

Part #60111 RhinoArmor™ 11-90 XC ISO
Part #60112 RhinoArmor™ 11-90 XC Resin**DESCRIPTION**

RhinoArmor™ 11-90 XC is a one to one volume ratio, two-component, 100% solids (no VOCs, no solvents), exothermic, rapid curing, elastomeric hybrid polyurea lining system. The lining thickness varies based on application, typically minimum of 1/16" (62.5 mils; 1.6 mm) up to unlimited thickness. It can be sprayed up to 98% humidity and a dew point temperature difference of 15° or more with no blistering. RhinoArmor™ 11-90 XC is easy on spray equipment with no fast gelling at the spray gun tip.

TYPICAL USES

- General Purpose Industrial Lining for Applications Such as:
 - Material Delivery System Where a Seamless, Flexible System is Essential
 - Floor and Wall Protection in Industries Such as Food Processing, Food Storage, Veterinary, Laboratories, and Production Areas
- Excellent Performance in Extreme Cold Weather Environments
- Spray-On Application Creates a Monolithic, Seamless Lining Which Conforms to Any Shape and Size

FEATURES AND BENEFITS

- Cold Weather Resistance
- Unique Flexibility at Extremely Low Temperatures From -58°F (-50° C)
- High Tensile Strength, Elongation and Tear Strength
- Impact Resistance
- Maximum Thickness-Unlimited
- Low Viscosity
- Solvent-Free
- Easy Processing

CHEMICAL PROPERTIES*	TEST	Isocyanate (A)	Resin (B)
Specific Gravity (grams/cc)	ASTM D-792	1.08-1.18	.99-1.09
Viscosity, cps		600-700	450-550
Solids by Volume/Weight		100%	100%
Volatile Organic Compounds, calculated		0 lbs/gal	0 lbs/gal
Mix Ratio, Parts per Volume		1	1
Mix Ratio, Parts per Weight		109	100
Gel Time, seconds		4±2	---
Tack Free, seconds		6-8	---
Shelf Life-Unopened Containers		12 months	12 months

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

RhinoArmor™ 11-90 XC

TYPICAL PHYSICAL PROPERTIES	TEST	RESULT
Hardness (Shore A)	ASTM D-2240	90±5
Tensile Strength (psi)**	ASTM D-412	2150-2300
Tear Resistance (pli)** Die C	ASTM D-624	335-395
Elongation (%)	ASTM D-412	275-350 [†]
Impact Resistance (lbs)	ASTM D-256	160
Density (lb/ft ³)	ASTM D-1622	69-70
Mandrel Bend, 180°, 1 inch mandrel	ASTM D-522	Pass

**Properties were checked on 1/16" (62 mils), (1.6 mm) thick stock.

[†]Properties were tested at 77°F (25°C) down to -58°F (-50°C)

PROCESSING PARAMETERS

Test samples were sprayed using the following:

Equipment Used	Process Pressure	Spray Gun	Mix Module
Graco Reactor EXP-2	2300 psi (static) / 1900-2000 psi (dynamic)	Fusion-Air Purge	AR2929

Process Temperatures: The system settings required to achieve quality lining application will vary depending on environmental and substrate conditions. The following recommended parameters will help ensure optimum lining quality.

Isocyanate Temperature (A)	Resin Temperature (B)	Hoses - High Pressure	Substrate Surface
140-160°F (60-71°C)	140-150°F (60-66°C)	155°F (68°C)	60-110°F (15-43°C)

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 a Rhino Linings® representative.

LIMITATIONS

- Avoid Application to High Density Polyethylene or Thermo Plastics

SUBSTRATES

Metals, wood, concrete, fiberglass and geotextiles.

DRY FILM THICKNESS RANGE

Varies based on application. Lining thickness can vary from a minimum of 1/16" (62.5 mils), (1.5 mm) for non-load bearing or abrasion-resistant linings up to unlimited thickness.

HOW SUPPLIED

Net weight per set is 910 pounds. A set of RhinoArmor™ 11-90 XC consists of one drum of 'A' Component (475 pounds net weight) and one drum of 'B' Component (435 pounds net weight).

COLOR OPTIONS

Natural, Industrial Tan and Federal Green.

STORAGE

RhinoArmor™ 11-90 XC Resin and/or Isocyanate may be stored for one year from date of manufacture at room temperature (~77°F (25°C)) provided the products are stored in the original sealed container.

RhinoArmor™ 11-90 XC

SAFETY PRECAUTIONS

Health Considerations: Consult the Rhino Linings® Safety Data Sheet (SDS).

This chemical system requires the use of proper safety equipment and procedures. Please follow the Rhino Linings® product SDS 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 end users and processors.

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