IPR INDUSTRIAL



A Cost-Effective, Precision Applied, Centrifugally Cast, Structural Lining System

ECOCAST™ *with Milliken Geopolymers*

IPR Industrial's EcoCast™ is the industry's first "Green" geopolymer liner which is especially well-suited for very large diameter storm pipes, manholes and irregular shaped infrastructure. It is also sustainable.

To ensure precise, structural application, IPR Industrial developed a proprietary system that combines the most advanced application equipment with a custom formulated geopolymer, specifically designed for consistent application and long-term performance.

Typical Industrial Applications

EcoCast can successfully restore concrete, brick, or corrugated metal industrial sewer pipes. It is particularly effective for large diameter pipe sections starting at 36".

- Industrial sewers
- Drainage culverts
- Manholes & wet wells

Performance Attributes

- EcoCast liners form an inorganic polymer network for higher resistance to acids and greater surface durability
- Cures quickly providing shortened by-pass time and allows your systems to be re-established much quicker
- EcoCast is exceptionally resistant to environmental factors like heat and cold and allows for extended application environments through batch temperature controls
- EcoCast is a high strength fiber reinforced geopolymer specially designed for ease of use with mechanical pumping, spraying and application methods

Installation Advantages

- Completely trenchless application
- High mobility and exceptional portability
- Short sectional repairs can be made cost-effectively
- Can be applied to circular and non circular structure with the same results

Technical Envelope

Test Method	Duration	GeoSpray	Conventional Repair Mortar
Compressive Strength ASTM C-39/C-109	1 Day 28 Days	Min. 2,500 psi / 17 MPa Min. 8,000 psi / 55 MPa	5,000 psi / 34 MPa
Flexural Strength ASTM C-78	7 Day 28 Days	1,100 psi / 7.6 MPa 1,500 psi / 10.3 MPa	500 psi / 3.4 MPa
Modulus of Elasticity ASTM C-469	1 Day 28 Days	3,000,000 psi / 20,700 MPa 5,800,000 psi / 40,000 MPa	3,000,000 psi / 20,700 MPa
Bond Strength to Concrete ASTM C-882	1 Day 28 Days	Min 900 psi / 6.2 MPa Min. 2,500 psi / 17 MPa	N/A
Set Time ASTM C-807 Initial Cure Time	Initial Set Final Set	60 - 75 Minutes 90 - 110 Minutes	120 Minutes 300 minutes
Freeze Thaw Durability ASTM C-666	300 Cycles	100% Zero loss	80% to 90% 10% to 20% degradation
Shrinkage ASTM C-1090	28 Days	0.00% @ 65% R. H.	0.35% to 0.50% Shrinkage
Tensile Strength ASTM C-496	28 Days	Min. 800 psi / 5.5 MPa	400 psi / 2.7 MPa
Abrasion Resistance ASTM C-1138	5 Cycles @ 28 Day Maturity	2.7% Loss	4.7% Loss
Rapid Chloride Ion Permeability ASTM C-1202	28 Days	Very Low	N/A

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