Marine Adhesive/Sealant 5200 (Tan)

06501 • 21450

Technical Data **February, 2007**

Product Description

3M™ Marine Adhesive/Sealant 5200 (Tan) is a one-part polyurethane that chemically reacts with moisture to deliver strong, flexible bonds. It has excellent adhesion to wood gel coat and fiberglass. It forms a watertight, weather-resistant seal on joints and boat hardware, above and below the waterline. In addition, its flexibility allows for dissipation of stress caused by shock, vibration, swelling or shrinking.

Product Construction

3M™ Marine Adhesive/Sealant 5200 (Tan) 06501	10 fl. oz. cartridge (295 ml) - Tan
3M™ Marine Adhesive/Sealant 5200 (Tan) 21450	5 gal. pail (18.93 L) - Tan

Features

- Tough/flexible polyurethane polymer.
- Non-shrinking.
- One-part moisture cure.
- Long working time.

Typical Physical Properties

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

Base:	Polyurethane
Density lbs/Gallon (Approx.):	11.1 lbs/gallon
Color:	Tan
Solids Content (Approx.)	99%
Consistency:	Medium paste
Service Temperature:	-40°F to 190°F (-40°C to 88°C)
Shore A Hardness (cured):	58
Coverage (10 oz.):	1/8 inch (0.3175 cm) bead = 120 lineal feet (36.6 m)

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Performance Properties

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Tensile, Elongation, and effect of water submersion:

A 1/8 inch (0.3175 cm) dumbbell specimen with a 1/8 inch (0.3175 cm) square cross section was tested at 2.0 inches/minute (5.08 cm/minute). All samples tested at 50% relative humidity and 70°F (21°C).

Environmental Conditions	Tensile Strength psi (kg/cm²)	Elongation (%)
50% R.H. / 70°F (21°C)	885 (62.2)	645

Overlap Shear Strength:

One inch (2.54 cm) overlap specimens (0.093 inch [0.2362 cm] thickness). Samples cured at 70°F (21°C), 50% relative humidity.

Substrate	psi	kg/cm²
Wood(s):		
Teak	499	35.1
Pine	684	48.1
Oak	642	45.1
Maple	706	49.6
Fir	589	41.4
Mahogany	583	41.0
Metal(s):		
Steel	381	26.8
Stainless Steel	203	14.3
Aluminum	173	12.2
Brass	181	12.7
Bronze	203	14.3
Copper	214	15.0
Lead	74	5.2
Zinc (Galvanized)	213	15.0
Plastics/Polymers:		
Fiberglass	376	26.4
Gel Coat	388	27.3
Acrylic	169	11.9
Nylon	124	8.7
ABS	248	17.4
Polypropylene	77	5.4
Polyethylene	48	3.4

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Application Information

Directions for Use

Surface Preparation:
There are waxes, coatings, sealants, grease, oil and other contaminants used in the marine industry, making it very important to clean all surfaces to be bonded before applying 3M™ Marine Adhesive/Sealant 5200. Recommended procedures include cleaning with 3M™ General Purpose Adhesive Cleaner 08984.*****

Application of Adhesive Sealant:
Abrading the surfaces with a 180 grit to 220 grit abrasive, and subsequently wiping off residue, will enhance the bond strength. Cut tip of the nozzle to desired bead size. Puncture seal inside the threaded nozzle end and screw on nozzle. If using a 10 fl. oz. cartridge, remove the bottom and seal and place the cartridge in a caulk gun. Apply 3M marine adhesive/sealant 5200 to the seam or part to be bonded. Position parts. Tool material to desired appearance. Remove excess material with 3M general purpose adhesive cleaner 08984.*****

Cure:

Cure	Relative Humidity	Temperature	Time	Cure Depth
Open Time	50%	70°F (21°C)	5 hours	N/A
Open Time	90%	90°F (32°C)	1.5 hours	N/A
Full Cure	50%	70°F (21°C)	2 days	1/8 inch (0.3175 cm)

Cleanup:
For cleaning 3M marine adhesive/sealant 5200 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,***** toluene or acetone. Cured 3M marine adhesive/sealant 5200 can be removed mechanically with a knife, razor blade, piano wire or sanding.

***Note:** When using solvents, extinguish all ignition sources, including pilot lights, and follow the manufacturer's precautions and directions for use.

Limitations:

- ***Alcohol should not be used in preparation for bonding as it will stop the curing process.***
- *If painting on top of the sealant, always test to make sure there are no incompatibilities between the paint and the 3M marine adhesive/sealant 5200. Paints almost always crack on top of the sealant due to flexing in the joint.*
- *Heat resistance - Due to the decreased value in bond strength at elevated temperatures, we do not recommend use of this product 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).*
- *3M marine adhesive/sealant 5200 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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Application Information *(continued)*

Limitations: *(continued)*

- *3M™ Marine Adhesive/Sealant 5200 is not recommended for the installation of glass, polycarbonate or acrylic windows that are not also mechanically fastened with a system designed by the manufacturer. Inconsistent adhesion of these unprimed substrates, specific design of the window, and movement due to thermal expansion and flexing, may cause application failure. It is strongly recommended that the customer contact the window/port light/hatch manufacturer for recommendations on proper sealing procedures.*
- *When using 3M marine adhesive/sealant 5200 with metals, it may be necessary to prime the surface to achieve adequate adhesion and durability of the bond. 3M™ Scotch-Weld™ Structural Adhesive Primer EC-1945 B/A may be used for priming of most metals.*

Applications

Typical bonding and sealing applications include:

- Fiberglass deck to fiberglass hull
- Wood to fiberglass
- Porthole frames
- Deck fittings
- Moldings
- Trunk joints
- Between struts and planking
- Stern joints and hull planking

Sealing of:

- Some plastics (test before assembly)
- Glass
- Metals

Structural bonding and sealing of:

- Wood
- Fiberglass
- Gel coat
- Primed metal

Storage

Store product at 60-80°F (16-27°C) for maximum storage life. Higher temperatures can reduce normal storage life. Lower temperatures can cause increased viscosity of a temporary nature. Rotate stock on a “first in-first out” basis.

Shelf Life

When stored at the recommended conditions in the original, unopened container this product has a shelf life of 24 months from date of shipment.

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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.

Product Use

All statements, technical information and recommendations contained in this document are based upon tests or experience that 3M believes are reliable. However, many factors beyond 3M's control can affect the use and performance of a 3M product in a particular application, including the conditions under which the product is used and the time and environmental conditions in which the product is expected to perform. Since these factors are uniquely within the user's knowledge and control, it is essential that the user evaluate the 3M product to determine whether it is fit for a particular purpose and suitable for the user's method of application.

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ISO 9001:2000

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