TECHNICAL DATA SHEET

ShieldPoly CV FR

ShieldCrete®

Fire Retardant Polyurea

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Product Description

ShieldPoly CV FR is 100% solids elastomeric polyurea. It is a Class 1 flame resistant coating developed for applications where high impact resistance, abrasion resistance, UV resistance and fire resistance are all key considerations. This includes power poles, conveyor belts, and blast mitigation for critical structures. It can be used on timber, fiberglass, concrete, and steel substrates as well. ShieldPoly CV FR is a volatile free, odorless system applied with 1:1 mix ratio plural component spray equipment.

ShieldPoly CV FR is designed specifically as a superior flame-resistant material that resists ignition, will self-extinguish if ignited and provides less shrinkage and higher elongation than similar systems.

As a result, ShieldPoly CV FR is an excellent polyurea for a range of applications. ShieldPoly CV FR may be applied at a minimum thickness of 1.5mm up to any desired DFT (dry film thickness) and can be used to fill gaps or damage in conveyors in a single application.

Technical/Performance Data

Technical Property	Test Method	Typical Values
VOC	Theoretical	0%
Solids Content	Theoretical	100%
Gel Time	ASTM D1640	6 - 8 seconds
Tack Free	ASTM D1640	45 seconds
Recommended max recoat window (temp dependent)	Theoretical	6 hours
Tensile Strength (MPa)	ASTM D638	10 - 11
Tensile Elongation (%)	ASTM D638	275 - 285
Tear Strength (N/mm)	ASTM D624	26 - 53
Shore (A) Hardness	ASTM D2240	70 - 95
Taber abrasion, mg wt loss (1000 g, 1000 revs, H-18)	ASTM D4060	100 - 115
Burn Testing, Class 1	ASTM E84	Passed
Reaction to fire (class)	EN 13501-1:2005	B s2 dØ

Note: The value ranges stated in this Technical Data Sheet are based on system processing under laboratory conditions. Equipment configurations and/or field application conditions may produce variances in final system values.

Limitations: ShieldPoly CV FR should not be used for direct contact with extremely high (>13) or low (<3) pH attack in high concentrations. Composite systems are available. Consult your ShieldCrete® International representative for more information.

Colours

Standard grey/black/tan. Custom colours can be produced on request but may require additional lead time and price premium. Contact your local distributor for availability.

Benefits

Abrasion Resistance
The balance of physical properties inherent in this elastomer provides outstanding abrasion resistance.

Fire Retardant
This product is excellent for resisting fire in conveyor, power pole bushfire and blast mitigation situations.

Toughness and Flexibility
The high tensile strength and elongation of this product provides protection from mechanical damage and resistance to puncture and compression.

Increased Productivity and Economy
This product maybe sprayed to thicknesses exceeding 2mm per pass and cures to become rain insensitive within minutes.

Safety
This product contains no volatile or flammable solvents. This reduces hazards during transport, storage, and application.

Easy on Equipment
The FR additives are much less abrasive on equipment than alternatives. Reducing waste and cost.

Application Areas

- ✓ Waterproofing Membranes
- ✓ Chemical Plants
- ✓ Foam Topcoats
- ✓ Roof Waterproofing
- ✓ Conveyors
- ✓ Power Poles
- ✓ Secondary Containment Liners
- ✓ Post Disaster Buildings
- ✓ Blast Mitigation
- ✓ Tank Linings

Features

- ✓ Fast reaction time
- ✓ High tensile strength
- ✓ High elongation at break
- ✓ High tear resistance
- ✓ Flexible at low temperatures
- ✓ Accepts mastic asphalt
- ✓ Permeable to water vapour diffusion
- ✓ Resistant to microbes
- ✓ Fire retardant
- ✓ Does not deteriorate over time

Typical Wet Properties

Material Property	Component A (Isocyanate)	Component B (Resin)
Density (kg/L)	1.115-1.125	1.15-1.17
Viscosity (Cps @ 21°C)	1700-1900	600-900
Mix Ratio (by volume)	1:1	
Solids (mixed) by volume	100%	
Flash Point (Pensky Martens Closed Cup)	> 93°C	
Theoretical Coverage	1L = 1mm thick over 1m^2	

Application Guidelines

Mixing

The B-Side shall be thoroughly mixed prior to and during application. ShieldPoly CV FR must be applied using 1:1 ratio plural high-pressure, heated pump, fitted with high-pressure impingement mix spray gun. The proper equipment can vary by the individual application. For more information contact ShieldCrete® International.

