

PARAPRO ROOF MEMBRANE RESIN



Commercial Product Data Sheet

Product Description

Parapro Roof Membrane Resin is a high performance multi-component, fast curing, PMMA resin.

Product Uses

Parapro Roof Membrane Resin is the principal component of reinforced Parapro Roof Membrane Systems. This high performance, fast curing PMMA resin is designed for use in roofing applications not subject to pedestrian or vehicular traffic.

Product Approvals

Parapro Roof System 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.

Parapro Roof Systems are listed by Underwriters Laboratories for use in UL_{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.

Color

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

Packaging

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

Coverage Rates

Coverage Rate - Smooth Surfaces

Minimum total coverage:	31 kg/sq (3.3 kg/m ²)
Base Coat (minimum consumption)	19 kg/sq (2.0 kg/m ²)
Top Coat (minimum consumption)	12 kg/sq (1.3 kg/m ²)

Coverage Rate - Granule Surfaces

Minimum total coverage:	40 kg/sq (4.3 kg/m ²)
Base Coat (minimum consumption)	28 kg/sq (3.0 kg/m ²)
Top Coat (minimum consumption)	12 kg/sq (1.3 kg/m ²)

See recommendations for specific applications. Yields 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).

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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.

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

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.

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 chart 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

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Parapro Roof Resin - Summer Grade Pro Catalyst Mixing Chart								
The amount of Pro Catalyst used with Summer Grade Parapro Roof Membrane 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	Summer Grade 2% Catalyst 68°F to 104°F (20°C to 40°C)				Summer Grade 4% Catalyst 59°F to 68°F (15°C to 20°C)			
	g	kg	Tbsp.	0.1-kg Bags	g	kg	Tbsp.	0.1-kg Bags
1.0 kg (0.72 liter)	20	.02	2	n/a	40	.04	4	n/a
5.0 kg (3.6 liter)	100	0.1	10	1	200	0.2	20	2
10.0 kg (7.2 liter)	200	0.2	20	2	400	0.4	40	4
20.0 kg (14.3 liter)	400	0.4	40	4	800	0.8	80	8

Parapro Roof Resin - Winter Grade Pro Catalyst Mixing Chart												
The amount of Pro Catalyst used with Winter Grade Parapro Roof 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	Winter Grade 2% Catalyst 59°F to 68°F (15°C to 20°C)				Winter Grade 4% Catalyst 41°F to 59°F (5°C to 15°C)				Winter Grade 6% Catalyst 23°F to 41°F (-5°C to 5°C)			
	g	kg	Tbsp.	0.1-kg Bags	g	kg	Tbsp.	0.1-kg Bags	g	kg	Tbsp.	0.1-kg Bags
1.0 kg (0.72 liter)	20	0.02	2	n/a	40	0.04	4	n/a	60	0.06	6	n/a
5.0 kg (3.6 liter)	100	0.1	10	1	200	0.2	20	2	300	0.3	30	3
10.0 kg (7.2 liter)	200	0.2	20	2	400	0.4	40	4	600	0.6	60	6
20.0 kg (14.3 liter)	400	0.4	40	4	800	0.8	80	8	1200	1.2	120	12
Substrate temperature range for application of Winter Grade Parapro Roof Resin is 23°F to 77°F (-5°C to 25°C).												

Properties

Property (as installed)	Values / Units	Test Method
Membrane Thickness	90 mils (2.3 mm)	ASTM D 5147 - section 6
Peak Load @ 73°F, avg.	70 lbf/in (12.3 kN/m)	ASTM D 5147 - section 7
Elongation @ Peak Load, avg.	35%	ASTM D 5147 - section 7
Peak Load @ 73°F, avg.	90 lbf/in (15.8 kN/m)	ASTM D 412 (dumbbell)
Elongation @ Peak Load, avg.	35%	ASTM D 412 (dumbbell)
Shore A Hardness, avg.	81	ASTM D 2240
Water Absorption, (Method I) (24h @ 73°F [23°C])	0.8 %	ASTM D 570
Water Absorption, (Method II) (48h @ 122°F [50°C])	1.2 %	ASTM D 570
Low Temperature Flexibility	23°F (-5°C)	ASTM D 5147- section 12
Dimensional Stability (maximum movement)	0.15 %	D 5147 - section 11
Tear Strength	90 lbf (0.4 kN)	ASTM D 5147 - section 8
Reflectance (Parapro White) - Initial	0.85	ASTM C 1549
3-year Aged	0.78	
Emittance (Parapro White) - Initial	0.89	ASTM C 1371
3-year Aged	0.88	
Solar Reflectance Index (Parapro White) - Initial	107	
3-year Aged	97	

Values in this table are based on 90 mil (2.3 mm) thick reinforced Parapro Roof Membrane.

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