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JM PMMA Liquid Membrane

Liquids Application Guide

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Contents

JM PMMA Liquid Membrane System

The JM PMMA Liquid Membrane and Flashing System consists of a two-component, fast-curing, polymethyl-methacrylate (PMMA) resin and a non-woven, chopped strand fabric reinforcement. The system provides an elastomeric, monolithic roofing and waterproofing membrane ideal for plaza decks, balconies, garden roofs, or as a stand-alone membrane.

JM PMMA is also ideal for high-value roofs, roofs with difficult access, small irregular shaped roofs or for roofs with many penetrations. In addition to paving tiles, pedestal systems, and garden roofs, JM PMMA can also be surfaced with a variety of other aggregates, including roofing granules, and white or other roof coatings. This installation guide describes standard procedures for installing a JM PMMA Liquid Membrane System and has been prepared for:

The Roofing Mechanic
JM recognizes that the success and long-term performance of our roofing systems depends upon the personal skill, experience and knowledge of the roofing mechanic. The JM PMMA Liquid Membrane System offers important advantages for roofing crews. Ambient Conditions: Primers, mortars and finish installation: 32°F - 95°F (0°C - 35°C) Membranes 23°F - 95°F (-5°C - 35°C) Important Note: Substrate dew point must always be 5°F above job-site dew point° The roofing system can be installed year-round with proper roof deck preparation and some adjustments for weather conditions.

How to Use This Guide
This guide is divided into five sections:
1. Equipment
2. Roof Preparation
3. Liquid Membrane Installation
4. Liquid Flashing Installation
5. Other Components

This guide is designed for your convenience. These step-by-step instructions should answer your installation questions and help you maintain top-quality craftsmanship when applying a JM PMMA Liquid Membrane System.

1.0 Equipment

The following equipment may be needed to install the PMMA Liquid Membrane System:

Scissors
Snips
1/4" Notched squeegee
Measuring tape
Eye protection
Writing/marking instruments
Solvent-resistant pan or bucket
Masking/painters tape
Trowels
Spiral mixer
Grinders with carbide blades
Chalk line
Gloves
Utility knife
Rags
T-square
Rollers and brushes
Stir sticks
Protective sheeting
Mesh Strainer (for powder catalyst)
Graduated containers (for pour-offs)
Electric drill

2.0 Roof Preparation

Surface Preparation

Proper roof deck preparation is essential to simplify installation and prevent future

conditions which may lead to roof leaks. Mask off, with tape, any areas not intended to receive the JM PMMA Liquid Membrane System.

All surfaces to receive the JM PMMA Liquid Membrane System must be clean, dry, and free of any dirt, dust, debris, rust, oils, oxidation, curing compounds, release agents, gross irregularities, loose, unsound or foreign material such as moss, algae growth, ice, snow, water or any other condition that would inhibit the adhesion of the JM PMMA primer or resin. Applying JM PMMA Liquid Membrane to any substrate that is not completely clean and dry will result in poor adhesion of the membrane to the substrate which may lead to blistering and possible failures. Remove contaminants such as oils with a suitable solvent cleaner. For best results it is required that surfaces such as metals, masonry, concrete and plastics be abraded. If adhesion may be in question, JM recommends performing adhesion testing prior to job start and throughout the application of the JM PMMA system to assure adequate substrate preparation and bond strength.

Substrate Specific Preparation

Concrete and Masonry

New Construction: New structural concrete decks must be dry and free of release agents and curing compounds prior to the installation of JM PMMA Liquid Membrane. Due to the poor adhesion properties of concrete laitance (the weak layer of fine particle accumulation on the surface of fresh concrete due to the upward movement of water used in the concrete mix), JM requires removing any concrete laitance present before installing JM PMMA Liquid Membrane. Properly prepare the concrete and remove any release agents or curing compounds by any of the following methods:

1. Abrasive blasting as per ASTM D 4259-88
2. Shot blast as per ASTM D 4259-88 for horizontal surfaces

Spalls, voids and cavities on vertical or horizontal surfaces must be repaired before application of the JM PMMA membrane. New concrete should be 3,500 psi (25 N/mm2) and cured for 28-days minimum in accordance with ACI-308 or as required to assure a dry substrate. JM PMMA must not be applied over soft or scaling brick or masonry, faulty mortar joints, or walls with broken, damaged or leaking coping.