Coverage Rate

Theoretical coverage per litre: 1m^2 at 1mm DFT = 1 litre.

Preparation and Installation

Coating performance and adhesion are directly related to surface preparation. Many surface-coating failures can be attributed to improper surface preparation.

Coatings are partially dependent on the integrity and structure strength of the substrate. A properly prepared substrate is free of contaminants, including but not limited to dust, dirt, oil, grease, and corrosion. In certain applications, priming the substrate will be required prior to applying CV FR. The primers and surface preparation will be the same as for our other Polyurea's. For additional information, please contact a ShieldCrete® representative or consult our general specifications.

Clean Up

Cured product may be disposed of without restriction. Excess liquid 'A' & 'B' material should be mixed and allowed to cure, then disposed of in the normal manner. Product containers that are "drip free" may be disposed of according to regional OHSE requirements. Refer to SDS.

System Specification

Primer

Refer to ShieldCrete® technical representatives and distributors for recommendations based on your specific application. Common solutions include ShieldPrime UNI for concrete, steel, and wood and ShieldPrime CV for rubber, steel, elastomeric intercoat and fibreglass.

Recommended Thickness

Recommended minimum thickness for abrasion resistant duty is 3mm, 4mm for heavy abrasion. Recommended minimum thickness for waterproofing is 1.5-2mm. Recommended minimum thickness for new wood power poles is 2mm. Contact your local distributor for application specific recommendations.

Number of Coats

This product can be applied in thicknesses from 1mm up to several cm in one monolithic coat. To build to specification, allow just enough cure time for the first coat to become firm, and then spray the next coat. Do not exceed recommended recoat windows. When building to more than 4mm thickness, pause for at least 5 minutes every 3mm (approximately) to allow the coating to exotherm and cure evenly in the layers.

Sometimes two or more coats are applied using different colours as a visual wear indicator. The additional coats should be applied as soon as possible after the preceding coat has gone tack-free, but no longer between coats than the specified recoat window.

Contact your distributor for reactivation requirements for coating over cured product.

Topcoat

An aliphatic polyurea, polyurethane, or polyaspartic topcoat may be required for some applications, particularly where colour stability is required (this product is UV stable, but not colour stable). Contact your distributor for a range of options. The topcoat shall be applied as soon as possible following the final coat reaching tack-free status, with a maximum time between coats as specified by the recoat window of this product.

Safety

Refer to the MSDS. Basic safety for personal protection is:

- Disposable or reusable long sleeve overalls
- Rubber or Nitrile gloves
- Splash shield or safety glasses with splashguards
- Rubber or leather boots
- Respirator

Precautionary measures must be observed:

- Do not use near high heat or open flame
- Do not take internally
- Keep out of reach of children.

Packaging and Shelf Life

ShieldPoly CV FR is packaged in 106 Gallon (400 L) Kit: 53 Gallon (200 L) of 'A' side and 53 Gallon (200 L) of 'B' side.

Drum containers filled by weight; volume is closely approximated.

Minimum shelf life is twelve (12) months from date of shipment, in original, unopened factory containers, under normal storage conditions of 60°F to 110°F (16°-45°C).

Technical Support

Sales and Customer Support refer to website and regional contact at www.shieldcreteinternational.com.

Disclaimer

The information provided herein, especially recommendations for the usage and the application of our products, is based upon our knowledge and experience. Due to different materials and equipment used, as well as varying working conditions and environments beyond our control we strictly recommend carrying out intensive trials to test the suitability of our products regarding the required processes and applications. This data sheet is provided free of charge, and we do not accept any liability regarding the above information or regarding any verbal recommendation, except for cases where we are liable of gross negligence or false intention.