

Part A – Rhino Extreme HP 11-50 Iso, Part # 60066-1

Part B – Rhino Extreme HP 11-50 Resin, Part # 60054-1

**DESCRIPTION:** Rhino Extreme™ is a two-component, rapid curing, elastomeric pure polyurea lining system. Rhino Extreme™ HP 11-50 is a 1:1 ratio designed to be sprayed with high pressure plural component spray equipment. Thickness of the lining will vary depending on the application, typically from a minimum of 30 mils up to unlimited thickness.

**TYPICAL USES:**

- Excellent industrial lining for tough application spray conditions such as:
  - Outdoor application sites where water, humidity or low temperature conditions exist and are tough to eliminate
  - Floor and wall protection in industries such as food processing, food storage, veterinary, production area and laboratories
  - Secondary containment as a monolithic, impermeable lining for industrial plant, agriculture, and petrochemical applications
- Spray-on application creates a monolithic, seamless lining that conforms to any shape and size
- Can withstand vehicle forklift traffic and heavy loads with proper thickness build
- Elastomeric properties allow for application to surfaces subject to: vibration, expansion, contraction, movement, flexing, abrasion and impact.

**FEATURES & BENEFITS:**

- Robust application window with ability to spray at low temperatures and high humidity
- High physical properties including tensile, tear, and elongation properties
- Excellent waterproofer
- Excellent leveling properties
- Excellent abrasion and impact resistance
- Excellent chemical resistance and corrosion resistance
- Reduces noise from vibration and impact
- Bonds to virtually all substrates of any dimension, including metals, woods, concrete, fiberglass and geotextiles
- Stable from -40° to 230° F (-40° to 110° C)
- 100% solids, zero VOCs, no solvents

<b>CHEMICAL PROPERTIES*:</b>	<b>Test</b>	<b>Isocyanate</b>	<b>Resin</b>
Specific Gravity (grams/cc)	ASTM D-792	1.19	1.01
Viscosity, cps		400 – 500	300 – 400
Solids by Volume/Weight		100%	100%
Volatile Organic Compounds		0 lbs/gal	0 lbs/gal
Mix Ratio, parts per volume		1	1
Mix Ratio, parts per weight		109	100
Gel Time, seconds		7 – 9	
Tack Free, seconds		10 – 15	
Recoat, max		≤4 hrs	
95 – 99% Cure Time		24 hrs	
Theoretical Coverage		1600 sqft/gal @ 1 mil	
Odor		mild	amine
Freezing Point		40°F (4.4°C)	n/a
Color		amber/brown	straw
Shelf Life - Unopened Containers		12 months	12 months

\*Properties were tested at 77°F (25°C).

<b>TYPICAL PHYSICAL PROPERTIES:</b>	<b>Test</b>	<b>Result</b>
Hardness (Shore D)	ASTM D-2240	50±5
Tensile Strength (psi)**	ASTM D-412	2800 – 3200 (19.3 – 22.0 Mpa)
Tear Resistance (pli)** Die C	ASTM D-624	500 – 600 (87.6 – 105.1 KN/m)
Elongation (%)**	ASTM D-412	400 – 500
Impact Resistance (in/lbs)	ASTM D-256	160 (28.0 KN/m)

**RHINO EXTREME™ HP 11-50****TYPICAL PHYSICAL PROPERTIES** *(continued):*

	<b>Test</b>	<b>Result</b>
Density (lb/ft <sup>3</sup> )	ASTM D-1622	69 – 70 (1104 – 1120 Kg/m <sup>3</sup> )
Compressive Strength (psi)	ASTM D-695	800 (5.5 MPa)
Taber Abrasion Resistance (mg of loss/1000 cycles) CS17 Wheel; 1000 grams weight	ASTM D-4060	11
Mandrel Bend, 180°, 1 inch mandrel	ASTM D-522	Pass
Coefficient of Friction on Steel:	-Static	ASTM D-1894
	-Kinetic	ASTM D-1894
Water Vapor Transmission:	-Rate of Transmission (grains/hr/sqft)	ASTM E-96
	-Permeance (perm, in - lb)	ASTM E-96
Water Absorption (%)	ASTM D-570	≤1
Glass Transition - T <sub>g</sub> (°C)	ASTM D-7028	-40°F (-40°C)
Dielectric Strength (volts/mil)	ASTM D-149	300
Volume Resistancy (ohm/inches)	ASTM D-257	6 X 10 (12)
Dielectric Constant (MHz)	ASTM D-150	5.4
Dissipation Factor (MHz)	ASTM D-150	0.058
Cathodic Disbonding	ASTM G-8	Pass

\*\*Properties were checked of Rhino Extreme™ lining, 1/8" (125 mil), (3.18 mm) thick stock.

**PROCESSING CHARACTERISTICS:**

<b>Equipment Used</b>	<b>Process Pressure</b>	<b>Spray Gun</b>	<b>Mix Module</b>
Graco Reactor EXP-2	2300 psi (static)	Fusion - Air Purge or Mechanical Purge	AR2929 or greater

Process Temperatures - 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 lining quality.

<b>Iso Component</b>	<b>Resin Component</b>	<b>Hoses</b>	<b>Substrate Surface</b>
140°–160°F (60°–71°C)	140°–150°F (60°–66°C)	140°–160°F (60°–71°C)	-20°–120°F (-29°–49°C)

**DRY FILM THICKNESS:** Varies based on application, typically a minimum of 1/16" (62.5 mil; 1.5mm) up to unlimited thickness

**NOT RECOMMENDED FOR:** Application to high-density polyethylene or thermo plastics

**CHEMICAL RESISTANCE:** Rhino Extreme HP 11-50 provides good resistance to many commercial and industrial chemicals such as acids, alkalis, oils and cleaning chemicals. For specific applications and information, please consult a Rhino® representative.

**SUBSTRATES:** Bonds to virtually all substrates of any dimension, including metals, wood, concrete and fiberglass

**COLOR OPTIONS:** Color - Unpigmented. Standard colors in stock. Custom colors are also available by special order.

**LIMITATIONS:** Rhino Extreme HP 11-50 will tend to yellow or darken in exterior UV exposure, but this will not affect performance.

**HOW SUPPLIED:** Net weight per set is 910 pounds (412.7 kg). A set of Rhino Extreme HP 11-50 consists of one (1) 55 gallon (208 L) drum of 'A' component and one (1) 55 gallon (208 L) drum of 'B' component.

**STORAGE:** Rhino Extreme HP 11-50 components should be stored in sealed containers at 60 – 90°F in a dry area.

**SAFETY PRECAUTIONS: Health Considerations: Consult the Rhino Linings® Safety Data Sheets (SDS)**

This chemical system requires the use of proper safety equipment and procedures. Please follow the Rhino Linings® product SDS and Safety Manual for detailed information and handling guidelines.

**For Your Protection:** The information and recommendations in this publication are, to the best of our knowledge, reliable. Suggestions made concerning the products and their uses, applications, storage and handling are only the opinion of Rhino Linings Corporation. Users should conduct their own tests to determine the suitability of these products for their own particular purposes and of the storage and handling methods herein suggested. The toxicity and risk characteristics of products made by Rhino Linings Corporation will necessarily differ from the toxicity and risk characteristics developed when such products are used with other materials during a manufacturing process. The resulting risk characteristics should be determined and made known to ultimate end-users and processors.

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