Re-roofing Application: Existing concrete decks must be clean, dry and free of oil, grease and loose powder or debris. JM requires removing existing concrete laitance, if present, by the suggested methods listed under New Construction.

Moisture: Concrete decks must be dry prior to the application of the JM PMMA Liquid Membrane. While the concrete deck may appear dry on the surface, an abundance of moisture may be present below. A presence of moisture in the deck will result in poor adhesion. JM recommends performing one or more of the following tests to confirm moisture levels in the concrete deck:

1. Moisture Meter
2. Plastic Sheet Method (ASTM D 4263)
3. Dryness Check Via Condensation on Glass found in NRCA Roofing and Waterproofing Manual, Fourth Edition, Volume 2 (pg. 1785)

Metal & Rigid Plastics

Clean and abrade metals and plastics to provide a rough open surface in accordance with the Society for Protective Coatings standard SSPC-SP 3, Power Tool Cleaning. Extend preparation a maximum of 1/8" (3 mm) beyond the termination of the JM PMMA membrane. Abraded surfaces must be primed immediately to prevent surface rust from mositure.

Wood Sheathing

JM recommends clean, dry 3/4" thick C D Exposure 1 rated sheathing or Sanded A-C or B-C Group 1 Exterior sheathing for areas requiring wood substrates. Sheathing panels should be attached to structural members using screw type fasteners only. After applying the proper JM PMMA primer, fill voids between board joints with JM

PMMA Joint/Repair Paste, or, when recommended, cover joints with 1 1/2" minimum duct tape followed by 6" (15cm) wide JM PMMA Resin, prior to applying the JM PMMA system.

Smooth or Granule-Surfaced SBS Modified Bitumen & BUR
All loose granules, dust and dirt shall be removed from the surface of the membrane by broom and/or vacuum.

Framed Wall Construction
Frame walls require a suitable solid backing for proper support of JM PMMA flashings. Suitable sheathing includes heavy gauge sheet metal, plywood, or cement backer board. Common paper-faced gypsum wall board or other gypsum-based products are not acceptable as a substrate for JM PMMA flashing membrane.

Rigid Roof Insulation Board (Polyisocyanurate)
Insulation may be installed over the existing substrate to obtain the desire thermal value however a cement cover board must be installed. Apply the proper PMMA primer based on necessary exposed substrates and fill voids between board joints with PMMA Repair Paste prior to installation of any PMMA system.

Other Substrates
Remove all contaminants as required. Contact JM's Technical Department regarding suitability of substrate and recommendations for surface preparation.

Leveling, Patching & Crack Repair
Before application of a JM PMMA membrane system all joints, cracks, voids, fractures, and indentations in the substrate (vertical and horizontal surfaces) must be repaired. JM recommends using JM PMMA Repair Paste for most substrate repairs. JM PMMA Repair Paste may be used alone for leveling and patching or combined with kiln-dried quartz silica (used as an extender/filler) to create modified repair-mortar for deep repairs. Fill cavities and depressions with JM PMMA Repair Paste as needed to achieve a flat surface. The proper JM PMMA primer should be applied to the substrate prior to application of JM PMMA Repair Paste.

Static (non-moving) Cracks
Confirm crack is non-moving. Remove any existing filler and clean out crack by brushing or with oil-free compressed air. Fill crack with JM PMMA Repair Paste.

Dynamic (moving) Cracks
Confirm that crack is moving. Remove any existing filler and clean out crack by brushing or with oil-free compressed air. Fill crack with JM PMMA Repair Paste and allow to cure. Apply an appropriate width bond breaker tape and cover with minimum 6" (15 cm) wide JM PMMA membrane. For joints requiring bond-breaker widths greater than 1.5" (4 cm), the JM PMMA membrane width must be sized to provide minimum 3" (7.5 cm) coverage on each side of joint.

