

April, 2009

3M™ Double Coated Urethane Foam Tape 4004

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.



3M™ Double Coated Urethane Foam Tape 4004

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	Attribute Modifier
Color	Natural			
Thickness: Nominal	6.4 mm	250 mil		
Thickness Tolerance	5.46 to 7.24 mm	215 to 285 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	190 kg/m ³	12 lb/ft ³		
Liner Color	Green Plaid			Primary
Liner Thickness	0.08 mm	3 mil		

Typical Performance Characteristics

Property	Values		Notes
Normal Tensile	85 kPa	12 lb/in ²	("T" Block); 1 in ² (6.45 cm ²); Jaw Speed 2 in/min (50 mm/min)
Tensile Strength	620 kPa	90 lb/in ²	
Elongation at Break	90 %		
Solvent Resistance	No apparent degradation when exposed to splash tests of most hydrocarbon solvents.		

Table continued on next page

3M™ Double Coated Urethane Foam Tape 4004

Typical Performance Characteristics (continued)

Property	Values		Notes
UV Resistance	No apparent degradation when exposed to 7 days in U.V. chamber.		
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
1000 g	Room Temperature
500 g	49°C (120°F)
500 g	66°C (150°F)
250 g	93°C (200°F)

Property: Static Shear

Available Sizes

Property	Values	
Note	Subject to Minimum Order Requirements	
Standard Roll Length	16.5 m	18 yd
Maximum Length	23 m	25 yd
Available Width	1168 mm	46 in
Normal Slitting Tolerance	±0.8 mm	±1/32 in

Electrical and Thermal Properties

Property	Values	
Dielectric Strength	8 to 12 V/μm	
Thermal Conductivity	0.062 W/m/K	0.036 (btu-in)/(h-ft²-°F)

3M™ Double Coated Urethane Foam Tape 4004

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 4004 – Mount interior signs and nameplates

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.

Trademarks

3M is a trademark of 3M Company.

References

Property	Values
3m.com Product Page	https://www.3m.com/3M/en_US/company-us/all-3m-products/-/3M-Double-Coated-Urethane-Foam-Tape-4004?N=5002385+3293241604&rt=rud
Safety Data Sheet (SDS)	https://www.3m.com/3M/en_US/company-us/SDS-search/results/?gsaAction=msdsSRA&msdsLocale=en_US&co=ptn&q=4004

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	
Liner Color Attribute Modifier: Primary	Green Plaid	Green Plaid	Green Plaid	Green Plaid	Green Plaid	Green Plaid	Green Plaid	Tan
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

Table continued on next page

3M™ Double Coated Urethane Foam Tape 4004

Family Group (continued)

	4004	4008	4016	4026	4032	4052	4056	4085
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

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.

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.

Product Selection and 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. As a result, customer is solely responsible for evaluating the product and determining whether it is appropriate and suitable for customer's application, including conducting a workplace hazard assessment and reviewing all applicable regulations and standards (e.g., OSHA, ANSI, etc.). Failure to properly evaluate, select, and use a 3M product and appropriate safety products, or to meet all applicable safety regulations, may result in injury, sickness, death, and/or harm to property.

Warranty, Limited Remedy, and Disclaimer: Unless a different warranty is specifically stated on the applicable 3M product packaging or product literature (in which case such warranty governs), 3M warrants that each 3M product meets the applicable 3M product specification at the time 3M ships the product. 3M MAKES NO OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OR CONDITION OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR ARISING OUT OF A COURSE OF DEALING, CUSTOM, OR USAGE OF TRADE. If a 3M product does not conform to this warranty, then the sole and exclusive remedy is, at 3M's option, replacement of the 3M product or refund of the purchase price.

Limitation of Liability: Except for the limited remedy stated above, and except to the extent prohibited by law, 3M will not be liable for any loss or damage arising from or related to the 3M product, whether direct, indirect, special, incidental, or consequential (including, but not limited to, lost profits or business opportunity), regardless of the legal or equitable theory asserted, including, but not limited to, warranty, contract, negligence, or strict liability.

