

# Technical Data Sheet



## Tufflon-D60SL

**Pure-Polyurea, Spray-Applied, Rapid-Set, Thick-Film, Elastomeric, Protective Coating - High Hardness (62D) - with High Slip Properties for heavy tipper market**

### DESCRIPTION

Two-component, 100% solids, spray-applied, elastomeric protective coating that is free of solvents or partially soluble diluents such as Propylene Carbonate.

This product is specially formulated to be applied to heavy vehicle tippers for extra slip to ensure safe and early release of bulk dry and slurry loads in road and rail tippers.

Specialised, high-pressure, heated, plural proportioning equipment, fitted with an impingement mix, airless spray gun is required to apply this product.

*Tufflon-D60SL is a premium polyurea designed for direct to steel application without the need for primers (except when immersed). It offers superior adhesion of up to 14 MPa with outstanding corrosion and abrasion resistance.*

### TYPICAL USES / APPLICATIONS

- In-built slip formulation facilitates the early release of bulk dry and slurry loads in road and rail tippers
- Safe food grade products used. Will not contaminate loads
- Protecting steel assets in extreme environments
- Wear resistant coating for Heavy Transport steel and aluminium tippers
- High hardness floor coating resistant to tears and puncturing from movement of pallets with protruding nails
- Tufflon-D60SL is not suitable for General-Purpose use

### ADVANTAGES / FEATURES

- High hardness, yet retains permanent elasticity.
- Will not crack, peel or flake
- Superior adhesion to steel
- Superior corrosion resistance
- High resistant to chemicals and solvents
- Withstands high temperatures of up to 130°C
- Application is not affected by temperature or moisture
- This product may be sprayed to thicknesses exceeding 1 mm per pass and cures to become rain insensitive within minutes of application
- Superior adhesion, abrasion and impact resistance ensures long service life of tipper

### LIMITATIONS

- Standard Aromatic based Polyurea products such as Tufflon and Elaston, will change colour over time, with lighter colours changing more than darker colours. Although this does not affect the long-term physical performance of the lining, if colour change is not acceptable, for aesthetic reasons, a colour-fast, top-coat should be applied.
- Polyurea will only achieve its full physical properties if applied by an experienced operator using properly functioning, plural-component, spray equipment.
- Tufflon-D60SL takes longer than other polyureas to toughen up and achieve its full physical properties - up to 14 days.

<b>TYPICAL LIQUID PROPERTIES</b>		
<b>Property</b>	<b>Part A (iso)</b>	<b>Part B (resin)</b>
Density Part (kg/L)	1:1	1:00
Viscosity Part (Cps@25oC)	680 - 750	720 - 800
Colour	Clear liquid	Light brown liquid that is tinted to a range of colours: Light grey/Mid grey/White/Cream/Bottle green or black. Available in most colours)
Pack size (steel drums)	225kg	200kg

<b>TYPICAL CURED PROPERTIES</b>		
Physical properties cured and unpigmented		
<b>Property</b>	<b>Test method</b>	<b>Results</b>
Mix Ratio (parts A & B)	By volume	1:1
Hardness	ASTM D 2240-91 Shore D	60 - 70
Elongation at 24°C	ASTM D412 06ae2	160%
Abrasion Resistance (mg loss)	ASTM C501-84, 1,000 rev, with 1,000g weight. H18 wheel CS17 wheel	170mg 15mg
Tensile Strength (MPa)	ASTM D412 06ae2	21 MPa
Tear Strength (kgf/cm <sup>2</sup> )	ASTM D 412-92	110 N/mm
Adhesion strength to steel (MPa)	ASTM D4541-09	>14

