

Macrylex F98 Pumma

flexible polyurethane—MMA hybrid resin



DESCRIPTION

Macrylex F98 PUMMA is a higher viscosity, 100% reactive, flexible methyl methacrylate polyurethane hybrid resin used as crack isolation or water proofing membrane under various Macrylex Systems or as resilient mortar or joint filler for numerous applications. Macrylex F98 PUMMA resists cracking caused by horizontal substrate movement, providing a crack resistant, resilient surface with superior performance in cold temperature environments. Macrylex F98 PUMMA offers stress relieving properties for floor slabs showing movement and/or vibration. Excellent for use as an intermediate membrane layer or patching mortar in loading docks and ramps, equipment rooms, large animal rooms, activity rooms, automotive and tooling industry, freezers, coolers, bridge decks, roof decks, pedestrian walkways, parking garages, ship decks, pool lines, pool decks, joint repair, food industry, dairies, beverage industry, and numerous other industries and applications.

ADVANTAGES

- Rapid cure with short recoat time (60 min)
- Elongation of 300%
- Reduces noise created by mechanical vibration
- Applied at thickness of 1/16" to 1/4"
- VOC Compliant, Meets USGBC LEED Requirements
- Use over wide temperature range—even below freezing

SUBSTRATE REQUIREMENTS

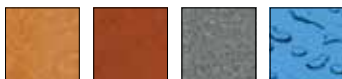
- The substrate must be dry, free of dirt, waxes, curing agents and other foreign materials
- Do not store outside in direct sunlight, storage temperature must be less than 80°F
- On or below grade installation must have an efficient vapor barrier under the slab (min 10-15 mil)
- Moisture vapor transmission must be less than 3 lb per ASTM F1869 and less than 80% RH per ASTM F2170 unless Duraamen moisture mitigation system used
- The odor must be contained and/or ventilated with negative air flow as necessary
- Small enclosed spaces require proper negative air flow ventilation to ensure proper curing.

COMPOSITION

Macrylex F98 PUMMA is a 100% reactive methyl methacrylate polyurethane hybrid resin.

COLOR SELECTION

Macrylex P98 PUMMA is supplied clear (slight haze). Color packs are available for selected colors. Color pack mix ratio is 1-quart pigment per 5 gallons



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SURFACE PREPARATION

Surface Preparation is the most critical portion of any successful high performance flooring system. All substrates must be properly prepared as Outlined in Duraamen's Technical Bulletin #1. In addition, all Macrylex Flooring Systems require a minimum surface profile of 4 or 5 (CSP 4 to 5) as outlined in ICRI Guideline 310.2-1997 formerly G-03732 (available from www.ICRI.org). Work must be performed by trained or experienced contractors or maintenance personnel. Shot blast the substrate to remove laitance and expose surface cracks. Clean out cracks with oil-free compressed air.

MIXING & INSTALLATION

Macrylex F98 PUMMA is typically used in conjunction with fillers and aggregate and requires the addition of Macrylex H00 to start the hardening process. The amount of hardener must be adjusted to the respective surface temperature. At temperatures below 40°F, Macrylex CTA must be added must be used in addition to the amount of hardener used at the 40°F or 30°F level.

Temp (F) of resin, air & surface	Hardener by volume (oz) per gallon of resin	Pot Life (min)	Hardening Time (min)
+30°F	10 oz	25	75
+40°F	9–10 oz	25	70
+50°F	8–9 oz	25	65
+60°F	6–7 oz	20	60
+70°F	5–6 oz	20	50
+80°F–+90°F	5* oz	15	45

* Do not use less than 5 oz of Macrylex Hardener by volume unless confirmed by on-site testing

Macrylex CTA: At temperatures below 40°F, Macrylex CTA, Cold Temperature Accelerator must be used in addition to the amount of hardener used at the 40°F or 30°F level. As a rule of thumb, add 1/2oz by volume per gallon of resin at 39°F to 32°F, up to 2.0oz by volume per gallon at 20°F; increasing the quantity gradually in a consistent linear progression as the temperature decreases. **IMPORTANT NOTE:** *Macrylex CTA MUST be added to the Resin and thoroughly blended BEFORE adding Macrylex Hardener, or hazardous decomposition may occur (violent foaming). Macrylex CTA will cause yellowing of the resin. Therefore, it is advised to use pigmented Macrylex resins to reduce the appearance of yellowing.*

MACRYLEX F98 PUMMA MEMBRANE SYSTEMS

Macrylex F98 PUMMA Membrane Systems are used for elastomeric decking, waterproofing, roof decks, freezer floors, etc. Macrylex F98 PUMMA can be mixed in various formulations using Self-Leveling Filler, PET Filler, or Filler Sand, depending on the applied thickness and intended use. Refer to the formulation guide. Consult Duraamen technical representative for recommendations on the best formula, thickness and systems design to use for any particular project.

