

X-Shield FS450

High elongation polyurea coating

Product Description

X-Shield FS450 is a high elongation, elastomeric, chemically resistant waterproof coating manufactured using the latest polyurea technology.

Composition

X-Shield FS450 is a 100% solids (zero VOC), two component aromatic pure polyurea.

Advantages

- High elongation – will bridge up to 1/8" (3mm) cracks
- UV resistant – no loss of properties when used in direct sunlight
- Chemical resistant – resists wide range of chemicals
- Fast setting – can be in service in 1 hour
- Environmentally friendly – zero VOC
- USDA compliant – can be used in meat and poultry areas

Uses

- Primary and secondary containment
- Protection of reinforced concrete structures
- Protection of steel structures
- Multi purpose waterproofing applications

Specification Compliance and Approvals

Los Angeles County Sanitation, (Grade 3 Redner test).
Washington Department of Ecology Toxicity Test (pass 10 & 100mg/L). EPA/600/4-85/013
Approved Storage Tank System by the Florida EPA (EQ-281).

Laboratory Test Data

Property	Typical Results	Test Method
Shore hardness	80-85°A	ASTM D2240
Density	0.92 ± 0.3	
Tensile strength	20MPa	ASTM D638
Elongation	380%	ASTM D638
100% Modulus	6.8MPa	ASTM D638
Tensile strength at 300% Elongation	10MPa	ASTM D638
Tear strength	65 KN/m	ASTM D624, Die C
Abrasive resistance (loss)	150 max. mg	ASTM D4060

The above results were obtained on 7 day old samples cured at 95°F (35°C), applied using a GX-7 453/212 at 160°F (71°C) and a spray pressure of 2800psi. X-Shield FS450 has also been tested for abrasion resistance, puncture resistance, tear strength, moisture vapor transmission, flexibility and weathering.

Chemical Resistance

Test method ASTM D 3912 (12 month exposure)

Gasoline	Slight surface change, no hardness loss
Diesel Fuel	No visible damage
H ₂ SO ₄ (20%)	Slight surface change, no hardness loss
HCl (10%)	No visible damage
NaOH (50%)	Slight surface discoloring, no hardness loss
Acetic Acid (10%)	No visible damage

Application Properties

Application temperature	-10 to 120°F (-23 to 49°C)
Service temperature	-60 to 350°F (-51 to 177°C)
Ratio by volume	1:1
Spray pressure	2800psi (19.3MPa)
Gel time	3 seconds
Tack free time	10 seconds
Metering equipment	Plural
Spray gun type	Impingement

Recommended Thickness

Immersed applications	60 to 120mils (1.5mm to 3mm)
Steel	40 to 60mils (1 to 1.5mm)
Concrete	30 to 60mils (0.8 to 1.5mm)
Geotextile	60 to 120mils (1.5 to 3.0mm)

Specification Clause

The waterproof protective coating shall be a pure polyurea coating as defined by the Polyurea Development Association and the National Association of Corrosion Engineers (NACE, 6A198). It will have an elongation of 450% and tensile strength of 2500psi as per ASTM D412. When fully cured it will be able to bridge a 1/8" crack at a coating thickness of 60mils as per ASTM C836. After 7000 hrs of ASTM G53 QUV weathering the coating will exhibit no signs of cracking. The coating must pass the UL 94 HB horizontal burn test. The coating will be applied by a contractor using trained personnel and the correct equipment as recommended by the supplier. The coating will be applied strictly in accordance with the method statement prepared by the supplier.

Color

Black, light grey and tan.

Coverage

0.66 m² per liter at thickness 1.5mm thickness (0.66m² per liter at 1.5mm).

Packaging

38 liter or 379 liter.

Shelf Life

12 months when stored unopened between 60 and 90°F (15 and 32°C) under shade in a dry environment.

Installation Guidelines

X-Shield FS450 can only be applied by an NCC X-Calibur Registered Contractor using trained personnel and the correct equipment. NCC X-Calibur does not allow any contractor on to the register unless they satisfy strict selection criteria. For each application NCC X-Calibur will provide a detailed method statement that the Registered Contractor will work to.

Limitations

X-Shield FS450 is UV resistant but not color stable. It may discolor and lose its gloss without loss of physical properties.

Do not apply in rain or wet conditions, at temperatures below -20°F (-29°C), above 120°F (49°C) or within 5°F (3°C) of the dew point.

Do not store below 60°F (15°C) or above 90°F (32°C).

Apply only on to slabs that have a waterproofing system installed in order to prevent blistering due to osmosis.

Health and Safety

This product is for industrial use only by trained operatives. It is potentially hazardous if not used correctly. Please refer to the Material Safety Data Sheet (MSDS) prior to the purchase and use of this product. The MSDS can be obtained via our website www.ncc.com.eg.

Authorized Technical Specialist

Please note that only NCC X-Calibur Authorized Technical Support Specialists (ATSS) are permitted to change any of the information in this data sheet or to provide written recommendations concerning the use of this product. Visit www.ncc.com.eg for a full list of NCC X-Calibur ATSS.

Datasheet Validity

NCC X-Calibur makes modifications to its product datasheets on a continuous basis. Please check the datasheet update section on www.ncc.com.eg to ensure you have the latest version.

Warranties

NCC X-Calibur supplies products that comply with the properties shown on the current datasheets. In the unlikely event that products supplied are proved not to comply with these properties, then we will replace the non-compliant product or refund the purchase price. NCC X-Calibur does not warrant or guarantee the installation of the products as it does not have control over the installation or end use of the products. Any suspected defects must be reported to NCC X-Calibur in writing within five working days of being detected. NCC X-Calibur Construction Systems Inc. **makes no warranty as to merchantability or fitness for a particular purpose and this warranty is in lieu of all other warranties express or implied.** NCC X-Calibur Construction Systems Inc. shall not be liable for damages of any sort including remote or consequential damages, down time, or delay.



Quality Statement

All Products manufactured by NCC X-CALIBUR or imported from X-CALIBUR companies world-wide are manufactured to procedures certified to conform the quality, environment, systems described in the ISO 14001:2004 , ISO 9001:2000.



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