

SECTION 07152

LEAD MEMBRANE WATERPROOFING

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Fountain and reflecting pool waterproofing.
- B. Plaza deck waterproofing.
- C. Planter waterproofing.
- D. Below-grade waterproofing.
- E. Kitchen floor waterproofing.
- F. Shower stall waterproofing.
- G. \_\_\_\_\_.
- H. Penetration flashings and perimeter flashings for lead waterproofing.

1.2 RELATED SECTIONS

- A. Section 02740 - Flexible Pavement.
- B. Section 02750 - Rigid Pavement.
- C. Section 02780 - Unit Pavers.
- D. Section 03300 - Cast-In-Place Concrete.
- E. Section 07600 - Flashing and Sheet Metal.
- F. Section 07615 - Protected Lead Membrane Roofing.

1.3 REFERENCES

- A. ASTM B 32 - Standard Specification for Solder Metal.
- B. ASTM B 749 - Standard Specification for Lead and Lead Alloy Strip, Sheet, and Plate Products.
- C. ASTM D 226 - Standard Specification for Asphalt Saturated Organic Felt Used in Roofing and Waterproofing.

- D. ASTM D 4479 - Standard Specification for Asphalt Roof Coatings -- Asbestos Free.
- E. FS TT-C-494B - Coating Compound, Bituminous, Solvent Type, Acid Resistant.
- F. MIL-C-18480 - Coating Compounds, Bituminous, Solvent, Coal-Tar Base.

#### 1.4 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data: Provide manufacturer's standard details and catalog data demonstrating compliance with referenced standards. Provide installation instructions.
- C. Samples: 6 x 6 inch samples of sheet lead.

#### 1.5 QUALITY ASSURANCE

- A. Installer Qualifications: Employ only qualified journeymen lead burners to join sheets of lead.

#### 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Handle, store, and protect lead from deformation, construction traffic, and damage.

### PART 2 PRODUCTS

#### 2.1 MATERIALS

- A. Sheet Lead:
  - 1. Comply with ASTM B 749.
  - 2. Weight: 6 psf (3/32-inch thick).
  - 3. Weight: 8 psf (1/8-inch thick).
  - 4. Furnish in 8 x 25 foot rolls, unless otherwise required or approved.
- B. Burning Rods: Same composition as sheet lead.
- C. Solder: ASTM B 32, 50/50 or 40/60 tin-lead.
- D. Underlayment: 30 lb. asphalt-impregnated felt, ASTM D 226, Type II.

- E. Slip Sheet: Reinforced plastic or paper such as "Tyvek", "Visquine" etc.
- F. Barrier Coating: Black asphaltum, FS TT-C-494, Type II; MIL-C-18480; or ASTM D 4479, Type II.
- G. Temporary Protection Board: At least one, 1/2-inch thick layer of suitable protective particle board or plywood.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Examine surfaces to receive sheet lead waterproofing.
  - 1. Verify that surfaces are smooth and even, free of projections, protrusions, or other irregularities.
  - 2. Verify that angles and edges over which lead will be turned are chamfered or eased.
  - 3. Do not begin waterproofing operations until surrounding or abutting construction and penetrations through waterproofing are completed and approved.
  - 4. Verify that concrete is sound, clean, and free of dirt, dust, debris, or other contaminants.
  - 5. Verify that concrete surfaces have been screeded and floated to a smooth surface without projecting stones or other aggregate.
  - 6. Verify that brick or other masonry substrates are laid true and straight, with joints struck flush or tooled with half-round tool.
- B. Notify the Architect in writing of any defective conditions encountered.
- C. Correct defective conditions before beginning waterproofing work. Starting of work shall constitute acceptance of such conditions.

### 3.2 SURFACE PREPARATION

- A. Grind down high spots.
- B. Fill low spots with Portland-cement-based patching compound approved by the Architect.
- C. Parge irregular substrates with acrylic-latex modified Portland-cement-based mortar approved by the Architect.

- D. Install 1 layer of underlayment over entire surface to be waterproofed. Install 1 layer of slip sheet over underlayment.
- E. Coat lower surface of lead to be in contact with new concrete slabs or other masonry surfaces with a barrier coating comprised of a continuous, heavy brush coat of black asphaltum.

### 3.3 INSTALLATION

- A. Lay out sheet to minimize joints.
- B. Lap joints between adjoining sheets 1-1/2 inches.
- C. Tools, forms, tongs, etc., shall be such as to bend and work lead to easy curves and to prevent scoring or damaging the material. Only proper lead working tools (wooden mallets, dressers, etc.) are acceptable to form the lead.
- D. Allow room for expansion between rigid members.

### 3.4 BURNED JOINTS

- A. Clean by shave hook, lead scraper, or wire brush, sections of lead that are to become a part of the joint.
- B. Join adjacent pieces of lead sheet by burning (welding of lead to lead).
  - 1. Use only the smallest size tip on burning torch.
  - 2. Use only hydrogen and oxygen gases.
  - 3. Take extreme care to avoid burning through or reducing the thickness of the lead sheet being joined.

### 3.5 SOLDERED JOINTS

- A. Clean by shave hook, lead scraper, or wire brush, sections of lead that are to become a part of the joint, including the underside of the overlapping sheet and the area of the bottom sheet directly under the lap and at least 1/4 inch beyond the edge of the lap.
  - 1. Immediately after cleaning, rub a very thin coat of plumber's candle over shaved or brushed surfaces to prevent oxidation.
  - 2. Sprinkle powdered rosin over shaved areas.

- B. After solder-tacking sheets together at suitable intervals, feed solder to joints using a clean, well tinned soldering iron at the proper temperature. Fully solder the joint surfaces including the underside of the overlapping sheet and the area of the bottom sheet directly under the lap.

### 3.6 PROTECTION

- A. Cementitious Toppings: Where upper surface of lead sheet will be exposed to cementitious toppings or setting beds, apply a continuous, heavy brush coat of black asphaltum to entire surface of lead sheet.
- B. Protect material and work in place from damage. Repair any damage that may occur.
- C. Provide temporary water cut-offs to prevent penetration of water underneath the membrane when work is interrupted, at end of day, or during inclement weather. Remove and discard temporary cut-offs before proceeding.
- D. Temporary Protection: Do not permit construction traffic directly on top of lead sheet. Install suitable protection board as installation proceeds to guard against occasional, essential light traffic and against excessive temperature changes until permanent covering has been installed.

END OF SECTION