QPL 42 SPRAY APPLIED LINER MATERIAL

SECTION A: GEOPOLYMER AND CEMENTOUS MATERIAL

PROCEDURES

GENERAL

This evaluation procedure outlines the Department's approval process for structural spray applied liners used for culvert rehabilitation. The geopolymer and Cementous material will be sprayed by centrifugal casting.

SPECIFICATIONS

ASTM C 78
ASTM C 109
ASTM 496
ASTM 469
ASTM C 1583
ASTM C 666
AASHTO –T- 358

PROCEDURES

A completed Product Evaluation Form, MSDS sheets, if applicable, product data information and a sample of the product being tested must be submitted to the Division of Materials and Test. The Department bases product approval on a review of NTPEP data and a 1-year field evaluation if deemed necessary.

REQUIREMENTS

Minimum Thickness: 1 inch

Minimum Pipe Size: 36 inch

PROPERTIES

PROPERTY	TEST METHOD	DURATION	REQUIREMENT
Flexural Strength	ASTM C 78	1 day 28 day	1200 psi 1300 psi
Compressive Strength	ASTM C 109	1 day 28 day	2500 psi 8000 psi
Tensile Strength	ASTM C 496	28 day	750 psi
Modulus of Elasticity	ASTM C 469	1 day 28 day	3,000,000 psi 4,000,000 psi
Freeze Thaw	ASTM C 666	300 cycles	No damage

SECTION B: RESIN BASED MATERIAL

PROCEDURES

GENERAL

This evaluation procedure outlines the Department's approval process for structural spray applied liners used for culvert rehabilitation

SPECIFICATIONS

ASTM D 790
ASTM D 638
ASTM D 695

PROCEDURES

A completed Product Evaluation Form, MSDS sheets, if applicable, product data information and a sample of the product being tested must be submitted to the Division of Materials and Test. The Department bases product approval on a review of NTPEP data and a 1-year field evaluation if deemed necessary.

Minimum Thickness: 0.5 inch

Minimum Pipe Size: 48 inch

PROPERTIES

PROPERTY	TEST METHOD	REQUIREMENT
Flexural Modulus	ASTM D 790	250,000 psi
Tensile Strength Percent Elongation	ASTM D 638	6000 psi 15% Max