

3M™ Marine Grade Silicone Sealant:

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Technical Data

October 2014

Product Description

A mildew resistant, non-sagging, moisture curing silicone rubber sealant for above the waterline applications which remains flexible with excellent resistance to the marine environment. Adheres to bare and painted metal, glass, fiberglass, non-oily woods and many plastics and abraded rubber.

Features/Advantages

- Mildew resistant
- Flexible polymer
- Non-shrinking
- Non-sagging
- One component cure
- Excellent weathering resistance
- High temperature resistant
- Permanently elastic

Technical Data

Note: The following technical information and data should be considered representative or typical only and should not be used for specification purposes.

Properties	3M™ Marine Grade Silicone Sealant
Tack-Free Time @ 73°F and 50% RH	5-10 minutes
Rate of Cure @ 73°F and 50% RH	1/8" (3 mm) per 24 hour
Color	White, Clear
Tensile Strength (ASTM D412)	220 psi (1.5 MPa)
Elongation at Break (ASTM D412)	> 350%
Service Temperature	-40°F - 190°F (-40°C - 88°C)
Density (lb/gal, appx.)	8.7
Consistency	Caulkable, non-sag paste
Solids Content (Appx.)	100%

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Typical Properties of 3M™ Marine Grade Silicone Sealant

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Overlap Shear Strength*

One inch (2.54 cm) overlap specimens at 0.093 inch (0.2362 cm) thickness. Samples cured at 70°F (21°C), 50% Relative Humidity.

Substrate	Strength psi (kg/cm ²)	Failure Mode
Fir	50 (3.5)	Cohesive
Teak	30 (2.1)	Adhesive
Pine	60 (4.2)	Adhesive
Oak	70 (4.9)	Adhesive
Maple	50 (3.5)	Adhesive
Mahogany	50 (3.5)	Adhesive
Stainless Steel	60 (4.2)	Adhesive
Aluminum	70 (4.9)	Adhesive
Glass	60 (4.2)	Cohesive
ABS	90 (6.3)	Cohesive
Acrylic	10 (0.7)	Adhesive
Polycarbonate	25 (1.7)	Adhesive
Fiber-Reinforced Plastic**	90 (6.3)	Cohesive**

180-Degree Peel Strength*

One inch (2.54 cm) wide specimens on canvas. Samples cured at 70°F (21°C), 50% Relative Humidity.

Substrate	Strength lb/in	Failure Mode
Pine	7	Adhesive
Oak	7	Adhesive
Mahogany	6	Adhesive
Aluminum	8	Adhesive
Acrylic	0	Adhesive
Polycarbonate	0	Adhesive
Fiber-Reinforced Plastic**	10	Adhesive**

* Strength values are approximate. Adhesion tests should always be performed on the specific substrates to be used in application.

** Resins used in fiber reinforced plastics often vary. To ensure strong bond, adhesion tests should always be performed on the specific FRP used in application.

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Directions for Use

Surface Preparation:

There are waxes, coatings, sealers, greases, oils and other contaminants used in the marine industry, making it very important to clean all surfaces before applying 3M™ Marine Grade Silicone Sealant. Recommended procedures include cleaning with 3M™ General Purpose Adhesive Cleaner* 08984. Abrading the surface with 180- to 200-grit abrasive *before* cleaning will enhance the bond strength.

Cut the plastic nozzle tip to the desired bead size. Puncture the seal in nozzle end of the cartridge and screw the plastic nozzle in place. Remove the bottom end seal of cartridge and place the cartridge in a caulk gun dispenser. Apply Marine Grade Silicone Sealant on the part to be sealed or bonded. Position parts and tool material to desired appearance. Tooling of adhesive can be accomplished by using a tongue depressor. If a finger is used, rubber gloves are recommended. Remove excess with General Purpose Adhesive Cleaner 08984 or suitable solvent.

***When using solvents, use in a well ventilated area. Extinguish all sources of ignition in the work area and observe product directions for use and precautionary measures. Refer to product label and MSDS for further precautions. Always pre-test solvent to ensure it is compatible with substrates.**

Local and federal air quality regulations may regulate or prohibit the use of these products or surface preparation and cleanup materials. Consult local and federal air quality regulations before using these products.

Note: Alcohol will interfere with the curing process and extra care must be taken when using alcohol as a cleaning solvent to prevent any contact with the sealant.

Primer:

Use of a primer is an extra step and cost and will depend on the final end use. Using primer can improve the corrosion resistance of certain metals as well as improve the durability of the bond when exposed to high humidity conditions. Pre-testing for adhesion is suggested to determine if a primer is needed. Contact your 3M Technical Service representative for primer recommendation and application advice.

Applications:

3M™ Marine Grade Silicone Sealant is an excellent sealant for above the waterline applications sealing woods, plastics, or metals used in the marine industry. If a permanent or semi-permanent bond is desired, use 3M™ Marine Adhesive Sealant 5200 or 3M™ Marine Adhesive Sealant 4200.

Limitations :

- Alcohol should not be used in preparation for bonding as it will interfere with the curing process, causing the adhesive to fail.
- Due to the decreased value in bond strength at elevated temperatures use of this product is not recommended above 190°F (88°C).
- Do not apply at temperatures below 40°F (4°C) or on frost covered surfaces. Do not apply at surface temperatures above 100°F (38°C).
- Sealant should be used within 24 hours after inner seal is punctured, as product will start to cure in the cartridge and nozzle.
- Cannot be painted.
- Marine Grade Silicone Sealant is not recommended for use as a teak deck seam sealer. Extended exposure to chemicals (teak cleaners, oxalic acid, gasoline, strong solvents and other harsh chemicals) may cause permanent softening of the sealant.

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- Marine Grade Silicone Sealant is not recommended for the installation of glass, polycarbonate, or acrylic windows that are not also mechanically fastened.
- Do not use with electronic circuitry. Acetic acid liberated during cure may corrode electronic circuitry.

Cleanup:

For cleaning 3M™ Marine Adhesive Sealant 5200 Fast Cure before it is cured, use a dry cloth to remove the majority of sealant, followed by a cloth damp with 3M™ General Purpose Adhesive Cleaner 08984. Cured material can be removed mechanically with a knife, razor blade, piano wire, or sanding device.

Storage	Store the product in the original unopened containers between 60°F (15C) and 80°F (27C).
Shelf Life	When stored at recommended conditions, the shelf life of cartridges and sausage packs is 36 months from the date of manufacture.
Precautionary Information	Refer to Product Label and Material Safety Data Sheet for health and safety information before using this product. For additional health and safety information, call 1-800-364-3577 or (651) 737-6501.
Technical Information	The technical information, recommendations and other statements contained in this document are based upon tests or experience that 3M believes are reliable, but the accuracy or completeness of such information is not guaranteed.
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This Industrial Adhesives and Tapes Division product was manufactured under a 3M quality system registered to ISO 9001 standards.



Industrial Adhesives and Tapes Division

3M Center, Building 225-3S-06
St. Paul, MN 55144-1000
800-362-3550 • 877-369-2923 (Fax)
www.3m.com/sealants



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