

April, 2009

3M™ Double Coated Urethane Foam Tape 4016

Product Description

3M™ Double Coated Urethane Foam Tapes are conformable foams that offer high shear strength with a high temperature holding acrylic adhesive system for bonding to various types of surfaces for mounting, joining and holding.

Product Features

- The natural colored urethane foam tape products vary in color from white to light yellow. The color will change to light yellow upon exposure to sunlight (ultraviolet radiation). This color change is normal and does not affect tape performance.



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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		Notes
Color	Natural		
Thickness: Nominal	1.6 mm	62.5 mil	
Thickness Tolerance	1.142 to 2.03 mm	45 to 80 mil	
Adhesive Type	100		3M™ Adhesive 100 is a firm acrylic pressure sensitive adhesive system. It features high ultimate bond strength, very good high temperature and solvent resistance and very high shear holding power. Bond strength increases substantially with natural aging.
Adhesive Carrier	Polyurethane Foam		
Foam Density	175 kg/m ³	11 lb/ft ³	
Liner Thickness	0.08 mm	3 mil	
Liner Color	Green Plaid		

Typical Performance Characteristics

Property	Values		Notes
Normal Tensile	345 kPa	50 lb/in ²	("T" Block); 1 in ² (6.45 cm ²); Jaw Speed 2 in/min (50 mm/min)
Tensile Strength	965 kPa	140 lb/in ²	
Elongation at Break	100 %		
Solvent Resistance	No apparent degradation when exposed to splash tests of most hydrocarbon solvents.		
UV Resistance	No apparent degradation when exposed to 7 days in U.V. chamber.		

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Typical Performance Characteristics (continued)

Property	Values		Notes
Cold Flex @ -20°F (-30°C)	No cracking when flexed around a 1/4 in (6.4 mm mandrel).		

Relative High Temperature Operating Ranges		Test Condition
193 °C	380 °F	Short Term (minutes, hours)
104 °C	220 °F	Long Term (days, weeks)

Property: Relative High Temperature Operating Ranges

Static Shear	Test Condition
1500 g	Room Temperature
1000 g	49°C (120°F)
750 g	66°C (150°F)
750 g	93°C (200°F)

Property: Static Shear

Available Sizes

Property	Values	
Note	Subject to Minimum Order Requirements	
Standard Length	32.9 m	36 yd
Maximum Length	91 m	100 yd
Available Width	1168 mm	46 in
Normal Slitting Tolerance	±0.8 mm	±1/32 in

Electrical and Thermal Properties

Property	Values	
Dielectric Strength	200 to 300 V/mil	8 to 12 V/μm
Thermal Conductivity (k value)	0.062 W/m/K	0.036 (btu-ft)/(h-ft²-°F)

Handling/Application Information

Application Ideas

The urethane foam tapes are generally ideal for interior applications or for exterior applications where the tape will be protected from the environment. The urethane foam is open cell.

3M™ Double Coated Urethane Foam Tape 4016 – Mount interior signs and nameplates

Handling/Application Information (continued)

Application Techniques

- Bond strength is dependent upon the amount of adhesive-to-surface contact developed. Firm application pressure helps develop better adhesive contact and improve bond strength.
 - To obtain optimum adhesion, the bonding surfaces must be clean, dry and well unified. Typical surface cleaning solvents are isopropyl alcohol* and water (rubbing alcohol) or heptane.
 - Ideal tape application temperature range is 70°F to 100°F (21°C to 38°C). Initial tape application to surfaces at temperatures below 50°F (10°C) is not recommended because the adhesive becomes too firm to adhere readily. However, once properly applied, low temperature holding is generally satisfactory.
- *Note: Be sure to follow the manufacturer's precautions and directions for use when using solvents.

Storage and Shelf Life

Store in original cartons at 70°F (21°C) and 50% relative humidity.
To obtain best performance, use these products within 24 months from date of manufacture.

Information

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Trademarks

3M is a trademark of 3M Company.

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References

Safety Data Sheet (SDS)

Family Group

	4004	4008	4016	4026	4032	4052	4056	4085
Relative High Temperature Operating Ranges (°C) Test Condition: Short Term (minutes, hours)	193	193	193	193	193	193	93	
Relative High Temperature Operating Ranges (°C) Test Condition: Long Term (days, weeks)	104	104	104	104	104	104	52	
Color	Natural	Natural	Natural	Natural	Natural	Black	Black	Natural
Thickness: Nominal (mm)	6.4	3.2	1.6	1.6	0.8	0.8	1.6	1.2
Thickness Tolerance (mm)	5.46 to 7.24	2.79 to 3.81	1.142 to 2.03	1.142 to 2.03	0.64 to 1.02	0.64 to 1.02	1.142 to 2.03	1 to 1.45
Adhesive Type	100	100	100	100	100	100	100	740
Adhesive Carrier	Polyurethane Foam	Polyurethane Foam	Polyurethane Foam	Polyurethane Foam	Polyurethane Foam	Polyurethane Foam	Polyurethane Foam	Polyurethane Foam
Liner Thickness (mm)	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Liner Color	Green Plaid	Green Plaid	Green Plaid	Green Plaid	Green Plaid	Green Plaid	Green Plaid	Tan

ISO Statement

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

Recognition/Certification

MSDS: 3M has not prepared MSDSs for these products which are not subject to the MSDS requirements of the Occupational Safety and Health Administration's Hazard Communication Standard, 29 C.F.R. 1910.1200(b)(6)(v). When used under reasonable conditions or in accordance with the 3M directions for use, these products should not present a health and safety hazard. However, use or processing of the products in a manner not in accordance with the directions for use may affect their performance and present potential health and safety hazards.

TSCA: These products are defined as articles under the Toxic Substances Control Act and therefore, are exempt from inventory listing requirements.

