

Technical Data Sheet

3M™ Marine Adhesive Sealant 5200:

Product Description

3M™ Marine Adhesive Sealant 5200 is a one-part polyurethane that chemically reacts with moisture to deliver strong, flexible bonds. It has excellent adhesion to wood, gelcoat, 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 Features

- Tough/flexible polyurethane polymer
- One component, moisture curing
- Long working time
- Bonds dissimilar materials
- Non-shrinking
- Adheres to a wide variety of substrates

Technical Information Note

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



Typical Physical Properties

Property	Values	Additional Information
Solids Content by Weight	97 %	
Color	White Black Mahogany	

Typical Uncured Physical Properties


Property	Values	Additional Information
Density	11.3 lb/gal	
Consistency	Caulkable, non-sag paste	

Typical Mixed Physical Properties








Property	Values	Additional Information
Tack Free Time	4 hr	View 
Test Condition: @ 73°F(23°C) and 90% RH		
Tack Free Time	12 hr	View 

Test Condition: Room Temperature

Typical Cured Characteristics

Property	Values	Additional Information
Shore A Hardness	68	View 
Test Method: ASTM C661		

Typical Performance Characteristics

Property	Values	Additional Information
Tensile Strength	4.8 MPa	View 
Test Method: ASTM D412		
Tensile Strength	700 lb/in²	View 
Test Method: ASTM D412		
Long Term Temp C	90 °C	View 
Test Condition: Long Term (day, weeks)		
Minimum Long Term Temperature Resistance	-40 °C	View 
Test Condition: Long Term (day, weeks)		
Long Term Temp F	190 °F	View 
Test Condition: Long Term (day, weeks)		
Minimum Long Term Temperature Resistance	-40 °F	View 
Test Condition: Long Term (day, weeks)		
Overlap Shear Strength	35 kg/cm²	View 
Temp C: 23C Temp F: 72F Substrate: Teak		

Notes: 1in overlap specimens 0.093in thick. Cohesive – Adhesive/Sealant fails before adhesive/sealant releases from substrate. Desired failure mode. Adhesive Failure – Adhesive/Sealant releases from substrate.

Overlap Shear Strength	500 lb/in²	View	^
Temp C: 23C Temp F: 72F Substrate: Teak Notes: 1in overlap specimens 0.093in thick. Cohesive – Adhesive/Sealant fails before adhesive/sealant releases from substrate. Desired failure mode. Adhesive Failure – Adhesive/Sealant releases from substrate.			

Overlap Shear Strength	48 kg/cm²	View	^
Temp C: 23C Temp F: 72F Substrate: Pine Notes: 1in overlap specimens 0.093in thick. Cohesive – Adhesive/Sealant fails before adhesive/sealant releases from substrate. Desired failure mode. Adhesive Failure – Adhesive/Sealant releases from substrate.			

Overlap Shear Strength	680 lb/in²	View	^
Temp C: 23C Temp F: 72F Substrate: Pine Notes: 1in overlap specimens 0.093in thick. Cohesive – Adhesive/Sealant fails before adhesive/sealant releases from substrate. Desired failure mode. Adhesive Failure – Adhesive/Sealant releases from substrate.			

Overlap Shear Strength	39 kg/cm²	View	^
Temp C: 23C Temp F: 72F Substrate: Oak Notes: 1in overlap specimens 0.093in thick. Cohesive – Adhesive/Sealant fails before adhesive/sealant releases from substrate. Desired failure mode. Adhesive Failure – Adhesive/Sealant releases from substrate.			

Overlap Shear Strength	545 lb/in²	View	^
Temp C: 23C Temp F: 72F Substrate: Oak Notes: 1in overlap specimens 0.093in thick. Cohesive – Adhesive/Sealant fails before adhesive/sealant releases from substrate. Desired failure mode. Adhesive Failure – Adhesive/Sealant releases from substrate.			