3.0 Liquid Flashing Installation

Flashings are typically installed before the field. Flashings must be reinforced with scrim and should measure at least 8" up the transition and 4" onto the field. The JM PMMA Flashing membrane system is comprised of a primer, waterproofing resin and fleece reinforcement. Following are instructions regarding the mixing, measuring and application of the flashing system components.

3.1 Liquid Flashing Mixing Instructions
The amount of JM PMMA Catalyst added to JM PMMA Flashing resins and primers varies based on the resin type, resin quantity and temperature. Each resin has different densities, so the volume of each resin will vary slightly for the same weight of measure. JM recommends using a scale to measure each resin component and catalyst when batch mixing.

For all resins, thoroughly mix the entire container of resin for 2-3 minutes before each use, and prior to pouring off resin into a second container if batch mixing. Catalyze only the amount of material that can be used within 10-15 minutes. Add pre-measured catalyst to the resin component, stir for 2-minutes using a slow-speed mechanical agitator or stirring stick and apply to substrate. The amount of catalyst added is based on the weight of the resin used. When a scale is not available, the following chart provides the density and approximate liquid measure for JM PMMA resin components:

JM PMMA Product	Density (g/cm3)	Liquid Measure	
		liters/kg	kg/liter
JM PMMA Primer - All Purpose	1.22	0.82	1.22
JM PMMA Flashing Resin	1.21	0.83	1.21

The following charts can be used to calculate catalyst quantity and approximate working times:

JM PMMA Primer - All Purpose

Catalyst per 10 kg unit			
Ambient Temperature	32°F - 49°F (0°C - 10°C)	50°F - 68°F (10°C - 20°C)	69°F - 95°F (20°C - 35°C)
Catalyst	6 (0.1 kg) packets	4 (0.1 kg) packets	2 (0.1 kg) packets
Pot Life*	15 minutes		
Rain Proof*	30 minutes		
Next Layer*	30 minutes		
Fully Cured*	2 hours		

*all times listed for 68˚F (20˚C) consult data sheet for more information

JM PMMA Flashing Resin - Summer Grade

Catalyst per 12 kg unit		
Ambient Temperature	50°F - 68°F (10°C - 20°C)	68°F - 95°F (20°C - 35°C)
Catalyst	5 (0.1 kg) packets	2.5 (0.1 kg) packets
Pot Life*	15 minutes	
Rain Proof*	30 minutes	
Next Layer*	60 minutes	
Fully Cured*	3 hours	

*all times listed for 68˚F (20˚C) consult data sheet for more information

JM PMMA Flashing Resin - Winter Grade

Catalyst per 12 kg unit			
Ambient Temperature	23°F - 37°F (-5°C - 3°C)	37°F - 50°F (3°C - 10°C)	50°F - 68°F (10°C - 20°C)
Catalyst	7 (0.1 kg) packets	5 (0.1 kg) packets	2.5 (0.1 kg) packets
Pot Life*	20 minutes		
Rain Proof*	45 minutes		
Next Layer*	60 minutes		
Fully Cured*	6 hours		

*all times listed for 68˚F (20˚C) consult data sheet for more information

3.2 Liquid Flashing Primer Installation

The JM PMMA Primer is a semi-flexible combination primer used in details and flashings as primer/sealer pretreatment for concrete, masonry, wood, and asphalt and other substrates as required.

Application
After mixing with catalyst, apply primer to clean and prepared substrate at the required consumption using approved rollers or brushes. The resin should be spread evenly onto the surface and allowed to fully cure before continuing work.

Typical Coverage Rates	
Smooth Substrates	0.037 kg/ft² (0.40 kg/m²)
Fine Grained Substrates	0.046 kg/ft² (0.50 kg/m²)
Rough Substrates	0.074 kg/ft² (0.80 kg/m²)

Gross yield per 1-kg unit is approximately 13.5 ft² (1.25 m²) to 26.9 ft² (2.5 m²). Yields will vary depending upon the smoothness and absorbency of substrate.

The clean and fully cured primer can be coated after a minimum of approximately 30-45 minutes up to a maximum of 6-months. If the surface of the primer becomes dirty or contaminated or left exposed to the elements for more than 12-hours, thoroughly clean the in-place and cured primer with JM PMMA Cleaner. JM PMMA Cleaner should be allowed a minimum of 20-minutes evaporation time after application, and over-coated within 60-minutes of application.

