SOYSOLV® BIOSOLVENTS

EZ TACK
Bond Strength Testing Results

EZ Tack™ was evaluated for bond strength in asphalt pavement repairs. Independent lab testing showed strong bond performance in both unconditioned and freeze-thaw conditioned lab tests.

IMPORTANCE OF BONDING STRENGTH IN PAVEMENT REPAIRS

Bond strength plays a critical role in pavement repair performance. When new asphalt does not properly adhere to the existing surface, it can lead to slippage, delamination, and premature failure. A strong bond helps the repaired section perform more like a single, unified structure.

TESTING PROCESS

ATS followed the Interlayer Shear Strength (ISS) test method, as defined by AASHTO TP 114, to evaluate EZ Tack™. This procedure measures the force required to shear apart two asphalt layers and is commonly used to verify bond performance. The process included:

- Sample Prep: Old pavement was simulated using 100% RAP bases that were scuffed to mimic aged asphalt.
- EZ Tack Application: EZ Tack™ was applied at 0.035 gal/sy.
- Overlay: Hot mix asphalt was placed and compacted on top.
- Conditioning: samples were saturated with water and subjected to freeze–thaw cycles (AASHTO T 283).
- Testing: All samples were run through the ISS test (AASHTO TP 114) to measure bond strength in pounds (lbf) and psi.

RESULTS

EZ Tack™ maintained high bond strength in both unconditioned and freeze–thaw conditioned states. With interlayer shear strength values of 191 psi and 120 psi, the results showed that EZ Tack achieved bond strength values above the commonly cited 100 psi threshold used in tack bond testing.

Properties	Dry Adhesion	Freeze/Thaw
Ultimate Load, lbf.	5,219 lbs	3,276 lbs
Interlayer Shear Strength, ISS, psi	191 psi	120 psi

*Results are compared against the >100 psi benchmark often used for tack bond testing. EZ Tack™ is not an asphalt tack coat or emulsion.

Lab observations also suggested that most tested specimens failed within the asphalt mixture rather than cleanly at the treated interface.

INTERFACE FAILTURE

- Failure occurs along the interface between the two layers
- Can indicate a weaker bond between the new and existing pavement

FAILURE THROUGH MIX

- Failure occurs primarily within the new HMA mixture rather than cleanly at the interface
- Suggests strong bond integrity at the treated repair line