Overlap Shear Strength	46 kg/cm²	View	^
Temp C: 23C Temp F: 72F Substrate: Maple Notes: 1in overlap specimens 0.093in thick. Cohesive – Adhesive/Sealant fails before adhesive/sealant releases from substrate. Desired failure mode. Adhesive Failure – Adhesive/Sealant releases from substrate.			


Overlap Shear Strength	655 lb/in²	View	^
Temp C: 23C Temp F: 72F Substrate: Maple Notes: 1in overlap specimens 0.093in thick. Cohesive – Adhesive/Sealant fails before adhesive/sealant releases from substrate. Desired failure mode. Adhesive Failure – Adhesive/Sealant releases from substrate.			


Overlap Shear Strength	49 kg/cm²	View	^
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Temp C: 23C
Temp F: 72F
Substrate: Fir


Notes: 1in overlap specimens 0.093in thick. Cohesive – Adhesive/Sealant fails before adhesive/sealant releases from substrate. Desired failure mode. Adhesive Failure – Adhesive/Sealant releases from substrate.


Overlap Shear Strength	700 lb/in²	View 
Temp C: 23C Temp F: 72F Substrate: Fir Notes: 1in overlap specimens 0.093in thick. Cohesive – Adhesive/Sealant fails before adhesive/sealant releases from substrate. Desired failure mode. Adhesive Failure – Adhesive/Sealant releases from substrate.		


Overlap Shear Strength	40 kg/cm²	View 
Temp C: 23C Temp F: 72F Substrate: Mahogany Notes: 1in overlap specimens 0.093in thick. Cohesive – Adhesive/Sealant fails before adhesive/sealant releases from substrate. Desired failure mode. Adhesive Failure – Adhesive/Sealant releases from substrate.		

Overlap Shear Strength	560 lb/in²	View 
Temp C: 23C Temp F: 72F Substrate: Mahogany Notes: 1in overlap specimens 0.093in thick. Cohesive – Adhesive/Sealant fails before adhesive/sealant releases from substrate. Desired failure mode. Adhesive Failure – Adhesive/Sealant releases from substrate.		

Overlap Shear Strength	25 kg/cm²	View 
Temp C: 23C Temp F: 72F Substrate: Stainless Steel Notes: 1in overlap specimens 0.093in thick. Cohesive – Adhesive/Sealant fails before adhesive/sealant releases from substrate. Desired failure mode. Adhesive Failure – Adhesive/Sealant releases from substrate.		

Overlap Shear Strength	350 lb/in²	View 
Temp C: 23C Temp F: 72F Substrate: Stainless Steel Notes: 1in overlap specimens 0.093in thick. Cohesive – Adhesive/Sealant fails before adhesive/sealant releases from substrate. Desired failure mode. Adhesive Failure – Adhesive/Sealant releases from substrate.		

Overlap Shear Strength	28 kg/cm²	View 
Temp C: 23C Temp F: 72F Substrate: Aluminum Notes: 1in overlap specimens 0.093in thick. Cohesive – Adhesive/Sealant fails before adhesive/sealant releases from substrate. Desired failure mode. Adhesive Failure – Adhesive/Sealant releases from substrate.		


Overlap Shear Strength	390 lb/in²	View 
Temp C: 23C Temp F: 72F Substrate: Aluminum Notes: 1in overlap specimens 0.093in thick. Cohesive – Adhesive/Sealant fails before adhesive/sealant releases from substrate. Desired failure mode. Adhesive Failure		


– Adhesive/Sealant releases from substrate.