FORMULATION GUIDE – MEMBRANE SLURRY

Typical Slurry Formula for 40mil – 125mil Basecoat Membrane (FORM 1)

Product	Weight	Volume
Macrylex F98 PUMMA	8.4 lb	1.0 gallon
Self-leveling Additive	4-5 lb	0.25 to 0.33 gallons
Pigment pack (optional)	N/A	6.4 oz
Macrylex H00	Follow chart	Follow chart

Add hardener to the clear resin and blend; add dry filler powder and mix thoroughly with jiffy mixer. Blend pigment and mix for 1-2 minutes until no lumps are present. Apply mix to the primed surface using a gauge rake or notched trowel. The above mixture will yield approximately 1.15 gallons of slurry.

Coverage – Yield – 1.15 gallons of slurry

1/16"	28-30 s ^q . ft.
1/8"	13-15 s ^q . ft.

The yield of mixed slurry will vary depending on mix design used

Typical Slurry Formula for 125mil – 195mil Basecoat Membrane (FORM 2)

Product	Weight	Volume
Macrylex F98 PUMMA	8.4 lb	1.0 gallon
Self-leveling Additive	7-8 lb	0.50 gallon
Silica Sand 30 – 50 mesh	6-7 lb	0.5 gallons
Pigment pack (optional)	N/A	6.4 oz
Macrylex H00	Follow chart	Follow chart

Add hardener to the clear resin and blend; add dry filler powder and mix thoroughly with jiffy mixer. Blend pigment and mix for 1-2 minutes until no lumps are present. Apply mix to the primed surface using a gauge rake or notched trowel. The above mixture will yield approximately 1.15 gallons of slurry.

Coverage – Yield – 1.15 gallons of slurry

1/16"	36-38 s ^q . ft.
1/8"	17-18 s ^q . ft.
3/16"	13-14 s ^q . ft.

The yield of mixed slurry will vary depending on mix design used

Typical Formula for use as Joint Filler (FORM 3)

Product	Weight	Volume
Macrylex F98 PUMMA	8.4 lb	1.0 gallon
Self-leveling Additive	4-5 lb	0.25-0.33 gallons
Pigment pack (optional)	N/A	6.4 oz
Macrylex H00	Follow chart	Follow chart

Yield = 1.15 gallons of mixed slurry

Add hardener to the clear resin and blend; add pigment pack and filler powder and mix thoroughly with jiffy mixer. Blend for 1-2 minutes until pigment is thoroughly mixed and no lumps from filler

are present. For joint filling, transfer mixed resin to a pourable container or caulk gun. One gallon of Macrylex F98 PUMMA slurry will yield 231 cubic inches, or fill and expansion/isolation joint with dimensions of 1/2" X 1/2" X 77 linear feet. Closed cell backer rod should be used to support bottom of Macrylex P98 PUMMA joint filler.

Typical PET Slurry Formula for 40mil – 125mil Basecoat Membrane (FORM 4)

Product	Weight	Volume
Macrylex F98 PUMMA	8.4 lb	1.0 gallon
PET Filler	6-8 lb	0.75-1.0gallon
Pigment pack (optional)	N/A	6.4 oz
Macrylex H00	Follow chart	Follow chart

Add hardener to the clear resin and blend; add PET filler and mix thoroughly with jiffy mixer. Blend pigment and mix for 1-2 minutes until no lumps are present. Apply mix to the primed surface using a gauge rake or notched trowel. The above mixture will yield approximately 1.15 gallons of slurry.

Coverage – Yield – 1.15 gallons of slurry

1/16"	30-38 s ^q . ft.
1/8"	15-18 s ^q . ft.

The yield of mixed slurry will vary depending on mix design used

MACRYLEX F98 PUMMA TROWELED MORTAR SYSTEM

Macrylex F98 PUMMA mortar system is used for patching damaged concrete or asphalt in highways, bridge decks, pedestrian decks/walkways, roof decks, freezer floors, etc. Macrylex F98 PUMMA can be mixed in various formulations using blended mortar silica aggregate and per gravel or other large aggregate for thicker applications. Macrylex F98 PUMMA Mortar System may require a sealer such as Macrylex S28 or Macrylex S26, depending on expected service conditions. Consult with Duraamen Technical Representative for recommendations on the best formula, thickness and system design to use for any particular project.

