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Alliance OH 44601
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Bituminous Setting System for Unit Pavers

Bituminous setting bed

- A. Asphalt Cement: Conform to ASTM Designation D 3381; viscosity grade AC 20 or AR-8000. Other acceptable binders meet ASTM D 6373, PG (performance grade) 62-22
- B. Fine Aggregate: Clean, hard sand with durable particles and free from adherent coating, lumps of clay, alkali salts, and organic matter; uniformly graded from “coarse” to “fine” and all passing the No. 4 sieve and meet the gradation requirements when tested in accordance with the standard method of test for sieve or screen analysis of fine and coarse aggregates ASTM Designation C0136-81.
- C. Dried fine aggregate shall be combined with hot asphalt cement, and heated to approximately 300 degrees F at an asphalt plant. The approximate proportion of materials shall be seven-(7) percent asphalt cement, and ninety-three (93) percent fine aggregate. Each ton shall be apportioned by weight in the approximate ratio of 145-lbs. Asphalt to 1,855-lbs. sand.
- D. The Contractor shall determine the exact proportions to produce the best possible mixture for construction of the bituminous setting bed to meet construction requirements.

Neoprene-Modified Asphalt Adhesive

- A. Mastic (asphalt adhesive):
 1. Solids (base): 75+/- 1%
 2. Lbs. /Gal.: 8-8.5 lbs.
 3. Solvent: Varsol (over 100 degrees F asphalt)
- B. Base (2% Neoprene, 10% Fibers, 88% asphalt):
 1. Melting point-ASTM D-36; 200 degrees F minimum.
 2. Penetration-77 degrees F, 100 gram load, 5 second (1mm): 23-27
 3. Ductility-ASTM D-133-44 @ 25 degrees C; 5 cm/minute 125 cm/minute

Placing Bituminous Setting Bed

- A. To install the setting bed over the base surface, place 3/4” deep control bars directly over the base. If the grade must be adjusted, set wood chocks under the control bars to proper grade. Set two bars parallel to each other, approximately eleven (11) feet apart to serve as guides to bring pavers, when laid, to proper grade. Place some bituminous material to produce smooth, firm and even setting bed. As soon as this initial panel is completed, advance the first bar to the next position, in readiness for striking the next panel. Carefully fill any depressions that remain after removing the depth control bars and wood chocks.

- B. The setting bed shall be rolled with a 600lb., walk-behind, power roller to a nominal depth of 3/4” while still hot. The thickness shall be adjusted so that when the pavers are placed, the top surface of the pavers will be at the required grade.
- C. After the setting bed has cooled, a coating of two (2) % neoprene-modified asphalt adhesive shall be applied by mopping or squeegee or troweling over the top surface of the setting bed. If it is troweled, the trowel shall have serrations not exceeding one-sixteenth (1/16) inch.

Installation of Pavers

- A. After the modified asphalt adhesive is applied, carefully place the pavers by hand in straight courses with uniform top surface. Good alignment must be kept and the pattern shall be shown on the plans. String lines should be utilized to maintain alignment with the specified pattern.
- B. Bituminous set pavers can and should be rolled or compacted to achieve full bond with the setting bed, reduce lippage and improve the overall flatness of the surface. See Brick Industry Association Technical Note 14B (pg. 11) and Flexible Vehicular Brick Paving Guide (pg. 36). Protect pavers by using a rubber roller or a 4-5000 LBF plate tamper with a protective mat attached. Plywood may also be utilized and is preferred to sand which may damage the surface of the pavers.



Joint Treatment

- A. Joints shall be between 1/16” and 3/16” for brick pavers, and filled completely with sand meeting ASTM C-33 (Concrete Sand). Sand shall be swept into joints and rolled or compacted to assure full joints. If not full after compaction, additional sand shall be swept in and again compacted.
- B. Pavers shall be protected from metal rollers or plates during compaction to prevent damage.