

PARAPRO ROOF MEMBRANE RESIN



Commercial Product Data Sheet

Product Description

Parapro Roof Membrane Resin is a high performance multi-component, fast curing, PMMA resin for use in the Parapro Roof Membrane System

Product Uses

Parapro Roof Membrane Resin, when catalyzed, is combined with polyester fleece to form a monolithic, reinforced roof membrane system. This resin is designed for roofing applications not subject to pedestrian or vehicular traffic.

Product Approvals

Parapro Roof Systems are listed by Underwriters Laboratories for use in cUL_{us} Parapro Roof Systems as Class A or B roofing systems over non-combustible, insulated non-combustible, and insulated combustible decks subject to UL conditions and limitations.

Parapro Roof Systems are approved by FM Approvals (FM Standard 4470) for use over Class 1 insulated steel roof deck constructions and insulated and non-insulated concrete roof deck constructions, subject to FM conditions and limitations.

Color

Parapro Roof Membrane Resin is supplied in light gray (#7035), and white (#9010) colors.

Packaging

Parapro Roof Membrane Resin is supplied in 20-kg (44-lb) resealable drums with locking rings.

Application and Coverage Rates

Minimum Application Rates - Smooth Surfaces

Minimum total application rate:	31 kg/sq (3.3 kg/m ²)
Base Coat (minimum application rate):	19 kg/sq (2.0 kg/m ²)
Top Coat (minimum application rate):	12 kg/sq (1.3 kg/m ²)
Typical coverage per 20-kg pail:	64 square feet

Minimum Application Rates - Granule Surfaces

Minimum total application rate:	40 kg/sq (4.3 kg/m ²)
Base Coat (minimum application rate):	28 kg/sq (3.0 kg/m ²)
Top Coat (minimum application rate):	12 kg/sq (1.3 kg/m ²)
Typical coverage per 20-kg pail:	50 square feet

See Siplast Installer's Guides for specific applications. Application and coverage rates will vary depending upon the variant selected and the smoothness and absorbency of substrate.

Application Conditions

Parapro Roof Membrane Resin is available in summer and winter grades. Care should be taken to ensure that the correct formulation is used for the application based upon the ambient temperature.

Summer Grade

Summer Grade Parapro Roof Membrane Resin can be applied when the ambient temperature is between 59°F (15°C) and 104°F (40°C) and the substrate temperature is between 59°F (15°C) and 122°F (50°C). Discontinue resin application when the ambient or substrate temperature is outside the ranges listed above. Provide adequate shade over the substrate area both prior to and during application as necessary to maintain substrate surface temperatures below 122° F (50° C).

Winter Grade

Winter Grade Parapro Roof Membrane Resin can be applied when the ambient temperature is between 23°F (-5°C) and 68°F (20°C) and the substrate temperature is between 23°F (-5°C) and 77°F (25°C). Discontinue resin application when the ambient or substrate temperature is outside the ranges listed above.

Storage

Product shelf life is 6 months from ship date. Shelf life will be reduced if product is stored at temperatures above 77°F (25°C). Store indoors in a closed container in a well-ventilated, cool, dry area away from heat, open fire, any ignition source, direct sunlight, oxidizing agents, strong acids, and strong alkalis. Do not store in temperatures below 32°F (0°C). Product may auto-polymerize at temperatures greater than 140°F (60°C).

Materials stored on the job site during application should be kept on a pallet in a shaded, well-ventilated area. In unshaded areas, materials should be covered with a white, reflective tarp in a manner that allows air circulation beneath the tarp.

Mixing & Catalyzing

If batch mixing, thoroughly mix the entire drum of resin for 2-3 minutes prior to pouring resin into a second container. Catalyze only the amount of resin that can be used within the anticipated pot life. Add pre-measured catalyst to the resin, stir for 2 minutes using a slow-speed mechanical agitator or mixing stick, and apply to the substrate. The amount of catalyst needed is based on the weight of the resin used, and varies with the ambient temperature as shown in the charts on the back of this sheet.

Set (Cure) Times at 68°F (20°C)

Minimum set (cure) times noted below are approximate, and may vary. The information provided is based on laboratory conditions, and is intended for use as a guideline only. Actual set (cure) times should be established in the field, based on actual field conditions. Rain Proof at 68°F (20°C): Approximately 30 minutes
Ready for Next Coat at 68°F (20°C): Approximately 45 minutes
Stress Resistant at 68°F (20°C): Approximately 2 hours.

Handling

Do not smoke. Keep away from open fire, flame, or any ignition source. Vapors may form explosive mixtures with air. Avoid skin and eye contact with this material. Avoid breathing fumes. Do not eat, drink, or smoke in the application area.

Personal Protection Equipment (PPE)

Workers must wear a long sleeved shirt with long pants and work boots. Workers must use only butyl rubber or nitrile gloves when mixing or applying this product. Safety goggles are required for eye protection.

Use local exhaust ventilation to maintain worker exposure below TLV. If the airborne concentration poses a health hazard, becomes irritating or exceeds recommended limits, use a NIOSH approved respirator in accordance with OSHA Respirator Protection requirements under 29 CFR 1910.134. Specific type of respirator will depend of the airborne concentration. Filtering face piece or dust mask is not acceptable for use with this product if TLV filtering levels have been exceeded.

Consult the Safety Data Sheet (SDS) for additional information pertaining to this product.

