



Epoxy &  
Polyurethane  
Manufacture and  
Research

## TECHNICAL BULLETIN

### Mighty Seal™



### Description

Mighty Seal™ is a high performance single component, gunable, urethane modified acrylic sealant. Mighty Seal™ is formulated to eliminate yellowing, shiners and reduces dirt pick up. Mighty Seal™ gun grade is ready to use and requires no priming to bond to most substrates. Mighty Seal™ is durable, has superior adhesion with 800% elongation and 50% total joint movement. It forms a flexible, airtight, water resistant seal offering exceptional protection from weather. Once cured the bead is mildew resistant, is UV stable and will not discolor.

### Performance

Mighty Seal™ exceeds the following:  
ASTM C-920 Grade NS, Class 25  
ASTM C-834, Type OP, Grade - 18°C  
Fed Spec TTS-00230C, Type S Class A  
AAMA 808.3  
Spans up to 2" joint in properly designed joints.

**Applications** - Will adhere to most substrates (Exterior above grade) including:

- Window & Door Installation
- Siding-Wood, Vinyl, Aluminum
- Paraphets
- Curtain Wall Construction
- Concrete
- Wood
- Galvanized
- Expansion Joints
- Thresholds
- Paintable with acrylics and Elastomeric coatings
- LOW VOC <exempt solvent 1.5%
- May also be used for interior applications including baseboards, crown molding, counters, etc.
- Trim
- Facia
- Stucco
- Precast Units
- Masonry
- Cement Board
- Aluminum
- Suitable for all climates
- Clean up with soap & water

### Preparation

Decide what size bead of caulk is needed for your job. Keeping in mind the size bead needed, cut nozzle at 45° angle. When applying caulk, pull the caulking gun towards you rather than pushing it away. Cured bead should be between 1/8" to 1/2". Use a closed cell foam backer rod or bond breaker tape for joints that exceed 1/2" in depth to avoid 3 point adhesion. For best results the surface for applying the sealant must be clean and dry. Remove all contaminants (dirt, dust, oil, mildew, loose paint, old caulk). Only apply when surface and air temperatures will remain above 40°F. Do not apply on surfaces that are above -120°F or when rain is expected. It is the user's responsibility to check for adhesion of the cured sealant on typical joints at the job site before and during application.

### Painting

In most cases Mighty Seal™ is considered a non priming sealant. Bare surfaces should be primed before caulking. Follow directions on the paint or primer for surface preparation before priming for best results. Mighty Seal™ may be painted after the product has been allowed to cure for 4 to 6 hours. It is compatible with most water based coatings & paints such as acrylics, elastomeric coatings & oil based paints. When using semi-transparent/solid stains or oil based paints, always test in a small inconspicuous area.



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**Application Notes**

Mighty Seal™ Clear guns out milky white & will clear up in 2- 3 days.

Shrinkage - All sealants will have some normal shrinkage, including Mighty Seal™. After application & “tooling” of Mighty Seal™ flat, it will have some shrinkage & be concave in shape. A concave shape is a good thing since it helps with tension and compression joint forces. Flat concave joints may require additional applications to fill in the joint for a flat appearance. Joints that have been filled in may require additional dry time before painting.

**Joint Application**

A properly designed joint will ensure a long lasting and weather tight seal. U-shaped joints should have the proper size of backer rod (closed cell) or bond breaker tape used to prevent 3-point adhesion. The use of backer rod or bond breaker tape should be used on joints that exceed 1/2” in depth to prevent 3-point adhesion. The applied sealant should reach the deepest point of the joint. Excess sealant can be removed using clean rag and water. Tooling the sealant flush with a putty knife will give a nice clean looking joint with a correct bead shape and excellent adhesion. Joints that have a 90° angle can be tooled with a moistened rag to a minimum bead size of 3/8”.

**Cure Time**

75°F (24°C) with 50% relative humidity with a joint size of 1/2” X 1/4” is 7 – 14 days. Cure time can vary with temperature and humidity. Lower temperatures and humidity will extend the curing times.