FORMULATION GUIDE – TROWELED MORTAR

Typical Batch Formula with Mortar Aggregate

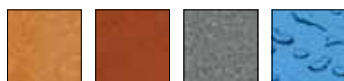
Product	% Parts of Wt.	Weight	Volume
Macrylex F98 PUMMA	14.0	8.4 lb	1.0 gallon
Blended Mortar Aggregate	85.0	50 lb	3.25 gallons
Pigment pack (optional)	N/A	N/A	6.4 oz
Macrylex H00	Varies with temp.	Varies with temp.	Varies with temp.

Yield*: ±3.0 gallons Mortar (0.4ft³)

Coverage – Yield – ±3.0 gallons Mortar (0.4ft³)

1/18"	35 s ^q . ft.
3/16"	25 s ^q . ft.
1/4"	18 s ^q . ft.
1/2"	9 s ^q . ft.

The yield of mixed slurry will vary depending on mix design used



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IMPORTANT: Mortar mix design **MUST** yield a resin-rich mortar with pourable consistency, which has a resin rich surface after troweling. A mortar with a resin-lean, dry consistency may have cure problems.

The above mix design formulation permits installation up to 2.5 inches in one placement. For thickness greater than 1/2", additional aggregate may be added to reduce the resin content and lower the shrinkage. The addition up to 75% additional aggregate allows for installation of up to 5 inches in one placement.

**Addition of Aggregate for Greater than 1/2" thickness.
Additional Aggregate per gallon of Resin**

Thickness of Placement	Aggregate Size	Added Weight %	Weight	Volume	Yield
< 1/2"	-	-	-	-	0.4ft ³
1/2"-1"	1/8" X 1/16"	25%	12.0 lb	0.9gal	0.49ft ³
1"-2"	1/16" X 3/8"	50%	24.0 lb	1.8gal	0.57ft ³
> 2"	3/8" x 5/8"	75%	36.0 lb	2.7gal	0.63ft ³

APPLICATION – TROWELED MORTAR

Macrylex F98 PUMMA and hardener powder are mixed and blended with the blended mortar aggregate for 3 minutes until no lumps are present. Add the additional aggregates to extend the mortar if needed.

IMPORTANT: Mortar mix design **MUST** yield a resin-rich mortar, pourable consistency, which has a resin-rich surface after troweling. Apply mortar to the primed surface using a trowel. If excessive resin forms on the surface of the mortar while troweling, it is optional to lightly broadcast 20 mesh silica sand into the resin. A mortar with a resin-lean, dry consistency may have cure problems, resulting in isolated sticky areas that do not cure completely. Any areas that do not cure hard must be removed, spot primed, and replaced with resin rich mortar before application of sealer (if used). Macrylex F98 PUMMA mortar may require a sealer suitable for the intended application.

Physical Properties – Resin/System

% Reactive	100%, Zero VOC
Working Life, 50°F–70°F	15-25 minutes, will vary with temp. & amount of hardener
Recoat Time	55-75 minutes
Viscosity, cps	600–800cps
Weight per gallon	8.4 lb
Tensile Strength	250psi
Elongation at break	300% resin, 100% filled mortar

WARRANTY

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CLEAN UP

Clean tools and equipment with Macrylex 01 Monomer, lacquer thinner or MEK. Consult MSDS for safety and health precautions.

AVAILABILITY

Duraamen Products are available throughout United States and also Worldwide. Please contact us info@duraamen.com or visit www.duraamen.com for latest information.

STORAGE

Store in a cold and dry place, below 80°F, out of direct sunlight. Do not store near open flame or food. Shelf life is 6 months in the original unopened containers. After extended storage additives and fillers may separate. It should be inspected for any visible signs of settlement, polymerization, or paraffin coagulation (clumps, strands). Thoroughly mix pails or drums (use a drum mixer, do not rely on rolling the drum on the floor) and pour into new containers to inspect resin before use.

HELPFUL HINTS

Adequate cross ventilation should be provided. Good ventilation during the processing ensures a good cross linking and hardening. Read, understand and follow SDS instructions prior to use. Use only as directed. **DO NOT APPLY** if the substrate and/or material temperature is above 90°F. **DO NOT APPLY** unless prepared for very short working time and possible roller marks.

