, Inc. wind load testing procedures as defined by Standard UL-580 for Class UL-90.
- B. ASTM E330, Structural Performance.
- C. ASTM A 370 - Standard Test Methods and Definitions for Mechanical Testing of Steel Products.
- D. ASTM A 446/A446M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process, Structural (Physical) Quality.
- E. ASTM D 4214 - Standard Test Methods for Evaluating Degree of Chalking of Exterior Paint Films.
- F. SMACNA (Sheet Metal and Air Conditioning Contractors National Associations) Architectural Sheet Metal Manual Specifications.
- G. ASHRAE Handbook of Fundamentals.
- H. AAMA-605-2 Finish Standards.

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- I. ASTM E84, Flame Spread Rating.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Material: Panels shall be custom fabricated 24 gauge hot-dipped galvanized steel embossed, G-90 ASTM A-653, Grade C, 40 KSI yield point, 16" Stand'N Seam as manufactured by Fabral or approved equal.
- B. Finish: Finish shall be full strength 70% Kynar 500 fluorocarbon baked-on coating, factory applied prior to rollforming. Color shall be selected by Owner from manufacturer's standard colors, similar to "Hartford Green".
- C. Felt Underlayment: 30# asphalt saturated fiberglass felt, nonperforated.
- D. Fasteners: All roofing panel fasteners shall be stainless steel and shall be concealed unless noted otherwise. Where fasteners are exposed, they shall be field-painted to match panel with paint supplied by manufacturer.
- E. Miscellaneous: Contractor shall provide all miscellaneous, clips, closure strips, ridge cap, trim, sealants, etc., necessary for complete installation of metal roofing. All exposed trim shall be the same gauge, color and finish as the roofing panels.
- F. Intermediate Support System: Roof panel manufacturer shall provide all necessary intermediate "Z" support members as required to transfer roof panel loads into building roof framing members.

PART 3 EXECUTION

3.1 INSTALLATION

- A. General: Installation shall be in accordance with the accepted shop drawings, the best standards of the industry and consistent with manufacturer's instructions.
- B. Anchorage system shall be concealed. Clips shall engage in such a manner as to permit panel unlimited thermal expansion and contraction.
- C. A double-lock seam shall be used to join panels together after anchorage. Panel's seam shall be joined and folded by machine, resulting in a flat seam. Clips folded into the double-lock seam will not be permitted.
- D. The roofing panels shall be installed plumb, straight and true to adjacent work.

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- E. Ribs shall be equidistant from corners, hips, mullions, columns, etc, in accordance with the design concept.
- F. Roofing system shall be installed over snow and ice barrier per barrier manufacturer's instructions where ridge-to-eave length is over 60'- 0". Areas under 60'- 0" shall have 30 pound felt underlayment.
- G. Do not end lap or splice panels. Install panels in continuous lengths.
- H. All roof panels shall have manufacturer's recommended sealant in standing seams. Sealant tape at flashings shall be Tremco MBT-35 metal building tape or approved equal
- I. Secure neoprene closures imbedded in sealant, with metal closures.
- J. Clips shall be installed to meet the required snow and wind loads per manufacturer's recommendations.
- K. No perforations, cuts or penetrations by fasteners shall be made in the panels.
- L. Support roofing panels on top of roof insulation using bearing plates attached to the structural frame or manufacturer-provided intermediate support system.
- M. Touch Up: Only minor scratches and abrasions will be allowed to be touched up, and solely at the discretion of the Owner. All rejected material shall be replaced at the installer's expense.
- N. Clean Up: Leave all work areas clean, free from grease, finger marks and stains in accordance with manufacturer's recommendations. Remove all scrap and debris from surrounding area.

END OF SECTION

SECTION 07620

FLASHING, TRIM AND DOWNSPOUTS

PART 1 GENERAL

1.1 DESCRIPTION OF WORK

- A. The work includes furnishing all labor, materials and equipment required to complete the Flashing, Trim And Downspouts work as shown on the Drawings and as specified herein.

1.2 CODES AND STANDARDS

- B. Comply with the provisions of the following codes, specifications and standards, except as otherwise shown or specified:
 - 1. SMACNA Architectural Sheet Metal Manual.

1.3 RELATED WORK

- A. Metal Roofing - SECTION 07610.
- B. Caulking and Sealants - SECTION 07920.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Galvanized Steel: Shall be zinc-coated, conforming to ASTM Designation A-93-63T, commercial coating class with 1.25 oz. coating per square foot. All galvanized sheet metal shall be No 26 USS gauge.
- B. Clad Steel: Shall be minimum 24 gauge galvanized steel with G60 fluoropolymer coating on exposed face, minimum 1.0 mil dry film thickness, smooth finish. Back side coated with manufacturer's standard coating. Color to be selected from manufacturer's standard colors.
- C. Zinc Alloy: Shall be "Hydro-T-Metal".
- D. Solder: Shall conform to ASTM Designation B32-60A, alloy grade 50A.