Puncture Strength (MPa)	N/A	N/A
Hydrostatic Pressure Resistance (0.1MPa/cm <sup>2</sup> , 30 minute)	N/A	N/A
Water Absorption (%) (23°C, 24 hrs)	AS 3558.1	0.76%
Water Vapour Transmission	ASTM E-96-05 (B)	0.07g/(h.m <sup>2</sup> ) 1.68g/(m <sup>2</sup> .24h)
Water vapour permeability	ASTM E-96	0.00019
Solids (100%)		100
Flash Point	Pensky Martens Closed Cup	>149°C
Theoretical Coverage	Use 1L/sqm for every 1mm thickness. eg. 3mm thickness will require 3L/sqm. (1L =1.05kg)	
Early Fire Hazard	AS1530 Part 3 (1989)	2mm sample
Properties	Ignitability Index (0-20)	16
	Spread of Flame Index (0-10)	8-9
	Heat Evolved Index (0-10)	9-10
	Smoke Developed Index (0-10)	7
	ASTM D 1692-68	Self-Extinguish
	Suitability for use with drinking water	AS 4020-2006
Cathodic Disbondment with 3mm DFT	ASTM G8-90 Method B 60 days	2mm sample
VOCs		Zero
Colour		Black, mid grey, dark grey. Can be tinted to any colour.
Finish		Gloss

<b>PROCESSING - PARAMETERS</b>	
Proportioning pump	Graco Reactor E-XP2 Heated, high-pressure, 1:1 mix, plural component, proportioner
Gun	Graco Fusion AP or CS Impingement mix, airless
Pressure of material at gun	Part A - 2,100 psi Part B - 2,100 psi
Temperature of material at gun	65°C
Relative humidity	<85%
Dew point	N/A

<b>THICKNESS RECOMMENDATION</b>	
High abrasion resistance	>5mm
Protective coating	>3mm
Tanking potable water	N/A
Waterproofing	N/A
Corrosion and Chemical	>3mm

<b>CURING SCHEDULE</b>	
Note: Once Tufflon 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.	
Gel time	8 seconds
Tack-free time	60 seconds
Walked on (carefully)	24 hours
Cure time (99%)	48 hours
Expose to water	48 hours
99% physical properties	7 days
Full physical properties	7 to 14 days

## APPLICATOR REQUIREMENTS

Applicator must be approved by LiquiMix. Applicator must read Tufflon-D60SL TDS and SDS and Graco Spray Equipment Operation Manuals prior to use.

## PROJECT ENGINEER NOTES

Project engineer verify contractor is approved. Ensure ITP is completed and copy sent to LiquiMix for product warranty. Continuous use of high voltage and DFT gauge recommended. Rectify defects immediately. Lining should be smooth and even with no runs, drips or pinholes. Mask to minimise overspray on adjacent and finished areas. Adhesion testing using a should be done no sooner than two days, preferably seven days after polyurea has been sprayed. Hydraulic adhesion testing should use a 50mm dolly for concrete, 20mm dolly for steel. Note: NEVER peel or pull cured polyurea by hand to test for adhesion.

## HEALTH AND SAFETY ADVICE

Please read safety data sheet prior to use of product. Do not breathe dust/fume/gas/mist/vapours/spray. Use only outdoors or in a well-ventilated area. Wear protective gloves/clothing/eye protection/face protection. Do not eat, drink or smoke when using this product. Avoid release into the environment. Contaminated work clothing should not be allowed out of the workplace. Take off contaminated clothing and wash before reuse.

Specific treatment (see advice on label and Safety Data Sheet). If on skin: wash with plenty of soap and water. If in eyes: rinse cautiously with water for several minutes. Remove contact lenses. If present and easy to do. Continue rinsing. Call a poison center or doctor if you feel unwell. If skin irritation or rash occurs get medical advice/attention. If eye irritation persists get medical advice/attention. If inhaled, remove victim to fresh air and keep at rest in a position comfortable for breathing. Always collect all spillage. Refer to LiquiMix Safety Data Sheets for individual products.

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### Important Notice

*The information contained herein is offered without charge and is for use by technically qualified personnel at their own risk. All statements, technical information and recommendations contained herein are based on tests and data which we believe to be reliable, but the accuracy or completeness thereof is not guaranteed and no warranty of any kind is made with respect thereto.*

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