

Tufflon® - P90FR

Fire Retardant Polyurea

PRODUCT

DESCRIPTION

Tufflon – P90FR is a two-component spray applied pure polyurea. It is tough and elastomeric. It is the ideal coating or lining solution for applications that require a fire-retardant coating

INTENDED

USES

- Fire retardant applications
- Mining industry
- Lining of secondary containment (bund) facilities for chemical and fuel storage
- Can be used over geofabric & road base

FEATURES

- Gels in seconds to form a seamless lining with a vice-like grip to most surfaces
- High Abrasion Resistance
- Resistant to puncture
- Application is not affected by temperature or moisture
- Remains permanently elastomeric
- Contains no volatile or flammable solvents and no catalyst
- High chemical resistance to alkalis and petrochemicals
- Can be applied to geofabric

PRODUCT

DATA

Volume Solids	100%
Theoretical Coverage	0.33 Square meter / Litre
Finish	Pigmented
Colour	Mid Grey
Gloss	Semi-Gloss
Mixing Ratio	1:1 by volume
Gel Time	5 Seconds
Typical Thickness	3000 Microns
Cleaner	Reactor Flush
Flash Point	>149 °C
VOC	0 Grams/Litre
Specific Gravity	1.11

CURE &

RECOAT

Substrate Temp	Tacked	Hard Dry	Full Cure	Walk on Time Note 1	Water Immersion Time
	30 sec	15 Min	7 Days	20 Min	24 Hrs

Note 1: Once Tufflon – P90FR gels and becomes tack free it will remain “cheesy” for up to 15 minutes or longer in colder weather. Care should be taken not to damage the coating during this time

Topcoating Tufflon – P90FR with itself:

Substrate Temperature	Maximum Recoat Time
5°C to 45°C	20 minutes

Maximum topcoat time: The maximum Tufflon – P90FR recoat window is 20 minutes. Prior to commencing next day's spraying the cold edge must be mechanically abraded to a minimum of 100 mm wide to reactivate the Tufflon – P90FR and give acceptable adhesion. Vacuum all grinding swarf as you go. The non-abraded, cured coating must be masked to prevent overspray and provide a neat edge of the new section

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ENGINEERING DATA

Method	Property	Results
ASTM 2249-91 Shore A	Hardness	85-90
ASTM 2249-91 Shore D		40-43
ASTM D412-92	Elongation at 24°C	>360%
ASTM c501-84, HS18 wheel @ 1,000rpm with 1,000g weight	Abrasion Resistance	235mg
ASTM c501-84, CS17 wheel @ 1,000rpm with 1,000g weight		4mg
ASTM D412-92	Tensile Strength	13 MPA
ASTM D 624-86	Tear Strength	60 - 65 N/mm
CNS 14263 (1998)	Puncture Strength	5.33
CNS 10146 (1983)	Hydrostatic Pressure Resist.	No leakage
AS 3558.1	Water Absorption (23°C, 24hrs)	<1%

FLAMABILITY TESTING

Method	Property	Results
FMVSS-302		Pass (Uncertified)
UL-94		V-1 (Uncertified)
AS ISO 9239		7.6 kW/m ²
AS 1530.3	Ignitability	13
AS 1530.3	Spread of Flames Index	6
AS 1530.3	Heat Evolved Index	5
AS 1530.3	Smoke Developed Index	8

LIMITATIONS

- Standard Aromatic based Polyurea products such as Tufflon – P90FR will change colour over time, with lighter colours changing more than darker colours. It will also undergo surface chalking when exposed to sunlight. This does not affect the long-term physical performance of the lining
- Tufflon – P90FR will only achieve its full physical properties if applied by an experienced operator using properly functioning, plural-component, spray equipment
- Product requires up to 14 days to develop full physical properties and adhesion. Pull-off or other adhesion testing might not produce accurate results during this period

SURFACE PREP

Concrete

The concrete surface preparation must be conducted in accordance with the SSPC-SP13/NACE No. 6 surface preparation standard for concrete. This standard covers the preparation of concrete surfaces before the application of protective coating or lining systems

The concrete should be at least 28 days old. Ensure that the moisture content of the concrete is less than 7% before applying any coatings. A moisture test as outlined in ASTM D4263 can be used to confirm the moisture content

1. Remove all oil, grease and release agents in the concrete. Ensure that any laitance or other invisible contaminants have been removed. Be especially careful with concrete surfaces that have been in contact with form ply or moulds that may contain release agents. These release agents commonly contain heavy hydrocarbon waxes or silicones that can adversely affect the adhesion

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Surface Preparation Concrete continued:

Contaminant may also be present below the surface as it may have penetrated the concrete. This can be the case in food processing facilities for example. Depending on the depth of the contaminant this may require solvent and /or hot water high pressure cleaning.

