TUFFLON-P90

DESCRIPTION & SPECIFICATION

DESCRIPTION Two-part polyurea, 100% solids, designed for spray-application through specialised, airless, plural-equipment to form a tough, durable, permanently elastomeric, protective coating for steel and concrete.

FEATURES

- Safe for contact with Drinking Water
- Permanent elongation of 430%
- High adhesion to properly prepared substrates
- Abrasion, impact & corrosion resistance ensures long service life
- High chemical resistance
- Will not crack or flake
- Fast return to service
- Zero VOC's

COLOUR Standard Grey or Black. Cream coloured for use with Potable Water

FINISH Gloss or non-slip, stipple finish. May be overcoated with colour-fast and non-slip top coats

PRIMERS

- Concrete - Civilox two-part Epoxy
- Steel - Civilox two-part Epoxy or etch primer
- Immersion - Civilox two-part Epoxy

DRY FILM THICKNESS

- 1.5 - 3mm - Waterproofing
- 3 - 5mm - Protective Coating, Tanking, Potable Water, Corrosion & Chemical Resistance
- 5 - 10mm - High Abrasion Resistance

COVERAGE RATE
1L / m^2 = 1mm DFT (varies with substrate)
3L / m^2 = 3mm DFT etc.
1L = 1.05kg

APPROVALS

- Australian made under ISO9001
- AS/NZS 4020:2005 (Contact with Potable Water)

LIMITATIONS

- Some colour change and surface chalking may occur over time
- Avoid high stresses within first 8 hours of application, especially in cold weather. If high joint movement is expected under Tufflon-P90 within first 8 hours, re-specify to Tufflon-P80 or Elaston-W80. Otherwise finish application of Tufflon-P90 prior to midday
- Recoat within 20 minutes to build to specified DFT. After that, remove shiny surface with 80 grit sanding disc prior to overcoating
- May crack during cure if applied too thick next to thin sections. Cove internal 90-degree corners with 45-degree, 25 - 50mm flat section
- For use only by authorised applicators

APPLICATIONS

- Protective lining for internal surfaces of concrete and steel drinking water reservoirs - 20+ years design life
- Protecting surfaces against chemicals and abrasion in sewerage assets with 20+ years design life
- Heavy vehicle tipper, rail car and marine lining – resists abrasion, corrosion and impact
- Bund and secondary containment lining

TYPICAL WET PROPERTIES

PROPERTY	PART A	PART B
Density Part (kg/L)	1.11	1.00
Viscosity Part (Cps@25°C)	680-750	720 - 800
Pack Size - Natural Colour (steel drums)	225kg	200kg

TYPICAL CURED PHYSICAL PROPERTIES

PROPERTY	TEST METHOD	RESULTS
Mix Ratio (v/v)	Plural equipment	1:1
Hardness	ASTM D2240-91 Shore A	90
Elongation at 24°C	ASTM D412-92	430%
Abrasion Resistance	ASTM D460-10 (CS-17 @ 1000 rpm with 1000 g weight	58 mg
Tensile Strength	ASTM D412-92	16.0 MPa
Tear Strength	ASTM D412-92	98 N.mm
Solids (100%)		100
Flash Point	Pensky Martens Closed Cup	>149°C
Theoretical Coverage		1 mm/m^2/1 litre
Early Fire Hazard	AS1530 Part 3 (1989)	2mm sample
Properties	Ignitability Index (0-20) Spread of Flame Index (0-10) Heat Evolved Index (0-10) Smoke Developed Index (0-10) ASTM D 1692-68	16 8-9 9-10 7 Self-Extinguish
Suitability for contact with drinking water	AS/NZS 4020:2005	Passes all requirements at 7,500mm^2 per litre exposure.
Cathodic Disbondment with 3mm thick coating	ASTM G8-90 Method B using an impressed current	Rating D