JM PMMA Metal Primer
The JM PMMA Metal Primer serves as a primer for a JM PMMA system. It promotes adhesion for various metal substrates, including drain bowls and edge metal. Prior to application, all substrates must be clean, dry, free of oil, grease, foreign material such as dirt, ice, snow, water or any other condition that would be detrimental to adhesion of resin to the substrate. A grinder is required to abrade the metal - using a wire brush will create a polished finished and inhibit adhesion. The JM PMMA Metal Primer system consists of JM PMMA Metal Primer Base and JM PMMA Metal Primer Activator. Products must be mixed prior to application and use. After mixing, apply resin to clean and prepared substrate at the required consumption using approved rollers or brushes. The resin should be spread evenly onto the surface, with a dry film thickness target of 2-4 mils. Typical coverage rates are 250 ft²/gal (23.2 m²/gal).

Typical Cure Times
- Rain Proof Time- 2 hours
- Resin Application Ready- 3 hours
- Full Cure- 7 hours
- Max Primer Exposure Time- 24 Hours

The times noted above are approximate, provided as a guideline, and may vary. Actual set times and cure should be established in the field based on actual field conditions.

3.3 Liquid Flashing Membrane Installation
JM PMMA Flashing resin is combined with catalyst and JM PMMA Fleece reinforcement to form a monolithic, self-adhering and self-terminating reinforced flashing membrane for a variety of new construction and re-roof applications.

Application
Step 1: After mixing, apply resin to substrate at a rate of 0.14 to 0.31 kg/ft² (1.5 to 3.3 kg/m²) using approved rollers or brushes. The JM PMMA Flashing Resin should be spread evenly onto the surface.

Step 2: Roll JM PMMA Fleece reinforcement directly into the resin, avoiding any folds and wrinkles. Use a roller to work the resin into the fleece, saturating from the bottom up. The fleece should darken in appearance, with no white spots (white spots are indications of unsaturated fleece or lack of adhesion) showing. When required peel back fleece

and apply additional resin onto the substrate, then slowly roll the fleece back into the resin, using care to remove any air pockets. It is important to correct these faults before the resin cures, or additional repairs may be required later.

Step 3: Apply an even coat of resin over top of the in-place fleece at a rate of 0.09 kg/ft^2 (1.0 kg/m^2) using approved rollers. Use caution not to spread resin too thin.

Coverage Rates (approximate)	
Smooth Substrates	0.
Normal Substrates	0.31 kg/ft^2 (3.3 kg/m^2)
Fine Grained Substrates	0.36 kg/ft^2 (3.8 kg/m^2)
Rough Substrates	0.40 kg/ft^2 (4.3 kg/m^2)

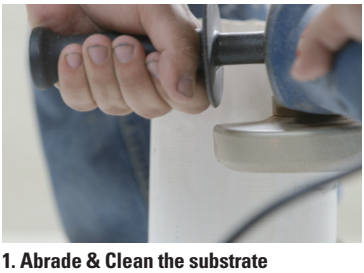
Gross yield per 1-kg unit is approximately 2.5 ft^2 (0.23 m^2) to 4.3 ft^2 (0.40 m^2). Yields will vary depending upon the smoothness of substrate.

Side and End Laps

All side laps and end laps of scrim must be a minimum of 4" (102 mm) overlap with an application of liquid membrane installed between the lap surfaces.

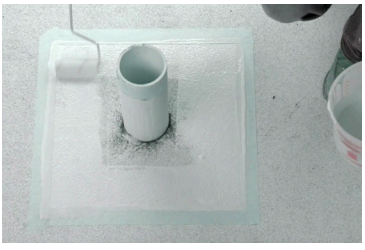
Penetration Flashing Installation

JM PMMA Flashing resin is combined with catalyst and JM PMMA Fleece reinforcement to form a monolithic, self-adhering and self-terminating reinforced penetration flashing membrane for a wide variety of penetrations.