Prepare the concrete surface to a clean, dry finish by ensuring that the water and air used in the decontamination of the concrete are clean.

2. Fill big holes with PU sealant or Civilox – LV100 mixed with Renderfill
3. Restore exposed aggregate surfaces back to the original profile by rendering with a mixture of Civilox – LV100 and Renderfill (a proprietary blend of clean, dry sand)
4. Remove high spots and protrusions, radius sharp edges and corners. Cove internal 90-degree angles with 45 degree, 20mm flat chamfer
5. Preparing of the concrete surface should be done in accordance with SSPC-SP13/NACE. Smooth, shiny concrete must be roughened to a profile similar to 80 grit sandpaper and comply with CSP 2 - 5 or as documented in a coating system specification. Surface preparation methods employed can be vapour abrasive blasting, dry abrasive blasting or grinding may also be employed

APPLICATION

Equipment

Proportioning pump:	Graco E-XP2 or similar - heated, high-pressure, plural component
Gun:	Graco Fusion-AP or similar - Impingement mix, airless
Pressure of material at gun:	>2,000 psi
Temperature of material at gun:	65°C

Environment

Relative humidity:	The relative humidity must be less than 85%
Dew point:	The substrate temperature must be at least 3°C higher than the dew point temperature
Substrate Temperature:	The substrate temperature must be a minimum of 5°C

Mixing

Stir Part B at high speed with a Graco Twistork drum stirrer for about 10 minutes then reduce speed to slow during the spraying. For smaller containers use a powered mechanically powered flat paddle stirrer

Thinning

Tufflon - P90FR should never be thinned

Clean-up

Reactor Flush may be used for general clean-up of equipment and hoses. For soaking of contaminated metal parts use SWELL. Keep all gun part A side components in soak containers on the left side of the work bench and all part B side components on the right side of the work bench. The use of plastic soak containers with clip on lids and removable baskets makes the job easier. Replace the SWELL regularly as soon as it starts turning cloudy and dirty

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COMPATIBILITY

Primers

Civilox - LV100
Civilox - LV110
Civilox - HB200

Topcoats

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Typical Systems

Substrate	Environment	Substrate Prep	Coat	System	DFT
Concrete	Secondary containment	Blast CSP 2 - 5	1 st Coat 2 nd Coat 3 rd Coat	Civilox – LV100 Civilox – HB200 Tufflon - P90FR	(200µ) 125µ 3000µ
Roadbase	Secondary containment		1 st Coat 2 nd Coat	Liquibond Tufflon - P90FR	Seal 3000 µ
Geotuff 220	Secondary Containment		1 st Coat	Tufflon - P90FR	3000µ

STORAGE & HANDLING

Store in dry, shaded conditions away from sources of heat and in the original properly sealed containers. Protect from heat and frost. Protect contents from moisture. A shelf life of 24 months minimum is typical with unopened containers if stored at ambient conditions at 25°C. If either component is opened and partially used, it should be purged with nitrogen or desiccated air and resealed

PACK SIZE

400L Kits

225Kg of Tufflon - P90FR Part A in a 200L Container

206Kg of Tufflon - P90FR Part B in a 200L Container

40L Kits

22.5Kg of Tufflon - P90FR Part A in a 200L Container

20.6Kg of Tufflon - P90FR Part B in a 200L Container

HEALTH & SAFETY

Tufflon - P90FR is for professional use only.
This product contains isocyanates and may require the use of air feed hoods.
This product should not be used without consulting the Safety Datasheets first.
Please observe all health and safety as well as environmental legislation that applies in your state

DISCLAIMER

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