**Clean Up & Storage**

Mighty Seal™ can be easily cleaned up with soap & water

Cover opened tubes of Mighty Seal™ tightly with clear plastic wrap. Make sure tube is tightly sealed. If exposed to air Mighty Seal™ will start curing.

Store tubes of Mighty Seal™ in a cool, dry place. Avoid high moisture and temperature extremes. Keep tubes from freezing.

**Performance**

Mighty Seal™ has 38% better adhesion versus a competitive product. Mighty Seal™ forms an exceptional, flexible weather tight seal offering protection from extreme conditions.

Mechanical/Tensile Properties and Elongation	Formula: Mighty Seal™
<b>Tensile Properties Cure: 7 days @ 70°F/21°C</b>	<b>Value</b>
Stress @ 25% Elongation (psi)	10± 1
Stress @ 50% Elongation (psi)	23± 1
Stress @ 100% Elongation (psi)	44± 2
Maximum Stress (psi)	209± 2
Elongation to Break (%)	1000± 44
Elongation @ Max Stress (%)	892± 10

Mighty Seal™ - superior adhesion, 800% elongation, 500/0 total joint movement. Cured bead is mildew and UV resistant.



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## Physical Characteristics

Property	Value
VOC Content	Non-Chemically Curing Compound <1.5% Less Exempt Solvents
Size	Plastic Tube 10.1 fl. oz. (299ml)
Coverage (@ 10.1 fl oz)	=123.5 linear ft. @ a 1/8" bead =53 linear ft. @ a 3/16" bead =31 linear ft. @ a 1/4" bead =7.74 linear ft. @ a 1/2" bead
Elongation	800%
Dynamic Joint Movement	Approximately + - 25% (10 cycles @ -15)
Service Temp	-40°F to 180°F
Freeze Thaw Stability	Passes 10 Cycles @ 0°F
Total Joint Movement	50%
Service Range	-40°F to 180°F
Application Range	>40°F
Surface Temperature	<120°F
Tensile Properties Cured Sample	Shore "A" Hardness 16-20 after 21 day cure.
Maximum Stress (psi)	152 ± 5
Elongation to break	1000% ± 44
Solids by Weight	Clear 69%, Colors 60%
Tensile Properties	50% stretch recovered approximately 100% in less than 1 minute; 100% stretch recovered approximately 100% in less than 1 minute.
Max Temp Application	Air temp 95° and substrate less than 120°F
Applications	Interior / Exterior
Warranty	Lifetime Performance
Shelf Life	24 months when stored at 50°F to 80°F
Odor	Mild Sweet Acrylic
Tooling Time	15 Minutes
Tack Free Time	60 Minutes
Full cure	7-14 Days
Clean Up	Soap & Water
Colors	White, Clear*, Almond & Limestone Gray *Clear guns out milky white & will clear up in 2- 3 days. Non-yellowing
Vehicle	Proprietary Urethane/Modified Acrylic Blend (Siliconized)
Solids	Approximately 70%
Weight per Gallon	9.3 ± 0.5



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## Adhesion

Substrate	Value (PLI)
Steel	40
Glass	30
Aluminum	33
ASTM Cement	30
Vinyl	15
White Shelving	5
Pine	28
Pressure Treated Lumber	18
Wood	50
Cedar (Rough Sawn)	18
Cedar (Smooth)	40
Galvanized Steel	40

**Contact EPMAR for any additional application information.**

## Warranty

The following warranty is made in lieu of all other warranties, either expressed or implied. This product is manufactured of selected raw materials by skilled technicians. Neither seller nor manufacturer has any knowledge or control concerning the purchaser's use of this product and no warranty is made as to the results of any use. The only obligation of either seller or manufacturer shall be to replace any quantity of this product, which is proved to be defective. Any claim of defective product must be received in writing within one (1) year from date of shipment. Neither seller nor manufacturer assumes any liability for injury, loss, or damage resulting from use of this product.

**Service is part of our formula**

## Epmar Corporation

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