

## Generalized Perpetual Pavement Design Construction Considerations

Layer	Considerations
(A)	<b>Renewable surface.</b> The renewable surface lift will need periodic (8-14 years) replacement. The SMA surface must have very low permeability. PFC's are highly recommended in locations where overall traffic volume is high and average rainfall is at least 25-inches per year. In this case the PFC will be placed on top of the SMA layer.
(B)	<b>Seal Coat.</b> The application of a seal coat is strongly recommended for projects that are subject to prolonged exposure to traffic and environmental conditions prior to placement of the SMA mat.
(C)	<b>Rut-resistant layers.</b> The rut resistant layer is placed in multiple lifts. All HMA mix that is within 6" of the surface must use a minimum PG 70-22 binder. The lower lifts may use PG-64-22 binder. Adjusting or lowering the number of gyrations for these mixes should be considered to improve the workability and impermeability aspects of these mixes. Full bond between layers must be promoted through the proper application of tack coats.
(D)	<b>Rich Bottom Layer.</b> The Primary purpose of the RBL layer is to establish a fatigue resistant bottom to the overlying HMA composite mass. The functionality of this layer becomes more critical with structures that are composed of less than 12.0" total HMA depth. Full bond between the RBL and overlying rut-resistant layers must be promoted through the proper application of tack coat. This layer should be highly resistant to intrusion of moisture rising within the substructure. This layer must comply with the RBL requirements under Item 344.
(E)	<b>Prepared Foundation.</b> This stage of construction is crucial to providing a stable foundation. Laboratory tests must be performed to evaluate the moisture susceptibility of the material and selecting the appropriate stabilizer if needed. Possible alternatives for the prepared foundation include: <ul style="list-style-type: none"> <li>1. Grade 1 Type A Flexible Base.</li> <li>2. Cement treated base (max. 3% cement)</li> <li>3. Lime stabilized subgrade (8.0" minimum), passing Tex-121-E, Part I, with 50psi retained strength after 10 days capillary rise (min. 6% lime).</li> </ul>
(F)	<b>Natural subgrade.</b> A geotechnical investigation must be performed to determine the composition of the natural subgrade and to check for the presence of organics and sulfates. The suitability, type, and depth of stabilization must be established. For pavement foundation use options 1 or 2 above, in cases where existing subgrade can not provide sufficient and uniform support, and stabilize to a minimum 6.0" depth. Overall prepared foundation and pavement structure should limit potential vertical rise to no more than 1.5-inch.