

SECTION 07131

SELF-ADHERING SHEET WATERPROOFING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. This Section includes the following:
 - 1. Rubberized-asphalt sheet waterproofing, premolded.
 - a. Location: All foundation walls abutting interior space, both public and non-public.
 - 2. Insulation protection board.
- B. Related Sections include the following:
 - 1. Division 7 Section "Building Insulation" for perimeter insulation at locations not receiving waterproofing.
 - 2. Division 7 Section "Self-Adhered Air/Vapor Barrier System" for tie-in with air/vapor barrier.
 - 3. Division 7 Section "Joint Sealants" for joint-sealant materials and installation.
 - 4. Division 9 Section "Tile" for waterproof membrane installed with thick set tile systems.

1.03 PERFORMANCE REQUIREMENTS

- A. Provide waterproofing that prevents the passage of water.

1.04 SUBMITTALS

- A. General: Submit in accordance with Section 01300.
- B. Product Data: Include manufacturer's written instructions for evaluating, preparing, and treating substrate, technical data, and tested physical and performance properties of waterproofing.
- C. Shop Drawings: Show locations and extent of waterproofing. Include details for substrate joints and cracks, sheet flashings, penetrations, inside and outside corners, tie-ins with adjoining waterproofing, and other termination conditions.
- D. Samples: For the following products:
 - 1. 12-by-12-inch square of waterproofing and flashing sheet.
 - 2. 12-by-12-inch square of protection board (insulation).
- E. Installer Certificates: Signed by manufacturers certifying that Installers comply with requirements.
- F. Product Test Reports: From a qualified independent testing agency indicating and interpreting test results of waterproofing for compliance with requirements, based on comprehensive testing of current waterproofing formulations.
- G. Sample Warranty: Copy of special waterproofing manufacturer's and Installer's warranty stating obligations, remedies, limitations, and exclusions before starting waterproofing.

1.05 QUALITY ASSURANCE

- A. Installer Qualifications: A qualified installer who is authorized, approved, or licensed by waterproofing manufacturer to install manufacturer's products.

- B. Source Limitations: Obtain waterproofing materials through one source from a single manufacturer.
 - 1. Obtain secondary materials from a single source for each product as approved by waterproofing manufacturer for intended use and compatible with sheet waterproofing.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver liquid materials to Project site in original packages with seals unbroken, labeled with manufacturer's name, product brand name and type, date of manufacture, and directions for storing and mixing with other components.
- B. Store liquid materials in their original undamaged packages in a clean, dry, protected location and within temperature range required by waterproofing manufacturer.
- C. Remove and replace liquid materials that cannot be applied within their stated shelf life.
- D. Store rolls according to manufacturer's written instructions.
- E. Protect stored materials from direct sunlight.

1.07 PROJECT CONDITIONS

- A. Substrate: Proceed with work after substrate construction, openings, and penetrating work have been completed and areas are free of standing or running water, ice, and frost. Verify that concrete is dry, smooth, and free from sharp or ragged out-angles, honeycombing, rock pockets, depressions, and projections.
- B. Environmental Limitations: Apply waterproofing within the range of ambient and substrate temperatures recommended by waterproofing manufacturer to meet warranty requirements. Do not apply waterproofing to a damp or wet substrate.
 - 1. Do not apply waterproofing in snow, rain, fog, or mist.
- C. Maintain adequate ventilation during preparation and application of waterproofing materials.

1.08 WARRANTY

- A. General: Special warranties specified in this Section shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and will be in addition to and run concurrent with other warranties made by Contractor under requirements of the Contract Documents.
- B. Special Manufacturer's Warranty: Written warranty, signed by waterproofing manufacturer agreeing to repair or replace waterproofing material that does not comply with requirements or that does not remain watertight due to failure in materials or workmanship during specified warranty period.
 - 1. Warranty Period: Five years after date of Substantial Completion.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. In other Part 2 articles where subparagraph titles below introduce lists, the following requirements apply for product selection:
 - 1. Products: Subject to compliance with requirements, provide one of the products specified.
 - 2. Manufacturers: Subject to compliance with requirements, provide products by the manufacturers specified.

2.02 RUBBERIZED-ASPHALT SHEET WATERPROOFING

- A. Rubberized-Asphalt Sheet: 60-mil- thick, self-adhering sheet consisting of 56 mils of rubberized asphalt laminated to a 4-mil- thick, polyethylene film with release liner on adhesive side.

1. Physical Properties: As follows, measured per standard test methods referenced:
 - a. Tensile Strength: 250 psi minimum; ASTM D 412, Die C, modified.
 - b. Ultimate Elongation: 300 percent minimum; ASTM D 412, Die C, modified.
 - c. Brittleness Temperature: Pass at minus 25 deg F; ASTM D 746.
 - d. Hydrostatic-Head Resistance: 150 feet minimum; ASTM D 5385.
 - e. Water Absorption: 0.15 percent weight-gain maximum after 48-hour immersion at 70 deg F; ASTM D 570.
 - f. Vapor Permeance: 0.05 perms ; ASTM E 96, Water Method.
2. Products:
 - a. W. R. Grace & Co.; Bituthene.
 - b. Carlisle; CCW-7011.
 - c. T. C. Miradri; Miradri.

