

Technical Data Sheet

Date of Issue: 20th May 2021

Page 1 of 4

Product Name: RELINFORCE TUFFCOAT- PRODUCT OF DRDO

Two component pure polyurea coating system

Description

RELINFORCE TUFFCOAT is a two component, spray applied, 100% solids, fast setting, elastomeric pure polyurea coating system which cures to form a tough and durable membrane exhibiting high degree of waterproofing, abrasion, and chemical resistance.

RELINFORCE TUFFCOAT consists of two components: *RELINFORCE TUFFCOAT PART A* and *RELINFORCE TUFFCOAT PART B*.

Applications & Uses

RELINFORCE TUFFCOAT finds use as a waterproof and protective coating in new construction and refurbishment projects for concrete and metal under a wide variety of environmental conditions. It is useful for:

- Blast mitigation
- Waterproofing solutions for existing bituminous membranes, terraces, and concrete surfaces
- Protecting decks, bridges & tunnels
- Protecting metal & concrete structures in dams, canals, pipelines, marine & offshore installations, power plants, sewage & wastewater treatment plants and storage tanks in refineries and petrochemical plants

Features & Benefits

- Environmentally friendly & sustainable solution- 100% solid, Zero VOC
- Very fast reactivity profile and curing time
- Rapid return to service
- High elasticity (>250 %)
- Superior mechanical properties- tensile strength, tear resistance, adhesive strength & shore A hardness
- Fire retardant
- Chemical resistance
- Long life expectancy

Technical Data Sheet

Date of Issue: 20th May 2021

Page 2 of 4

Typical System Properties

Property	Value	Unit
Type	Pure Polyurea	-
Solids by volume	100	%
Viscosity (at 25 °C)	PART A: 155 ± 2 PART B: 240 ± 5	cP
Gel time	6	second
Tack free time	30	second
Fully serviceable	24	hour

Liquid resin properties are based on the testing of materials in the laboratory and are typical values. The results and values obtained herewith may vary from sample to sample. These typical resin values should not be construed as a guaranteed analysis of a specific lot or of specification items.

Typical Mechanical Properties

The following table illustrates the typical mechanical properties of the system.

Property	Value	ASTM/ISO Method
Tensile strength	15.6 ± 0.5 MPa	ASTM D412
Tensile modulus (100%, 200%)	7.8 MPa, 14.1 MPa	ASTM D412
Elongation at break	265 ± 9 %	ASTM D412
Tear strength	63 ± 3 N/mm	ASTM D624
Adhesive strength (concrete/metal)	>13 MPa	ASTM D4541
Hardness (Shore A)	96	ASTM D2240
Service temperature	-30 to +100	°C

The typical mechanical properties given above are derived from independent verified testing of RELINFORCE TUFFCOAT in controlled laboratory environment and tested after a minimum of 15 days cure

Application Parameters

Property	Value	Unit
Block temperature	70	°C
Hose temperature	70	°C
Pressure	130 – 150	bar
Volume ratio	1:1	v/v

Technical Data Sheet

Date of Issue: 20th May 2021

Page 3 of 4

Surface Preparation

The performance of RELINFORCE TUFFCOAT is strongly dependent on surface preparation. Prior to spraying, the surface needs to be assessed for contamination. All surfaces must be clean, dry, and free from contamination.

Concrete

Abrasive and centrifugal shot blasting may be used to remove contaminants, weak concrete, laitance, and to produce a surface which possesses adequate profile and porosity. Surface defects such as blow holes and voids must be fully exposed. All blow holes and surface imperfections should be filled with an appropriate RELINFORCE product range. In case of uneven surfaces, levelling to be carried out to remove high spots.

Metal

Metal surfaces must be prepared by blast cleaning. The surface needs to be free of contaminants deleterious to adhesion. Cleaning must be preferably carried out by high pressure water jetting prior to blast cleaning.

Priming

After correct surface preparation, surfaces must be primed using an epoxy primer. The following primer can be used according to the surface to be coated

Surface	Primer
Concrete	RELINFORCE FAB S PR
Metal	

Refer to TDS of RELINFORCE FAB S PR for further details. Other surfaces must be tested for their compatibility. If in doubt, apply a test area first.

Spray Equipment & Application

A high-pressure spray proportioning equipment/spray gun for plural heated polyurea components should be used for this system. The proportioning machine utilized should be capable of providing correct pressure and heat for the hose length on a consistent basis. The components must be heated to 70 °C both in drum and hose. The recirculation system must be activated during preliminary heating of drums. The correct mixing ratio is 1:1 by volume. The accuracy of mixing and dosage must be controlled regularly with the equipment to prevent any deviation.

Consumption: 1 kg/m²/mm

The consumption figure is theoretical and does not take into consideration surface porosity, profile, variations in level which may lead to an increase in consumption.

UV Stable Topcoat

If UV stability is required, RELINFORCE SURFACE SHIELD EP TC (epoxy topcoat) should be applied. Refer to TDS of RELINFORCE Surface Shield EP TC for further details.

Technical Data Sheet

Date of Issue: 20th May 2021

Page 4 of 4

Limitation

Do not use the product if atmospheric relative humidity is >90 % and substrate temperature is <3 °C above dew point.

Storage and Shelf Life

RELINFORCE TUFFCOAT has a shelf life of 12 months if stored in a dry place away from sunlight and other sources of heat, preferably between 5 °C and 25 °C in unopened containers. Any changes in colour does not have a negative impact on reactivity and physical properties.

Health & Safety Hazard Condition

Please refer to MSDS for detailed information on the health & safety hazard while using the product.

Notice: No freedom from any patent owned by RIL or others is to be inferred. RIL assumes no obligation or liability for the information in this document. The information provided herein is presented in good faith and is based on the best of RIL's knowledge, information, and belief. Since use conditions at non-RIL facilities are beyond RIL's control and government requirements may differ from one location to another and may change with time, it is solely the Buyer's responsibility to determine whether RIL's products are appropriate for the Buyer's use, and to assure the Buyer's workplace, use, and disposal practices are in compliance with applicable government requirements. Consequently, RIL assumes no obligation or liability for use of these materials and makes no warranty, express or implied. The user of the information provided is solely responsible for compliance with any applicable government requirements. NO WARRANTIES ARE GIVEN; ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY EXCLUDED.