Technical Data Sheet

Rhino TUFF STUFF®

SIDE-A – ISO **SIDE-B - Resin**

Revised Date: 06/07/2020
This TDS Replaces All Previous Versions

DESCRIPTION

Rhino Tuff Stuff is an elastomeric exothermic, rapid curing 100% solids polyurethane (zero VOCs)

FEATURES AND BENEFITS

- Very High elongation
- Very good slip resistance
- Good noise reduction
- Excellent weather resistance
- Excellent abrasion resistance
- Stable from –40ºC to 80ºC
- Excellent corrosion resistance
- Good chemical resistance
- Waterproof Membrane AS/NZ 4858:2004. Class III
- Potable Water Membrane AS/NZ 4020:2005, Drinking Water
- Flammability Test ASTM D635-98 (Modified), Standard Test Method for rate and/or extent of time of Burning of Plastics in a Horizontal Position, specimens self-extinguished.
- Excellent impact resistance

TYPICAL USES

- Waterproofing rooftops, podiums, balconies etc.
- Drinking water tank linings
- Lining the internals of pipes
- Casting material for material handling equipment such as Chutes, hoppers, rollers, etc.
- Ute and Truck bed linings
- Skip bin & Vac truck linings

NOT RECOMMENDED FOR

- Sustained temperatures below -40°C or above 80°C.
- Application to high density polyethylene or thermo plastics.
- Do not apply to concrete with curing or sealing membranes.
- Do not apply to substrates affected by moisture content in excess of 5%.
- Do not apply to concrete less than 28 days old
- Avoid applying in conditions with high humidity.
- **NOTE –** Substrate temperature **must** be 3 ºC above the dew point prior to application

TYPICAL PHYSICAL PROPERTIES

Hardness (Shore A)	88A±5	ASTM D-2240
Tensile Strength (psi)*	1300 – 1500	ASTM D-412
Elongation (%)	250 – 300	ASTM D-412
Elongation (%)	375 – 430	AS/NZ 4858:2004
Compressive Strength (psi)	800	ASTM D-695-96
Taber Abrasion Resistance (mg of loss/1000 cycles)		
CS17 Wheel: 1000 grams weight	10 – 15	ASTM D-4060
Tear Resistance (pli)* Die C	200 – 250	ASTM D-624
Ross Flex (% crack growth per 50,000 cycles)	0	ASTM FIA-308
Coefficient of Friction on Steel		
Static	0.85	ASTM D-1894-95
Kinetic	0.78	ASTM D-1894-95
Specific Gravity (grams/cc)	1.06 – 1.08	ASTM D-792
Water Absorption (%)	≤1.6	ASTM D-570
Dielectric Strength (volts/mil)	300	ASTM D-149
Volume Resistancy (ohm/inches)	6 x 10 (12)	ASTM D-257
Dielectric Constant (MHz)	5.4	ASTM D-150
Dissipation Factor (MHz)	0.058	ASTM D-150
Cathodic Disbonding	Pass	ASTM G-8

* Properties were checked of Rhino TUFF STUFF polyurethane lining 3.18 mm thickness.

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CHEMICAL RESISTANCE
Good resistance to many routine chemicals such as: weak acids, weak alkalis, oils and cleaning agents. For specific applications and/or information, consult with Rhino Linings® representatives for further information.

CHEMICAL PROPERTIES

Initiation	10-20 secs
Gel Time	20-30 secs
Tack Free time	60 secs
Chemical temperature may vary processing times	
Re-Coat time (max without priming)	6 hours
Mix ratio	
Chemical temperature may vary processing times	
Cure time – 95-99%	24 hours
Re-Coat time (max without priming)	6 hours
Mix ratio 2-1	

COMMON SUBSTRATES
Metals, wood, concrete, brick, fibreglass, some composites, and geotextiles.

VOLATILE ORGANIC CONTENT
Zero VOC

DRY FILM THICKNESS RANGE (subject to application)
Varies based on application, typically used at a minimum of 2mm up to unlimited thickness.
Waterproof Coating Thickness (non-trafficable): 2mm to unlimited.
Automotive Coating Thickness (ute bed): Floor/Tailgate 4+ mm, Walls/Rail 2+ mm.

STORAGE AND PACKAGING
Rhino Tuff Stuff should be stored in sealed containers, in a dry area away from direct sunlight at 15ºC – 30ºC.
Constant 25^{0}C recommended.
Part A – Isocyanate: 12 months, unopened. 75kg and 250kg Drums.
Part B – Resin: 12 months, unopened. 62kg and 204kg Drums.

BASE MATERIAL COLOURS
Isocyanate – yellow or light straw colour.
Resin – Opaque

COLOUR OPTIONS
Nine (9) standard colours available in 2.4Kg and 8Kg sizes. (Custom colours available by special order ONLY. Use AS2700 Australian Standard Colour Chart as a guide).

RE-APPLICATION PROCEDURES
Clean old Tuff Stuff so it is free from contaminants, cleaning with biodegradable foaming agents or similar if necessary. Once cleaned and dry, abrade surface to gain a rough scratched profile (80 Grit sandpaper or nylon cup brush). Remove all dust with air and wipe substrate with acetone then prime using RhinoPrime 251 primer to TDS.

PROCESSING CHARACTERISTICS
The system settings required to achieve quality spray application will vary depending on environmental and substrate conditions. The following recommended parameters will help ensure optimum quality.

Equipment Used	Spray Pressure	Process Temperature	Spray Gun	Mix Module
Rhino MK-15	N/A	25℃ - 35℃	Rhino 2:1 Gun	1/4”–3/8” static Mixer

(Tested in cups, 161g combined @ 25ºC)
Initiation 10-20 secs; Gel time 20-30 secs; Tack Free/Solid <60 secs; 95-99% cure 24 hours.

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SAFETY PRECAUTIONS

Health Considerations: consult Rhino Linings Material Safety Data Sheets. The uncured components of Rhino Linings TUFF STUFF can cause irritation to the eyes, skin, mucous membranes and are harmful is swallowed. When handling, avoid contact with eyes and skin (especially open cuts). In case of contact, immediately wash off with plenty of water for at least fifteen (15) minutes. For eyes, obtain medical attention. Always wash hands before eating. Obtain immediate medical attention in case of ingestion. Rhino TUFF STUFF contains isocyanates and may cause allergic skin or respiratory reactions. Do not use if you have chronic breathing problems (asthma) or if you have ever had reactions to isocyanates. When applying Rhino TUFF STUFF, avoid breathing vapours. Fresh air-supplied standard painter's hood or full-face respirator must be worn by all personnel entering the area where Rhino TUFF STUFF is being applied until all vapours have been exhausted. In case of extreme exposure or adverse reaction, remove affected personnel to fresh air immediately and obtain medical help.

Important: Consult the Rhino Linings Material Safety Data Sheets: Read and follow warning labels on all components. For professional use only. Follow cautions and handling guidelines in Rhino Linings Technical Manual. The information herein is believed to be reliable, but unknown risks may be present. All warranties of any kind, expressed or implied, including warranties of fitness for a particular purpose, are specifically disclaimed.

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