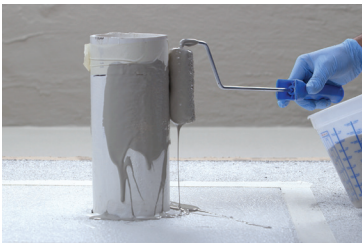


1. Abrade & Clean the substrate

2. Mask & Cut the Scrim



3. Apply Primer



4. Spread the Activated Mixed Resin

Obtain a full coating, without voids, at a rate of 0.14 to 0.31 kg/ft² (or 60 mils thick).

5. Apply the Scrim

Immediately roll the JM PMMA Scrim into this layer while it is still wet.

6. Coat

Use a roller brush to work the activated mix resin into the scrim and the horizontal target patch saturating from the bottom up.

Note: The liquid membrane should extend 1/4" past the scrim in all directions.

7. After applying the 7" x 7" target over the fingers in the field and applying the top of the PMMA, remove masking & let cure.

JM PMMA Detailer

The JM PMMA Detailer is a blend with JM PMMA Catalyst to form a rapid-curing, flexible resin containing chopped fiber reinforcement. It is used in areas where fabric reinforced membranes would be difficult to install.

After properly mixing with catalyst, apply resin to clean and prepared substrate at the required consumption using a trowel, or brush. The resin should be spread evenly onto the surface at a minimum consumption between 0.23 kg/ft² (2.5 kg/m²) to 0.37 kg/ft² (4.0 kg/m²) achieving an approximate 80 - 125 mils (0.08" - 0.125") depth respectively. After troweling the resin in place finish the surface by smoothing out with an approved roller or brush. Typical coverage rates are 5-8 ft²/kg.

3.4 Liquid Flashing Membrane Surfacing

The flashing membrane may be surfaced similar to the liquid membrane with JM PMMA Top Coat or a variety of surfacings. Follow the instructions described in section 3.4 with the following exception. The JM PMMA Top Coat should be mixed with a maximum of 2% of the JM PMMA Thixo to prepare it for use on vertical surfacings. An 8.5kg container of JM PMMA Top Coat would require 200g (0.2kg) of JM PMMA Thixo. Begin by thoroughly mixing the entire drum of the top coat for 2-3 minutes before use. Add JM PMMA Thixo to the resin component, stir for 2 minutes using a slow-speed mechanical agitator. Allow resin to stand approximately 20 minutes before use. Then apply the JM PMMA Top Coat as you would the JM PMMA Flashing Resin using an

approved roller or brush.

4.0 Liquid Membrane Installation

The JM PMMA membrane system is comprised of a primer, waterproofing resin and fleece reinforcement, as well as an optional surfacing. Following are instructions regarding the mixing, measuring and application of the membrane system components.

4.1 Liquid Membrane Mixing Instructions

The amount of JM PMMA Catalyst added to JM PMMA resins and primers varies based on the resin type, resin quantity and temperature. Each resin has different densities, so the volume of each resin will vary slightly for the same weight of measure. JM recommends using a scale to measure each resin component and catalyst when batch mixing.

For all resins, thoroughly mix the entire container of resin for 2-3 minutes before each use, and prior to pouring off resin into a second container if batch mixing. Catalyze only the amount of material that can be used within 10-15 minutes. Add pre-measured catalyst to the resin component, stir for 2-minutes using a slow-speed mechanical agitator (200 - 400 rpm) or stirring stick and apply to substrate. The amount of catalyst added is based on the weight of the resin used. When a scale is not available, the following chart provides the density and approximate liquid measure for JM PMMA resin components:

JM PMMA Product *All Density data was taken directly from supplier data sheets*	**Density (g/cm3)**	**Liquid Measure**	
		liters/kg	**kg/liter**
JM PMMA Primer	1.22	0.82	1.22
JM PMMA Repair Paste	1.30	0.77	1.30
JM PMMA Resin - Summer Grade	1.21	0.83	1.21
JM PMMA Resin - Winter Grade	1.21	0.83	1.21
JM PMMA Top Coat	1.20	0.83	1.20
JM PMMA Textured TOP Coat	1.80	0.56	1.80

The following charts can be used to calculate catalyst quantity and approximate working times:

JM PMMA Primer - All Purpose

Catalyst per 10 kg unit			
Ambient Temperature	32°F - 49°F (0°C - 10°C)	50°F - 68°F (10°C - 20°C)	69°F - 95°F (20°C - 35°C)
Catalyst	6 (0.6 kg) packets	4 (0.4 kg) packets	2 (0.2 kg) packets
Coverage	269 ft² (25 m²)		
Ambient Temperature Range	32°F - 95°F (0°C - 35°C)		
Surface Temperature Range	32°F - 122°F (0°C - 50°C)		
Paste Temperature Range	37°F - 86°F (3°C - 30°C)		
Pot Life*	15 minutes		
Rain Proof*	30 minutes		
Next Layer*	30 minutes		
Fully Cured*	2 hours		

*all times listed for 68˚F (20˚C) consult data sheet for more information

JM PMMA Repair Paste

Catalyst per 15 kg unit

Ambient Temperature	32°F - 49°F (0°C - 10°C)	50°F - 68°F (10°C - 20°C)	69°F - 95°F (20°C - 35°C)
Catalyst	9 (0.9 kg) packets	6 (0.6 kg) packets	3 (0.3 kg) packets
Ambient Temperature Range	32°F - 95°F (0°C - 35°C)		
Surface Temperature Range	32°F - 122°F (0°C - 50°C)		
Paste Temperature Range	37°F - 86°F (3°C - 30°C)		
Pot Life*	20 minutes		
Rain Proof*	30 minutes		
Next Layer*	60 minutes		
Fully Cured*	3 hours		

*all times listed for 68˚F (20˚C) consult data sheet for more information

JM PMMA Field Resin - Summer Grade

Catalyst per 20 kg unit		
Ambient Temperature	50°F - 68°F (10°C - 20°C)	68°F - 95°F (20°C - 35°C)
Catalyst	8 (0.1 kg) packets	4 (0.1 kg) packets
Coverage	70 ft² (6.5 m²) per 20kg bucket	
Ambient Temperature Range	50°F - 95°F (10°C - 35°C)	
Surface Temperature Range	50°F - 122°F (10°C - 50°C)	
Resin Temperature Range	50°F - 86°F (10°C - 30°C)	
Pot Life*	15 minutes	
Rain Proof*	30 minutes	
Next Layer*	60 minutes	
Fully Cured*	3 hours	

*all times listed for 68˚F (20˚C) consult data sheet for more information

JM PMMA Field Resin - Winter Grade

Catalyst per 20 kg unit			
Ambient Temperature	23°F - 37°F (-5°C - 3°C)	37°F - 50°F (3°C - 10°C)	50°F - 68°F (10°C - 20°C)
Catalyst	12 (0.1 kg) packets	8 (0.1 kg) packets	4 (0.1 kg) packets
Coverage	70 ft² (6.5 m²) per 20kg bucket		
Ambient Temperature Range	23°F - 68°F (-5°C - 20°C)		
Surface Temperature Range	23°F - 68°F (-5°C - 20°C)		
Paste Temperature Range	37°F - 86°F (3°C - 30°C)		
Pot Life*	20 minutes		
Rain Proof*	45 minutes		
Next Layer*	60 minutes		
Fully Cured*	6 hours		

*all times listed for 68˚F (20˚C) consult data sheet for more information

JM PMMA Top Coat (Combine with JM PMMA 1.5kg color pack)

Catalyst per 8.5 kg unit

Ambient Temperature	32°F - 50°F (0°C - 10°C)	50°F - 68°F (10°C - 20°C)	68°F - 95°F (20°C - 35°C)
Catalyst	6 (0.6 kg) packets	4 (0.4 kg) packets	2 (0.2 kg) packets
Ambient Temperature Range	32°F - 95°F (0°C - 35°C)		
Surface Temperature Range	32°F - 122°F (0°C - 50°C)		
Paste Temperature Range	37°F - 86°F (3°C - 30°C)		
Pot Life*	15 minutes		
Rain Proof*	30 minutes		
Next Layer*	60 minutes		
Fully Cured*	3 hours		

*all times listed for 68˚F (20˚C) consult data sheet for more information

JM PMMA Textured Top Coat (Combine with JM PMMA 1.5kg color pack)