2.03 AUXILIARY MATERIALS

- A. General: Furnish auxiliary materials recommended by waterproofing manufacturer for intended use and compatible with sheet waterproofing.
 1. Furnish liquid-type auxiliary materials that comply with VOC limits of authorities having jurisdiction.
- B. Primer: Provide type of primer recommended for substrate by manufacturer of sheet waterproofing material.
- C. Sheet Flashing Strips: Self-adhering, rubberized-asphalt composite sheet strips of same material and thickness as sheet waterproofing.
- D. Protection Board: Extruded polystyrene (EPS), complying with ASTM C 578, Type IV, 1.6-lb/cu. ft. minimum density; 25-psi minimum compressive strength per ASTM D 1621 :
 1. Thickness: 2 inches.
 2. Product:
 - a. Styrofoam; Dow Chemical Company.
 - b. Foamular 250; Owens Corning.
 - c. Amofoam; Tenneco Building Products.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements and other conditions that will adversely affect execution, durability or quality of finish work, and which cannot be put into an acceptable condition through normal preparatory work.
 1. Verify that concrete has cured and aged for minimum time period recommended by waterproofing manufacturer.
 2. Verify that concrete is visibly dry and free of moisture. Test for capillary moisture by plastic sheet method according to ASTM D 4263.
 3. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 SURFACE PREPARATION

- A. Clean, prepare, and treat substrates according to manufacturer's written instructions. Provide clean, dust-free, and dry substrates for waterproofing application.
- B. Mask off adjoining surfaces not receiving waterproofing to prevent spillage and overspray affecting other construction.
- C. Remove grease, oil, bitumen, form-release agents, paints, curing compounds, scum, fungus, and other penetrating contaminants or film-forming coatings from concrete.

- D. Remove fins, ridges, mortar, and other projections. Prepare, fill, prime, and treat joints, cracks, honeycomb, aggregate pockets, holes, and other voids in substrates with non-expansive patching mortar to attain a finish comparable to adjacent concrete surfaces. Remove dust and dirt from joints, cracks, and other irregularities according to ASTM D 4258 prior to priming and filling.
- E. Bridge and cover expansion joints and cold joints with overlapping sheet strips.
 - 1. Invert and loosely lay first sheet strip over center of joint. Firmly adhere second sheet strip to first and overlap to substrate.
- F. Corners: Prepare, prime, and treat inside and outside corners according to ASTM D 6135.
- G. Prepare, treat, and seal vertical and horizontal surfaces at terminations and penetrations through waterproofing and at drains and protrusions according to ASTM D 6135.

3.03 RUBBERIZED-ASPHALT SHEET APPLICATION

- A. Install self-adhering sheets according to waterproofing manufacturer's written instructions and recommendations in ASTM D 6135.
- B. Coordinate installing waterproofing materials with associated work to provide complete system complying with combined recommendations by manufacturers and installers involved in Work. Schedule installation to minimize exposure of sheet waterproofing materials.
- C. Apply primer to substrates at required rate and allow to dry. Limit priming to areas that will be covered by sheet waterproofing in same day. Reprime areas exposed for more than 24 hours.
- D. Apply and firmly adhere sheets over area to receive waterproofing. Accurately align sheets and maintain uniform 2-1/2-inch- minimum lap widths and end laps. Overlap and seal seams and stagger end laps to ensure watertight installation.
 - 1. When ambient and substrate temperatures range between 25 and 40 deg F, install self-adhering, rubberized-asphalt sheets produced for low-temperature application. Do not use low-temperature sheets if ambient or substrate temperature is higher than 60 deg F.
- E. Apply continuous sheets over sheet strips bridging substrate cracks, construction, and contraction joints.
- F. Top Edge Seal: Seal top edge to provide permanent resistance to water penetration. Caulk exposed edges with mastic or sealant.
- G. Seal projections through membrane and seal seams. Bond to vertical surfaces and also, where shown or recommended by manufacturer, bond to horizontal surfaces.
- H. Expansion Joints: Install joint filler with protruding rounded surface, as recommended by manufacturer.
 - 1. Apply continuous 8-inch-wide strip of membrane on joint, followed by membrane application.
- I. Coat exposed areas of sheet and flashing materials. Comply with sheet manufacturer's recommendations for applying and curing the coating.
- J. Install sheet waterproofing and auxiliary materials to tie into air/vapor barrier provided in Division 7 Section "Fluid-Applied Air/Vapor Barrier System."
- K. Repair tears, voids, and lapped seams in waterproofing not complying with requirements. Slit and flatten fishmouths and blisters. Patch with sheets extending 6 inches beyond repaired areas in all directions.
- L. Correct deficiencies in or remove sheet waterproofing that does not comply with requirements, repair substrates, reapply waterproofing, and repair sheet flashings.
- M. Protection Board: Prior to starting subsequent construction operations, install protection course with butted joints over waterproofing membrane complying with recommendations of both sheet waterproofing and protection board manufacturers.

3.04 PROTECTION AND CLEANING

- A. Cleaning: After completion, remove all masking materials used in waterproofing installation. Clean spillage and soiling from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.
- B. Protect waterproofing from damage and wear during remainder of construction period. Do not allow traffic of any type on unprotected membrane.

END OF SECTION