Overlap Shear Strength	33 kg/cm²	View	^
Temp C: 23C Temp F: 72F Substrate: Brass Notes: 1in overlap specimens 0.093in thick. Cohesive – Adhesive/Sealant fails before adhesive/sealant releases from substrate. Desired failure mode. Adhesive Failure – Adhesive/Sealant releases from substrate.			
Overlap Shear Strength	470 lb/in²	View	^
Temp C: 23C Temp F: 72F Substrate: Brass Notes: 1in overlap specimens 0.093in thick. Cohesive – Adhesive/Sealant fails before adhesive/sealant releases from substrate. Desired failure mode. Adhesive Failure – Adhesive/Sealant releases from substrate.			
Overlap Shear Strength	18 kg/cm²	View	^
Temp C: 23C Temp F: 72F Substrate: Bronze Notes: 1in overlap specimens 0.093in thick. Cohesive – Adhesive/Sealant fails before adhesive/sealant releases from substrate. Desired failure mode. Adhesive Failure – Adhesive/Sealant releases from substrate.			
Overlap Shear Strength	250 lb/in²	View	^
Temp C: 23C Temp F: 72F Substrate: Bronze Notes: 1in overlap specimens 0.093in thick. Cohesive – Adhesive/Sealant fails before adhesive/sealant releases from substrate. Desired failure mode. Adhesive Failure – Adhesive/Sealant releases from substrate.			
Overlap Shear Strength	14 kg/cm²	View	^
Temp C: 23C Temp F: 72F Substrate: Copper Notes: 1in overlap specimens 0.093in thick. Cohesive – Adhesive/Sealant fails before adhesive/sealant releases from substrate. Desired failure mode. Adhesive Failure – Adhesive/Sealant releases from substrate.			
Overlap Shear Strength	200 lb/in²	View	^
Temp C: 23C Temp F: 72F Substrate: Copper Notes: 1in overlap specimens 0.093in thick. Cohesive – Adhesive/Sealant fails before adhesive/sealant releases from substrate. Desired failure mode. Adhesive Failure – Adhesive/Sealant releases from substrate.			
Overlap Shear Strength	7.5 kg/cm²	View	^
Temp C: 23C Temp F: 72F Substrate: Lead Notes: 1in overlap specimens 0.093in thick. Cohesive – Adhesive/Sealant fails before adhesive/sealant releases from substrate. Desired failure mode. Adhesive Failure – Adhesive/Sealant releases from substrate.			
Overlap Shear Strength	100 lb/in²	View	^


Temp C: 23C
Temp F: 72F
Substrate: Lead


Notes: 1in overlap specimens 0.093in thick. Cohesive – Adhesive/Sealant fails before adhesive/sealant releases from substrate. Desired failure mode. Adhesive Failure – Adhesive/Sealant releases from substrate.


Overlap Shear Strength	34 kg/cm²	View 
Temp C: 23C Temp F: 72F Substrate: Zinc (Galvanized) Notes: 1in overlap specimens 0.093in thick. Cohesive – Adhesive/Sealant fails before adhesive/sealant releases from substrate. Desired failure mode. Adhesive Failure – Adhesive/Sealant releases from substrate.		


Overlap Shear Strength	480 lb/in²	View 
Temp C: 23C Temp F: 72F Substrate: Zinc (Galvanized) Notes: 1in overlap specimens 0.093in thick. Cohesive – Adhesive/Sealant fails before adhesive/sealant releases from substrate. Desired failure mode. Adhesive Failure – Adhesive/Sealant releases from substrate.		

Overlap Shear Strength	15 kg/cm²	View 
Temp C: 23C Temp F: 72F Substrate: Acrylic (PMMA) Notes: 1in overlap specimens 0.093in thick. Cohesive – Adhesive/Sealant fails before adhesive/sealant releases from substrate. Desired failure mode. Adhesive Failure – Adhesive/Sealant releases from substrate.		

Overlap Shear Strength	215 lb/in²	View 
Temp C: 23C Temp F: 72F Substrate: Acrylic (PMMA) Notes: 1in overlap specimens 0.093in thick. Cohesive – Adhesive/Sealant fails before adhesive/sealant releases from substrate. Desired failure mode. Adhesive Failure – Adhesive/Sealant releases from substrate.		

Overlap Shear Strength	12 kg/cm²	View 
Temp C: 23C Temp F: 72F Substrate: Nylon Notes: 1in overlap specimens 0.093in thick. Cohesive – Adhesive/Sealant fails before adhesive/sealant releases from substrate. Desired failure mode. Adhesive Failure – Adhesive/Sealant releases from substrate.		