Catalyst per 13.5 kg unit			
Ambient Temperature	32°F - 50°F (0°C - 10°C)	50°F - 68°F (10°C - 20°C)	68°F - 95°F (20°C - 35°C)
Catalyst	9 (0.9 kg) packets	6 (0.6 kg) packets	3 (0.3 kg) packets
Ambient Temperature Range	32°F - 95°F (0°C - 35°C)		
Surface Temperature Range	32°F - 122°F (0°C - 50°C)		
Paste Temperature Range	37°F - 86°F (3°C - 30°C)		
Pot Life*	15 minutes		
Rain Proof*	45 minutes		
Next Layer*	60 minutes		
Fully Cured*	3 hours		

*all times listed for 68˚F (20˚C) consult data sheet for more information

4.2 Primer Installation

After mixing the catalyst with the JM PMMA Primer, apply the primer to the clean and prepared substrate by spreading evenly on the substrate with an approved roller or brush to obtain a full coverage coating, without voids at a rate consistent with the coverage provided on the product data sheet. Typical coverage rates are as follows:

JM PMMA Primer

Smooth substrates	0.037 kg/ft^2 (0.40 kg/m^2)
Fine grained substrates	0.046 kg/ft^2 (0.50 kg/m^2)
Rough substrates	0.074 kg/ft^2 (0.80 kg/m^2)
Typical coverage rate	25ft^2/kg - 30ft^2/kg

The clean and fully cured primer can be coated with the JM PMMA Resin after a minimum of approximately 30-45 minutes up to a maximum of 6-months. If the surface of the primer becomes dirty or contaminated or left exposed to the elements for more than 12-hours, thoroughly clean the in-place and cured primer with JM PMMA Cleaner. The JM PMMA Cleaner should be allowed a minimum of 20-minutes evaporation time after application, and over-coated within 60-minutes of application.

Board Joints and Seams

If the JM PMMA Liquid Membrane System is being installed over cement board, the joints of the boards need to be covered with JM PMMA Repair Paste or strips of membrane according to the guidelines listed in Section 2, Specific Substrate Preparation. To install the JM PMMA Repair Paste, begin by properly mixing the paste with catalyst. After mixing, apply the paste to clean and prepared substrate at the required consumption using a trowel and/or brush. The paste should be spread evenly onto the surface at a recommended consumption of approximately 0.19 kg/ft^2

(2.0 kg/m²) for each +/-1/32" (1 mm) of depth. After troweling the resin in place finish the surface by smoothing out with an approved roller or brush. This product can also be used to prepare the substrate for the JM PMMA Liquid Membrane System as described in Section 2, Roof Preparation. The same application procedure should be used except where specifically described in Section 2.

OPTION 1:
Joint compound applies more simply; just spread over the seam, filling it.

1. Joint Compound

OR OPTION 2:
With liquid roofing, measure and cut the scrim to cover the seam. Spread liquid roofing on the seam; then work the scrim into the liquid. Aim for a full, void-free coating: 0.21 to 0.45 kg/ft² (approx. 90 mils thick).

1. Measure & Cut the Scrim

2. Spread the Liquid Roofing
Obtain a full coating, without voids, at a rate of 0.14 to 0.31 kg/ft² (or 60 mils thick).

3. Work the Scrim into the Liquid
Then, obtain a full coating, without voids, at a rate of 0.09 kg/ft² (or 30 mils thick).

4.3 Liquid Membrane Installation

Once the primer has been fully cured and the JM PMMA Resin has been properly mixed with catalyst, spread evenly on the substrate with an approved roller, brush or notched squeegee to obtain a full coverage coating, without voids at a rate of 0.14 to 0.31 kg/ft² (1.5 to 3.3 kg/m²). Immediately roll the JM PMMA Scrim into this layer while still wet. Use a roller to work the resin into the fleece, saturating from the bottom up, and apply a supplemental coat of resin as needed directly over the fleece. Note the fleece should darken in appearance, with no white spots showing. White spots are indications of unsaturated fleece or lack of adhesion. It is important to correct these faults before the resin cures. Apply an even coat of resin over top of the in-place fleece at a rate of 0.09 kg/ft² (1.0 kg/m²) using approved rollers. Use caution not to spread resin too thin. The liquid membrane should extend 2" (51 mm) past the scrim in all directions. Allow an additional 1-3 hours before foot traffic. If a surfacing is to be added, the JM PMMA Resin should be allowed to cure for a minimum of one hour prior to the

application of the surfacing.

