



Laboratory Test Protocol

Zycosoil

Mixing Protocol

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1 Quality Check before you Begin

- 1.1 Always start testing programs with Zycosoil samples from fresh bottles. Older samples, particularly those from previously opened bottles, may have been exposed to moisture.
- 1.2 Turbidity or higher viscosity of the sample indicates exposure to atmospheric moisture. To ensure sample health, dilute 1 ml of Zycosoil with 10 ml of potable or de-ionized water. Solutions of usable samples would remain clear or translucent without turbidity.
- 1.3 A whitish or turbid solution necessitates taking a fresh sample from an unopened bottle.
- 1.4 Store Zycosoil between 4 and 40°C (40 and 104°F). If the product freezes, place it at room temperature to thaw. For further queries, contact a Zydex representative.



2 Zycosoil Benefits: Importance of Mixing

- 2.1 Zycosoil has a positive effect on mixing , workability and compaction of hot mix asphalt (HMA). Its superior aggregate wetting and coating properties, ensure uniform binder film thickness and better lubrication of the hot mix. This leads to improved compaction under the same load or compactive effort both in the laboratory and the field.
- 2.2 Addition of Zycosoil to the mix results in lower VMA and air voids , indicating a need to lower the optimum binder content. Thus, when using Zycosoil-mixed binder it is recommended to re-determine the optimum binder content for the given gradation of the mix.
- 2.3 Also, the dosage of Zycosoil is significantly lower compared with other conventional liquid anti-strip additives.
- 2.4 Proper mixing and stirring of Zycosoil in asphalt binder is critical in order to realize these benefits.

3 Dosage of Zycosoil

Dosage of Zycosoil can vary between 0.05 and 0.15 % by weight of the asphalt binder used. The specific gravity of Zycosoil is 1.05. In case an accurate weighing balance is unavailable, usage of 1 ml instead of 1 gram of Zycosoil should be acceptable.

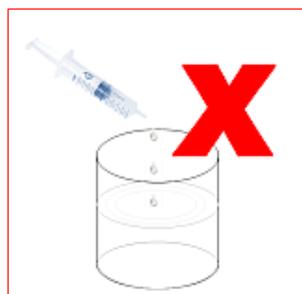
4 Apparatus

- 4.1 A dry and disposable 1 or 5 ml syringe to add drops of Zycosoil in molten asphalt
- 4.2 A mechanical stirrer capable of producing a 20 to 30 mm deep vortex in molten asphalt

5 Mixing Procedure

- 5.1 Set the stirrer speed high enough to create a 20 to 30 mm deep vortex before mixing Zycosoil in molten asphalt binder at 150°C (302 °F).
- 5.2 Add Zycosoil to the center of the vortex at 10 drops per minute while maintaining the stirrer speed. *(Assuming a dosage of 0.1 % by weight of asphalt, adding 1 ml or 1g of Zycosoil should take approximately 2 minutes for 1000 g of binder)*
- 5.3 Continue stirring the Zycosoil-mixed asphalt for 5 minutes to complete the mixing process.

Caution: Never add Zycosoil in a static container of molten asphalt binder. Doing so impedes Zycosoil's performance. In case of unusual globule formation or unevenness of asphalt binder, please contact a Zydex representative.



For queries please write to us at info@zydexindustries.com or to Zydex, Inc., 106, Kitty Hawk Drive, Morrisville, NC – 27560, USA