Polyurethane Multi-Purpose Adhesive 5010

Technical Data **December, 2012**

Product Description

3M™ Polyurethane Multi-Purpose Adhesive 5010 is a one component, fast curing adhesive which forms a rigid permanent bond. 3M 5010 bonds to a wide variety of materials including wood, foam panels, fiberglass, and wood.

Features/Advantages

Feature	3M™ Polyurethene Multi-Purpose Adhesive 5010	Advantage
One component/moisture curing	X	• No mixing • Simplifies production
Bonds dissimilar materials	X	• Gives design flexibility
Adheres to a wide variety of materials	X	• Multiple uses and design flexibility
High strength	X	• Provides long lasting bonds
Fast curing	X	• Speeds production
Paintable after cure	X	• Improves appearance
Higher modulus / High Shore A Hardness	X	• Gives high strength bond
Unique formulation	X	• No foaming or bond line expansion

Application Ideas

Market	3M™ Polyurethene Multi-Purpose Adhesive 5010
General Industrial	X
Construction	X
	Bonds wood with thin bond line and no foaming.
	Can be used to bond polystyrene or phenolic foam and foam panels.

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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™ Polyurethene Multi-Purpose Adhesive 5010
Open Time	3 - 5 minutes
Pressing Time	30 minutes
Final Setting Time	24 hours
Tensile Strength (ASTM D412)	275 psi (1.9 MPa)
100% Modulus (ASTM D412)	1700 psi (11.7 MPa)
Service Temperature	-22°F - 212°F (-30°C - 100°C)
Specific Gravity	1.05
Consistency	Thixotropic paste
VOC Content	2.1 g/l
Approximate Coverage (10.5 oz. [310 mm Cartridge])	1/8" (3 mm) bead = 126 lineal feet (38 lineal meters)

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Performance Data

Note: The following data represents the overlap shear results of a 17 mil bond line. All substrates were abraded and solvent wiped prior to bonding, then cured for 30 days. Actual values will vary, as the final bond strengths are dependent upon many variables such as substrate type, substrate uniformity, and environmental conditions. The following data should be considered representative or typical only and should not be used for specification purposes.

Overlap Shear Data

	3M™ Polyurethene Multi-Purpose Adhesive 5010	
Substrate	**Failure Mode**	**Max Load at Failure psi / MPa**
Fir	Substrate Broke / Gross Failure	686 / 4.7
Stainless Steel	Cohesive	1042 / 7.2
Aluminum	Cohesive	905 / 6.2
Cold Rolled Steel	Adhesive	1011 / 7.0
Nylon	Adhesive	262 / 1.8
ABS	Adhesive	528 / 3.6
Acrylic	Substrate Broke / Gross Failure	492 / 3.4
Polycarbonate	Cohesive	357 / 2.5
FRP Green	Cohesive	1668 / 11.5
Polypropylene	Adhesive	51 / 0.4
LD Polyethylene	Adhesive	90 / 0.6
PVC	Substrate Broke / Gross Failure	790 / 5.4
Glass	Substrate Broke / Gross Failure	333 / 2.3

Poor curing after 30 days with non-porous substrates, Metals, PC, PE were 50-75% cured.

Heat Resistance:

Long term exposure to temperatures greater than 212°F (100°C) will decrease tensile strength over time. Do not use these products in applications where the temperatures will continuously exceed 212°F (100°C).

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Directions for Use

Surface Preparation:
Surfaces to be sealed or bonded should be clean and dry. Surfaces should be free from grease, mold release, oil, water/condensation, and other contaminants that may affect the adhesion of the sealant. Abrading with 180 to 220 grit abrasive followed by a solvent wipe will improve the bond strength. Suitable solvents include 3M™ Adhesive Remover or methyl ethyl ketone (MEK).*****

***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.

Primer:
Use of a primer is an extra step and cost and will depend on substrates and 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. For most applications, high strength bonds on metal can be achieved without the use of a primer. 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.

Application:
Loading the applicator gun: make sure the applicator is set up with correct plunger attachment for cartridge.

Cartridge: Cut off tip of the cartridge. Load into applicator and fix retaining ring (if applicable). Assemble the nozzle (if applicable) and cut to desired size and shape.

Product should be used within 24 hours after cartridge is opened. Dispense product with the nozzle tip in contact with the substrate to insure good contact with the substrate. Bonding must occur within 3 minutes.

Do not apply 3M™ Polyurethane Multi-Purpose Adhesive 5010 on frozen nor wet surfaces. Do not apply over silicone nor in the presence of curing silicone.

Cleanup:
While sealant is still soft, cleaning can be done with the same solvents used for surface preparation. If sealant is already cured, removal is done mechanically with razor knife, piano wire, sanding or 3M™ Scotch-Brite™ Molding Adhesive and Stripe Removal Disc. This disc is available from 3M Automotive Aftermarket Division.

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Application Equipment Suggestions

Cartridge:
A variety of applicators are available. Please contact your sales rep for assistance in selecting an applicator.

Storage

3M™ Polyurethane Multi-Purpose Adhesive 5010 must be stored in a controlled environment to maximize shelf life. Store the products in the original unopened containers below 90°F (32°C).

Shelf Life

When stored at recommended conditions, the shelf life of cartridges and sausage packs is 12 months from the date of manufacture. For 5 and 55 gallon containers, the shelf life is 6 months from 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.

Product Use

Many factors beyond 3M's control and uniquely within user's knowledge and control can affect the use and performance of a 3M product in a particular application. Given the variety of factors that can affect the use and performance of a 3M product, user is solely responsible for evaluating the 3M product and determining whether it is fit for a particular purpose and suitable for user's method of application.

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ISO 9001

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

3M

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