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Parapro Roof Membrane Physical and Mechanical Properties

Property (as installed)	Values / Units	Test Method
Membrane Thickness	90 mils (2.3 mm)	ASTM D5147 - section 6
Peak Load @ 73°F, avg.	70 lbf/in (12.3 kN/m)	ASTM D5147 - section 7
Elongation @ Peak Load, avg.	35%	ASTM D5147 - section 7
Peak Load @ 73°F, avg.	90 lbf/in (15.8 kN/m)	ASTM D412 (dumbbell)
Elongation @ Peak Load, avg.	35%	ASTM D412 (dumbbell)
Shore A Hardness, avg.	81	ASTM D2240
Water Absorption, (Method I) (24h @ 73°F [23°C])	0.8 %	ASTM D570
Water Absorption, (Method II) (48h @ 122°F [50°C])	1.2 %	ASTM D570
Water Vapor Transmission	0.019 perms	ASTM E96
Low Temperature Flexibility	23°F (-5°C)	ASTM D5147- section 12
Dimensional Stability (maximum movement)	0.15 %	ASTM D5147 - section 11
Tear Strength	90 lbf (0.4 kN)	ASTM D5147 - section 8
Reflectance (Parapro White) - Initial	0.85	ASTM C1549
3-year Aged	0.78	
Emittance (Parapro White) - Initial	0.89	ASTM C1371
3-year Aged	0.88	
Solar Reflectance Index (Parapro White) - Initial	107	
3-year Aged	97	

Values in this table are based on testing/evaluation of a 90-mil (2.3 mm) Parapro Roof Membrane reinforced with Pro Fleece.

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Mass and Volume Data for Pro Catalyst Liquid

Pro Catalyst Liquid - net contents per unit			
2.5 kilograms	2.25 liters	2250 milliliters	10 cups

Product	Density (kg per liter)	Liquid Measure (liters per kg)	Liquid Measure (milliliters per kg)
Pro Catalyst Liquid	1.1 kilograms per liter	0.91 liters per kilogram	910 milliliters per kilogram

Pro Catalyst <u>Liquid</u> Mixing Chart Summer Grade Parapro Roof Membrane Resin				
Resin Quantity	Ambient Temperature 68°F to 104°F (20°C to 40°C)		Ambient Temperature 59°F to 68°F (15°C to 20°C)	
	Tablespoons	Cups	Tablespoons	Cups
1 kg (0.72 liter)	2	n/a	4	n/a
10 kg (7.2 liters)	n/a	1	n/a	2
20 kg (14.3 liters)	n/a	2	n/a	4
Substrate temperature range for application of Summer Grade Parapro Roof Membrane resin is 59°F to 122°F (15°C to 50°C)				

Pro Catalyst <u>Liquid</u> Mixing Chart Winter Grade Parapro Roof Membrane Resin						
Resin Quantity	Ambient Temperature 59°F to 68°F (15°C to 20°C)		Ambient Temperature 41°F to 59°F (5°C to 15°C)		Ambient Temperature 23°F to 41°F (-5°C to 5°C)	
	Tablespoons	Cups	Tablespoons	Cups	Tablespoons	Cups
1 kg (0.72 liter)	2	n/a	4	n/a	6	n/a
10 kg (7.2 liters)	n/a	1	n/a	2	n/a	3
20 kg (14.3 liters)	n/a	2	n/a	4	n/a	6
Substrate temperature range for application of Winter Grade Parapro Roof Membrane resin is 23°F to 77°F (-5°C to 25°C)						

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Mass and Volume Data for Pro Catalyst Powder

Pro Catalyst <u>Powder</u> Conversion Chart		
Box	Bags	Tablespoons
1 kg	0.1 kg	0.01 kg
10 (0.1 kg) bags	n/a	0.1 bags
100 Tablespoons	10 Tablespoons	n/a

Pro Catalyst <u>Powder</u> Mixing Chart Summer Grade Parapro Roof Membrane Resin								
The amount of Pro Catalyst Powder used with Summer Grade Resin varies from a minimum of 2% to 4% maximum by weight, depending upon the ambient temperatures as indicated in the following table.								
Resin Quantity	Ambient Temperature 2% Catalyst 68°F to 104°F (20°C to 40°C)				Ambient Temperature 4% Catalyst 59°F to 68°F (15°C to 20°C)			
	g	kg	Tblsp.	0.1-kg Bags	g	kg	Tblsp.	0.1-kg Bags
1 kg (0.72 liter)	20	0.02	2	n/a	40	0.04	4	n/a
10 kg (7.2 liters)	200	0.2	n/a	2	400	0.4	n/a	4
20 kg (14.3 liters)	400	0.4	n/a	4	800	0.8	n/a	8
Substrate temperature range for application of Summer Grade Parapro Roof Membrane Resin is 59°F to 122°F (15°C to 50°C)								

Pro Catalyst <u>Powder</u> Mixing Chart Winter Grade Parapro Roof Membrane Resin												
The amount of Pro Catalyst Powder used with Winter Grade Resin varies from a minimum of 2% to 6% maximum by weight, depending upon the ambient temperatures as indicated in the following table.												
Resin Quantity	Ambient Temperature 2% Catalyst 59°F to 68°F (15°C to 20°C)				Ambient Temperature 4% Catalyst 41°F to 59°F (5°C to 15°C)				Ambient Temperature 6% Catalyst 23°F to 41°F (-5°C to 5°C)			
	g	kg	Tblsp.	0.1-kg Bags	g	kg	Tblsp.	0.1-kg Bags	g	kg	Tblsp.	0.1-kg Bags
1 kg (0.72 liter)	20	0.02	2	n/a	40	0.04	4	n/a	60	0.06	6	n/a
10 kg (7.2 liters)	200	0.2	n/a	2	400	0.4	n/a	4	600	0.6	n/a	6
20 kg (14.3 liters)	400	0.4	n/a	4	800	0.8	n/a	8	1200	1.2	n/a	12
Substrate temperature range for application of Winter Grade Parapro Roof Membrane Resin is 23°F to 77°F (-5°C to 25°C)												

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