Overlap Shear Strength	175 lb/in²	View 
Temp C: 23C Temp F: 72F Substrate: Nylon Notes: 1in overlap specimens 0.093in thick. Cohesive – Adhesive/Sealant fails before adhesive/sealant releases from substrate. Desired failure mode. Adhesive Failure – Adhesive/Sealant releases from substrate.		

Overlap Shear Strength	16 kg/cm²	View 
Temp C: 23C Temp F: 72F Substrate: ABS Notes: 1in overlap specimens 0.093in thick. Cohesive – Adhesive/Sealant fails before adhesive/sealant releases from substrate. Desired failure mode. Adhesive Failure		

– Adhesive/Sealant releases from substrate.

Overlap Shear Strength	230 lb/in²	View	^
Temp C: 23C Temp F: 72F Substrate: ABS Notes: 1in overlap specimens 0.093in thick. Cohesive – Adhesive/Sealant fails before adhesive/sealant releases from substrate. Desired failure mode. Adhesive Failure – Adhesive/Sealant releases from substrate.			

Rate of Cure	3 mm per 5 day	View	^
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Test Condition: Room Temperature

Rate of Cure	1 to 8 in per 5 day	View	^
Test Condition: Room Temperature			

Effect of Water Submersion		View	^
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Test Condition: Room Temperature

Notes: Dumbbell specimen with 1/8” length, 1/8” square cross section were tested at 2.0 inches/minute.

Overlap Shear Strength	38 kg/cm²	View	^
Test Condition: Room Temperature Substrate: Cold Rolled Steel Notes: 1in overlap specimens 0.093in thick. Cohesive – Adhesive/Sealant fails before adhesive/sealant releases from substrate. Desired failure mode. Adhesive Failure – Adhesive/Sealant releases from substrate.			

Overlap Shear Strength	530 lb/in²	View	^
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Test Condition: Room Temperature
Substrate: Cold Rolled Steel

Notes: 1in overlap specimens 0.093in thick. Cohesive – Adhesive/Sealant fails before adhesive/sealant releases from substrate. Desired failure mode. Adhesive Failure – Adhesive/Sealant releases from substrate.

Overlap Shear Strength	27 kg/cm²	View	^
Test Condition: Room Temperature Substrate: Polycarbonate (PC) Notes: 1in overlap specimens 0.093in thick. Cohesive – Adhesive/Sealant fails before adhesive/sealant releases from substrate. Desired failure mode. Adhesive Failure – Adhesive/Sealant releases from substrate.			


Overlap Shear Strength	380 lb/in²	View	^
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Test Condition: Room Temperature
Substrate: Polycarbonate (PC)

Notes: 1in overlap specimens 0.093in thick. Cohesive – Adhesive/Sealant fails before adhesive/sealant releases from substrate. Desired failure mode. Adhesive Failure – Adhesive/Sealant releases from substrate.

Overlap Shear Strength	26 kg/cm²	View	^
Test Condition: Room Temperature Substrate: Fiber-Reinforced Plastic Notes: 1in overlap specimens 0.093in thick. Cohesive – Adhesive/Sealant fails before adhesive/sealant releases from substrate. Desired failure mode. Adhesive Failure			

– Adhesive/Sealant releases from substrate.

Overlap Shear Strength	360 lb/in²	View 
Test Condition: Room Temperature Substrate: Fiber-Reinforced Plastic		
Notes: 1in overlap specimens 0.093in thick. Cohesive – Adhesive/Sealant fails before adhesive/sealant releases from substrate. Desired failure mode. Adhesive Failure – Adhesive/Sealant releases from substrate.		

Storage and Shelf Life

Polyurethane sealants and adhesive sealants must be stored in a controlled environment to maximize shelf life. Store the products in the original unopened containers below 77°F (25C).

