

**SECTION 07 13 52
MODIFIED BITUMINOUS SHEET WATERPROOFING**

PART 1 - GENERAL

1.1 DESCRIPTION:

This section specifies modified bituminous sheet material used for exterior below grade waterproofing.

1.2 MANUFACTURER'S QUALIFICATIONS:

- A. Approval by Contracting Officer is required of products and services of proposed manufacturers, and installers, and will be based upon submission by Contractor that:
1. Manufacturer regularly and presently manufactures bituminous sheet waterproofing as one of its principal products.
 2. Installer has technical qualifications, experience, trained personnel and facilities to install specified items.
 3. Manufacturer's product submitted has been in satisfactory and efficient operation on three similar installations for at least three years.
 4. Submit list of installations, include name and location of project and name of owner.

1.3 SUBMITTALS:

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Manufacturer's Literature and Data:
1. Bituminous sheet.
 2. Primer.
 3. Surface patching compound.
 4. Mastic.
 5. Protection material, temporary and permanent.
 6. Printed installation instructions for conditions specified.
- C. Certificates:
1. Indicating bituminous sheet manufacturer's approval of primer, and all other system components and accessories.
 2. Indicating bituminous sheet waterproofing manufacturer's qualifications as specified.
 3. Approval of installer by bituminous sheet manufacturers.
 4. Water test report.

1.4 PRODUCT DELIVERY, STORAGE AND HANDLING:

- A. Deliver materials to job in manufacturer's original unopened container.
- B. Do not store material in areas where temperature is lower than 10 degrees C (50 degrees F,) or where prolonged temperature is above 32 degrees C (90 degrees F).

1.5 ENVIRONMENTAL REQUIREMENTS:

Ambient Surface and Material Temperature: Not less than 4 degrees C (40 degrees F), during application of waterproofing.

1.6 WARRANTY:

Warrant bituminous sheet waterproofing installation against moisture leaks and subject to terms of "Warranty of Construction", FAR clause 52.246-21, except that warranty period is two years.

1.7 APPLICABLE PUBLICATIONS:

- A. Publications listed below form a part of this specification to the extent referenced. Publications are referenced by basic designation only.
- B. Federal Specifications (Fed. Spec.):
UU-B-790A.....Building Paper, Vegetable Fiber: (Kraft, Water-INT AMD 1 Proof, Water Repellent and Fire Resistant)
- C. American Society for Testing and Materials (ASTM):
C578-07.....Rigid Cellular Polystyrene Thermal Insulation
D41-05.....Asphalt Primer Used in Roofing, Dampproofing and Waterproofing
D2822-05.....Asphalt Roof Cement
D6380-03.....Asphalt Roll Roofing (Organic Felt)
- D. American Hardboard Association (AHA):
A135.4-1995.....Basic Hardboard

PART 2 - PRODUCTS**2.1 BITUMINOUS SHEET:**

- A. Cold applied waterproofing membrane composed primarily of modified bituminous material prefabricated in sheet form designed for below grade exterior waterproofing. Sheet reinforced with fibers at manufacturer's option.
- B. Thickness of Bituminous Sheet: 1.5 mm (60 mils), plus or minus 0.13 mm (5 mils), and bonded to a 0.1 mm (4 mil) thick plastic sheet.
- C. Provide with a release sheet to prevent bonding of bituminous sheet to itself.

2.2 PRIMER:

- A. Furnished by manufacturer of bituminous sheet as required for particular application in accordance with sheet manufacturer's instructions.
- B. Primer: ASTM D41.
- C. Roof Cement: ASTM D4586.

2.3 PROTECTION MATERIAL:

- A. Polystyrene: ASTM C578, Type I or VIII, 10 mm (3/8-inch) nominal thickness, with 15,000 psf compressive strength and geotextiles fabric filter facing on one side.
- B. Adhesive: solvent based aerosol spray, low odor designed for and recommended by drainage/protection board manufacturer for adhering drainage / protection board to waterproofing membrane.
- C. Waterproofed Building Paper: Fed. Spec. UU-B-790.
- D. Roll Roofing: ASTM D6380, Class S (smooth), Type III with minimum net mass per unit area of roofing, 2495 g/m² (51 lb/100 ft²).

2.4 PATCHING COMPOUND:

- A. A factory prepared, non-shrinking, fast setting, cementitious adhesive compound containing no ferrous metal or oxide.
- B. Waterproofing manufacturer supplied low-viscosity asphalt-modified coating.

2.5 MISCELLANEOUS MATERILAS:

- A. Metal Termination Bars: Manufacturer's standard aluminum bars, approximately 25 mm (1 inch) wide, pre-punched, with zinc- alloy-body fasteners and stainless-steel pins.

PART 3 - EXECUTION**3.1 PREPARATION:**

- A. Surface Condition:
 - 1. Before applying waterproofing materials, ensure concrete and masonry surfaces are fully cured, smooth, clean, dry, and free from high spots, depressions, loose and foreign particles and other deterrents to adhesion.
 - 2. Fill voids, joints, and cracks with patching compound.
- B. Concrete surfaces cured a minimum of seven days, free from release agents, concrete curing agents, and other contaminates.

3.2 APPLICATION:

- A. Priming:
 - 1. Prime concrete and masonry surfaces.

2. Application method, amount of primer and condition or primer before installation of bituminous sheet as recommended by primer manufacturer.
3. Reprime when required in accordance with manufacturer's instructions.

B. Bituminous Sheet Installation:

1. Remove release sheet prior to application.
2. Lay bituminous sheet from low point to high point so that laps shed water.
3. Treat expansion, construction and control joints and evident working cracks as expansion joints. Apply bituminous sheet in double thickness over joint by first applying a strip of bituminous sheet not less than 200 mm (8 inches) wide, centered over joint.
4. Lap seams not less than 50 mm (2 inches).
5. Lay succeeding sheet with laps, and roll or press into place.
6. Repair misaligned or inadequately lapped seams in accordance with manufacturer's instructions.
7. Seal seams and terminations in accordance with sheet manufacturer's instructions.

C. Corner Treatment:

1. At inside and outside corners apply double cover using an initial strip not less than 280 mm (11 inches) wide, centered along axis of corner.
2. Cover each strip completely by the regular application of bituminous sheet.
3. Provide a fillet or cant on inside corners.
4. Form cants using patching compound
5. Do not use wood, fiber, and insulating materials for cants.

D. Projection Treatment:

1. Apply a double layer of bituminous sheet around pipes and similar projections at least 150 mm (6 inches) wide.

3.3 PROTECTION:

- A. Protect bituminous sheet before backfill or wearing courses are placed.
- B. Install protection material and hold in place in accordance with instructions of manufacturer of waterproofing materials.
- C. Permanent Protection:
 1. Vertical Surfaces:
 - a. Install polystyrene protection material.

b. Extend protection full height from footing to top of backfill.

D. Temporary Protection:

When waterproofing materials are subjected to damage by sunlight and can not be immediately protected as specified, protect waterproofing materials by waterproof building paper or suitable coating approved by manufacturer of waterproofing system used.

3.4 PATCHING:

A. Repair tears, punctures, air blisters, and inadequately lapped seams, in accordance with manufacturer's instructions before protection course is applied.

3.5 INSPECTION:

Do not cover waterproofed surfaces by other materials or backfill until work is approved by COR.

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