SURFACE PREPARATION

- **Concrete** - Prepare, profile and clean using industry standard techniques. Prime with Civilox or approved alternative. Apply to specified DFT and uniform smooth finish. No drips, overhangs or defects
- **Steel** – Blast, profile and clean using industry standard techniques. Prime with Civilox. Apply to specified thickness and uniform smooth finish. No drips, overhangs or defects
- **Geofabric** – Tufflon-P80 or Elaston-W80 preferred due to fast early cure. Allow up to 1.2% shrinkage within first 30 minutes when pinning Geofabric to the substrate. Contact Liquimix.
- **Other Substrates** - P90 adheres strongly to most well prepared surfaces. Use Bondaq to join onto HDPE
- **Recoat** - If within 20 minutes ensure surface is dust free. If greater than 20 minutes, mechanically remove shiny surface with 80 grit disc, ensure surface is dust free, mask to produce neat repair line, avoid overspray on previously installed adjacent areas

CURING SCHEDULE

Gel time	5 seconds
Tack free	30 seconds
Walk on (with care)	2 minutes
Spark test between	2 - 15 minutes
Repair defects within	20 minutes
Cure time (90%)	24 hours
Full immersion	24 hours
Hydraulic adhesion test	48 hours
Full physical properties	7 days

STORAGE & HANDLING

If stored outside, protect drums from rain by covering with tarps. Avoid water ponding on top of drums. Keep materials as cool as possible, especially the Iso drums. Partly used drums of Iso should be topped with nitrogen and sealed well. Apply Fusion grease to all Iso side threads to avoid seizing. Prolonged and repeated heating of the Iso will dramatically shorten its useful life. Exposure to atmosphere will also shorten the life of Iso. Remove Iso material from plural equipment at end of project. Flush with Swell and leave in the unit with heaters at 60° C for up to 8 hours. For prolonged storage replace Swell with light engine oil. Contact Liquimix for method. Refer to the latest product SDS (Safety Data Sheet) published on the Liquimix website.

SPRAY PARAMETERS

- Read Spray Equipment Operation Manuals prior to use.
- Stir amine (part B) well before use. Avoid air entrainment.
- Husky 515 or 716 drum pumps are easiest to use and maintain. T2 drum pumps preferred for cold climates
- Mix ratio A:B = 1:1 by volume
- Tufflon-P90 pressure at gun = 2,000 - 2,500 psi
- Tufflon-P90 temperature at gun = 63 - 75^{o}C
- Use correct mix chamber to suit proportioner and application
- Ensure adequate clean, dry, compressed air supply
- Stop spraying if pressure difference between A & B exceeds 10%. Troubleshoot check valves, mix chamber or Y strainers
- Remove high spots and fill holes prior to priming with at least two coats of Civilox. Apply bond-breaker tape to joints
- Perform Holiday and DFT testing continuously within 2 to 15 minutes of Tufflon application. Rectify defects immediately, mark with chalk and respray within 20 minutes
- Mask off adjacent areas to minimise overspray. Use wire-trim tape to produce neat and durable termination lines
- Maintain consistent spray pattern by drilling mix chamber, cleaning air cap and tip of mix chamber regularly. Spray “off the job” prior to starting each session to verify correct operation
- Trigger gun on and off for small areas and detail work. Hold trigger on for larger areas to minimise fatigue and bearding. Reverse the direction of gun-travel quickly at the end of each sweep of the arm in order to maintain an even thickness
- Keep the gun at 90-degrees to the surface being coated. Minimise moving the gun in an arc pattern
- Build to specified DFT with overlapping passes while keeping a wet edge. Spray from two opposite directions in order to minimise defects. For a smooth finish, spray the final coat with the gun facing the direction of travel
- Remove drips, runs or defects within 2 minutes of application using a portable sander and respray immediately
- Spray floors first and then walls from the bottom up. Face gun upwards on walls for best results. Be especially careful to maintain uniform thickness at the wall / floor joint

ASSET OWNERS, SPECIFIERS & ENGINEERS

Ensure the applicator is competent and authorised by Liquimix. Deal directly with Liquimix for all product related technical inquiries and Cc other parties. Rely only on the latest TDS published on the Liquimix website. Ensure the ITP is complied with and a completed copy sent to Liquimix for product warranty. If in doubt communicate with us directly.

Figure 1.
Steel bolted panel tank lined with Tufflon-P90. Used for remote community drinking water supply

Figure 2.
Concrete tank lined with Tufflon-P90. Australia’s first water recycling plant producing potable quality water

Figure 3.
Seafood processing factory. Concrete floor lined with green, non-slip, easy-to-clean Tufflon-P90.

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