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

Automotive Disclaimer

Automotive Applications: This product is an industrial product and has not been designed or tested for use in certain automotive applications, including, but not limited to, automotive electric powertrain battery or high voltage applications. This product does not fully adhere to typical automotive design or quality system requirements, such as IATF 16949 or VDA 6.3. This product may not be manufactured in an IATF certified facility and may not meet a Ppk of 1.33 for all properties. The product may not undergo an automotive production part approval process (PPAP). Customer is solely responsible for evaluating the product and determining whether it is appropriate and suitable for customer’s automotive application and for conducting incoming inspections before use of the product. Failure to do so may result in injury, death, and/or harm to property. No written or verbal statement, report, data or recommendation by 3M related to automotive use of the product shall have any force or effect unless in an agreement signed by the Technical Director of 3M’s Automotive Division. Customer assumes all responsibility and risk if customer chooses to use this product in an automotive electric powertrain battery or high voltage application, and 3M will not be liable for any loss or damage arising from or related to the 3M product or customer’s use of the product, whether direct, indirect, special, incidental, or consequential (including, but not limited to, lost profits or business opportunity or recall costs), regardless of the legal or equitable theory asserted, including, but not limited to, warranty, contract, negligence, or strict liability. In no event shall 3M be liable for any damages in excess of the purchase price paid for the product.

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Bottom Matter

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Trademarks

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Handling/Application Information

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 to be bonded before applying 3MTM Adhesive Sealant 5200. Recommended procedures include cleaning with 3MTM 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 5200 to the seam or part to be 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:

Applications:

3MTM Adhesive Sealant 5200 is for permanent assembly of wood and fiberglass parts bonded together. If a non-permanent bond is desired, use 3MTM Marine Adhesive Sealant 4200.

Typical bonding applications include:

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

Typical sealing applications include:

- Some plastics (test before assembly)
- Glass
- Metals (priming may be required)

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.
- At 90o F (32o C) and 90% relative humidity, bonds should be made within 15 minutes.
- Some one-part solvent-based Marine paints may not cure on top of cured 5200. It is strongly recommended to test all desired paints for suitability.
- 5200 has an elongation much greater than most paints. Most paints will not elongate to this extent before cracking or losing adhesion to the sealant. If the sealant is used in an application where it will elongate or flex to a high degree, it is best not to paint.
- 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.
- 5200 is not recommended for the installation of glass, polycarbonate, or acrylic windows that are not also mechanically fastened. Inconsistent adhesion of these unprimed substrates, specific design of the window and movement due to thermal expansion and flexing may cause application failure. Contact a Technical Service Engineer for help with these applications.
- When using 3MTM Marine Adhesive Sealant 5200 with metals it may be necessary to prime the surface to achieve adequate adhesion and durability of the bond. 3M Metal Primer P592 may be used for priming of most metals.

Cleanup:

For cleaning 3MTM Marine Adhesive Sealant 5200 before it is cured, use a dry cloth to remove the majority of sealant, followed by a cloth damp with 3MTM General

Purpose Adhesive Cleaner 08984. Cured material can be removed mechanically with a knife, razor blade, piano wire, or sanding device.

References

Property	Values
3m.com Product Page	https://www.3m.com/3M/en_US/p/d/b40066983/
Safety Data Sheet SDS	https://www.3m.com/3M/en_US/company-us/SDS-search/results/?gsaAction=msdsSRA&msdsLocale=en_US&co=ptn&q=5200

Family Group

Link Tags:

- 5200

Products	Minimum Long Term Temperature Resistance	Long Term Temp F
5200	-40 °C	190 °F

ISO Statement

This Industrial Adhesives and Tapes Division product was manufactured under a 3M quality system registered to ISO 9001 standards.

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.

Information

Technical Information: The technical information, guidance, and other statements contained in this document or otherwise provided by 3M are based upon records, tests, or experience that 3M believes to be reliable, but the accuracy, completeness, and representative nature of such information is not guaranteed. Such information is intended for people with knowledge and technical skills sufficient to assess and apply their own informed judgment to the information. No license under any 3M or third party intellectual property rights is granted or implied with this information.

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