Transportation Planning and Programming Division
Technical Services

Specification 149312

Scope: This specification describes the minimum properties for an acrylic polymer adhesive grouting mixture that provides sufficient flexibility and ductility in a wide range of temperatures, performs well under fatigue, and exhibits durability in a highway environment to be used to seal cracks and bond to metals, asphalt, concrete and Portland cement for the purpose of bonding piezoelectric sensors into saw cuts in roadway surfaces.

1. Chemical Name: Acrylate Polymer dissolved in Methacylate Monomer, i.e. Methyl Methacrylate and 2-Ethylhexyl Acrylate.

2. Viscosity: The viscosity a 25 degrees C, (77 degrees F), shall be in the range 20 to 40 Pa-s; per ASTM D 2393.

3. Gel Time: Five to Twenty minutes at 25 degrees C, (77 degrees F).

4. Vicat Set Time: Equal to or less than 30 minutes.

5. Compressive Strength: Equal to or greater than 1,000 psi.

6. Cured Hardness: 45 to 50 Shd after one (1) hour.

7. Bond Flexural Strength: Equal to or greater than 100 psi to asphalt and equal to or greater than 300 psi to concrete.

8. Complex Shear Modulus: 2,000 – 10,000 psi at 25 degrees C.

9. Density: The monomer shall have a minimum density of l.8 grams per cubic centimeter.

10. Shrinkage: 1.0 % to 0.5%.

11. Packaging: The liquid material shall come in a metal paint-type can containing 5 kg to 6 kg. of material per can with a minimum of two (2) inches of airspace in the top of the can to facilitate constituent mixing. The catalyst ingredient shall come in a sealed container with a sufficient quantity to prepare one can of bonding material for use.

12. Examples: ECM P5GCH5OL
Degussa Degradur VP 4605
IRD AS475