1. Spread the Activated Mixed Resin

Spread resin evenly on the substrate with an approved roller or brush to obtain a full coating, without voids, at a rate of 0.14 to 0.31 kg/ft^2 (or 60 mils thick).

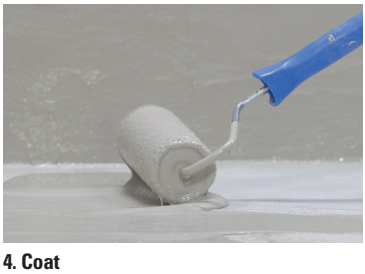
2. Apply the Scrim

Immediately roll the JM PMMA Scrim into this layer while it is still wet.

3. Work the Scrim into the Liquid

Use a roller to work the activated mixed resin into the scrim, saturating from the bottom up. Apply a supplemental coat of resin as needed.

Note: The scrim should darken, without white spots showing. These spots are indications of unsaturated scrim or lack of adhesion. It is important to correct these



4. Coat

Apply an even coat of the activated mixed resin over the top of the in-place scrim at a rate of 0.09 kg/ft^2 (or 30 mils thick) using approved rollers. Use caution not to spread resin too thin.

Note: The liquid membrane should extend 1/4" past the scrim in all directions.

Side and End Laps

All side laps and end laps of scrim must be a minimum of 4" (102 mm) overlap with an application of liquid membrane installed between the lap surfaces.

Joints

Should the liquid membrane system not be able to be installed over the entire roof area in one day, the joint line left at the work stopping point must be clean and straight with the primer extending beyond the resin. When work resumes, wipe the area to be bonded with JM PMMA Cleaner prior to the application of the fresh JM PMMA Resin.

4.4 Surfacing Installation

After the JM PMMA Liquid Membrane has fully cured, multiple surfacing options can be installed.

JM PMMA Top Coat

JM PMMA Top Coat should be applied within 12-hours of the JM PMMA membrane application whenever possible. After properly mixing and catalyzing, apply JM PMMA Top Coat to clean and prepared substrate at the required consumption using approved rollers, brushes or squeegee. On large areas, the resin should be spread evenly onto the surface using a squeegee and back-rolled to remove puddles. Typical coverage rates are 15 - 20 ft^2/kg. If an aggregate is to be installed with the JM PMMA Top Coat, see specific manufacturing guidelines for installation. The typical

coverage rates when applied with aggregates are as follows:

Application	Consumption
0.4 – 0.8mm aggregate	0.06 kg/ft² (0.7 kg/m2)
0.7 – 1.2mm aggregate	0.07 kg/ft² (0.8 kg/m2)

Please note that yields will vary depending upon the selected system along with shape, size, smoothness & absorbency of the aggregate and substrate.

JM PMMA Textured Top Coat

Tape out the area of work in a checkerboard fashion using duct tape or fiber reinforced masking tape. After properly mixing with catalyst, apply JM PMMA Textured Top Coat to clean and prepared substrate at the required consumption using a flat trowel. The resin should be spread evenly onto the surface at a uniform depth. Immediately after spreading the resin, back roll with a clean approved roller pre-wet with JM PMMA Textured Top Coat if additional texture is required. Before resin begins to cure, remove all masking tape. Typical coverage rates are 2 - 4 ft²/kg.

If using a surfacing other than recommended in the application guide, consult with JM Technical prior to installation. Follow all instructions and guidelines for surfacing installation provided by the surfacing manufacturer.

Aggregate

With most aggregate surfacings, an additional layer of JM PMMA Resin needs to be used to apply the surfacing. The fully catalyzed resin should be applied at a minimum consumption of 0.09 kg/ft² (1.0 kg/m²) within 12-hours of the initial application.

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