

## Section 29 Treated Permeable Bases

### 4-2901 General

Treated permeable base, used under portland cement concrete pavement and under asphalt concrete pavement, provides a highly permeable drainage layer within the structural section. It also provides part of the strength of the base layer.

The special provisions specify the type of treatment, either asphalt or cement. Many of the requirements for producing and placing treated permeable bases are also those specified for asphalt concrete, portland cement concrete, and portland cement concrete pavement.

### 4-2902 Before Work Begins

During this preliminary inspection, take the following steps:

- Review the contract plans and specifications to determine the requirements for the treated permeable base.
- Obtain samples of aggregates to test for contract compliance. If the same source is used to produce aggregate for other Caltrans work, decide whether current test reports represent the material to be used. If so, initial sampling and testing can be waived.
- Examine the contractor's plant and storage areas to determine contract compliance. Section 4-39 "Asphalt Concrete" and Section 4-90 "Portland Cement Concrete," of the *Construction Manual* (manual) provide guidelines.
- Review compaction tests of the subgrade that is to receive treated permeable base. Determine if the material underlying the grading plane meets compaction requirements. Also ensure that the grading plane is firm and stable. Pay special attention in isolated areas where pumping occurs. Determine that the subgrade is free of loose or extraneous material and that the subgrade is not higher than the grade established by the engineer, plus tolerance. Spot-check areas both between stations where stakes are set as well as at staked locations.
- Verify that filter fabric meets specifications.
- Review planned locations of cross-drain interceptors. (Refer to Sheet D99D of the *Standard Plans*.) Ensure the interceptors are properly located to prevent impounding water under the pavement. Inspect the placement of filter fabric. See Section 4-68, "Subsurface Drains," of this manual for information about underdrains.
- Examine spreading and compacting equipment to determine contract compliance.
- Determine that the atmospheric temperature meets the specified minimum before spreading begins.
- Determine that the subgrade is uniformly moist before spreading cement treated permeable material (CTPB).

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### 4-2901 General

### 4-2902 Before Work Begins

**4-2903** **4-2903 During the Course of Work**  
**During the Course of Work**

During the work, follow the inspection steps listed within each of the four areas below:

4-2903A Asphalt-Treated Permeable Base

- Determine which compaction method the contractor plans to use.
- Check the temperature of the asphalt-treated permeable base (ATPB) to ensure that compaction is performed within the specified temperature range.
- Take samples of the completed mix from trucks at the plant or from the mat behind the paver.
- Verify that filter fabric is placed on the high side of the ATPB blanket in accordance with the plans and specifications.
- During placement of the ATPB over edge drains, verify that the temperature of the material falls within the limits specified in Section 68-3.03, “Installation,” of the *Standard Specifications*, which covers the installation of subsurface drains. Staying below the maximum limit is critical to prevent damage to the edge drains.

4-2903B Cement-Treated Permeable Base

- Verify that the contractor meets the time and temperature requirements for mixing and transporting.
- Reject any segregated or nonuniformly mixed CTPB.
- Observe rolling to determine that compaction meets specifications.
- Determine that the base is cured as specified.
- Verify that filter fabric is placed on the high side of the CTPB blanket in accordance with the plans and specifications.
- During placement, ensure the cement does not plug the openings in the edge drains.

4-2903C Protection

Contamination, filling voids with foreign material, will destroy the bases’ function. The engineer should be alert to this problem and require the contractor to take steps to ensure the base remains free of any foreign material.

Do not allow any equipment on the completed mat except what is permitted in Section 7-1.02, “Load Limitations,” of the *Standard Specifications*.

4-2903D Surface Tolerance

For the finished surface of treated bases, the specifications provide for tolerances above and below the grade established by the engineer. Check the finished surface as described for subgrade under “Before Work Begins” in this section. Record the results, and require the specified corrections for low or high areas. You may have to decide whether to order removal and replacement of or to permit low-treated permeable base to remain in place. Formulas using infiltration rates found in Topic 606 of the *Highway Design Manual* may be used to determine the adequate thickness of treated permeable base layers. If low-treated permeable base is left in place, ensure the contractor compensates for the deficiency in the thickness of the overlying pavement.

#### **4-2904 Measurement and Payment**

Calculate the quantities for treated permeable bases from the dimensions shown on the plans adjusted by the amount of any changes. The volume of treated permeable base placed for edge drains and cross-drain interceptors is included in the payment for edge drains.

#### **4-2904 Measurement and Payment**