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- E. Flux: Shall be approved brand of non-corrosive flux or raw muriatic acid killed with zinc. Remove excess flux and neutralize surfaces after soldering.
- F. Nails, Bolts, Screws, and Rivets: Shall be of type best suited for the purpose and of composition that will not support galvanic action.
- G. Caulking: See SECTION 07920, Caulking and Sealants.
- H. Continuous Metal Gutters: Shall be prefinished 0.032" thick aluminum, continuously formed gutters.
- I. Metal Downspouts: Shall be prefinished 3" x 4" x .024" thick aluminum downspouts

PART 3 EXECUTION

3.1 EXECUTION

- A. General: Sheet metal flashing and trim shown on the Drawings is not intended to indicate all locations requiring flashing and trim. The subcontractor shall provide and install flashing and trim as required for complete and watertight structure in accordance with normal and prudent building practices.
- B. Workmanship:
 - 1. All workmanship shall be equal to the best of standard practices in modern sheet metal shops. All sheet metal work shall be accurately formed to the dimensions and shapes required. Molded and broken members shall finish with true, straight and sharp lines and angles; and where intercepting each other, shall be coped to an accurate fit and securely soldered. All exposed edges of sheet metal work shall be turned back 1/2" unless otherwise detailed.
 - 2. Apply all sealants and caulking compound strictly in accordance with Manufacturer's instructions.
- C. Flashings: All flashing furnished and materials used shall comply with the requirements of the roofing material and the roofing subcontractor, and subcontractor installing the exterior siding.
- D. Gutters and Downspouts: Provide continuous metal gutters. Provide downspouts at each corners of the building and at intermediate points for spacing not greater than 50 feet. Provide pre-cast concrete splash blocks at each downspout.

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- E. Inspections: The Subcontractor shall carefully examine and, if necessary, test all sheet metal work specified herein, and this Subcontractor shall make all repairs to the work if necessary, leaving it in satisfactory condition.

END OF SECTION

SECTION 07710

SNOW GUARDS

PART 1 GENERAL

1.1 DESCRIPTION OF WORK

- A. The work includes furnishing all labor, materials, equipment and appliances required to complete the Snow Guard work indicated on the Drawings and as specified herein.

1.2 RELATED WORK

- A. Preformed Metal Roofing - SECTION 07410.

1.3 SUBMITTALS

- A. Shop Drawings: Submit shop drawings with plan for layout of snow guards in accordance with the requirements of SECTION 01340.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Snow Guards:
 - 1. Standing Seam Metal Roofs: Snow guards for standing seam metal roofs shall be S-5 Colorgard Snow Retention System as manufactured by MRIL, or approved equal.

PART 3 EXECUTION

3.1 INSTALLATION

- A. General: Installation shall be in accordance with the accepted shop drawings and the manufacturer's instructions.
- B. Snow guards shall be installed for a distance of 2 feet beyond the edge of the opening at all exterior doors.

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1. Standing Seam Metal Roofs: Snow guards shall be secured to the standing seam using stainless steel set screws at 115 inch-pounds of torque. Clamps shall be installed on each seam within 8 – 12 inches of the roof panel eave edge.

END OF SECTION

SECTION 07920

CAULKING AND SEALANTS

PART 1 GENERAL

1.1 DESCRIPTION OF WORK

- A. The work includes furnishing all labor, materials and equipment required to complete the Caulking and Sealant work as shown on the Drawings and as specified herein.
 - B. Work Included: Priming and caulking expansion joints, control joints, seams, building penetrations, joints between wood and concrete or masonry construction, and elsewhere as shown, or as necessary to provide weathertight construction on all new work. Drawings do not indicate all locations requiring sealing or caulking. The subcontractor shall provide sealing and caulking as required for complete and watertight structure in accordance with normal and prudent building practices.
- 1.2 Submit product data for review and approval in accordance with SECTION 01340 prior to delivery of any Caulking and Sealant material to the site.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Sealant: All caulking material shall be Dow Corning 790 Building Sealant, General Electric Silicone Construction 1200 Sealant, or approved equal, unless noted otherwise.
- B. Backing Material: Shall be expanded closed cell polyethylene for joints other than expansion joints.
- C. Primer and Bond Breaker: Shall be as recommended by sealant manufacturer.

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PART 3 EXECUTION

3.1 EXECUTION

A. Workmanship:

1. All caulking work shall be done in accordance with the product manufacturer's printed recommendations and as specified.
2. All surfaces to be caulked shall be cleaned and dry prior to caulking work. Clean metals with aromatic solvent.
3. Apply primer to concrete surfaces.
4. Use nozzle width of proper size to fill joint neatly and completely. Minimum application temperature 40°F.
5. Tool joints smooth with beading tool. Surface of joint shall be slightly below adjacent surfaces.
6. Care shall be taken to prevent smears on adjacent surfaces. Any smears shall be removed immediately. Use masking tape as necessary.
7. Work shall be done prior to painting.
8. Bond Breaker shall be used between sealant and expansion joint material, if recommended by sealant manufacturer.

END OF SECTION