# Double Coated Urethane Foam Tapes

4004 • 4008 • 4016 • 4026
4032 • 4052 • 4056 • 4085

**Technical Data** **April, 2009**

**Product Description**

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

**Products**

**Note: The user is responsible for determining whether the tape is fit for a particular purpose and suitable for user's method of application.**

| | | |
|---|---|---|
| 3M™ Double Coated Urethane Foam Tape 4004 | 1/4 in. | (6.4 mm) thick |
| 3M™ Double Coated Urethane Foam Tape 4008 | 1/8 in. | (3.2 mm) thick |
| 3M™ Double Coated Urethane Foam Tape 4016 | 1/16 in. | (1.6 mm) thick |
| 3M™ Double Coated Urethane Foam Tape 4026 | 1/16 in. | (1.6 mm) thick |
| 3M™ Double Coated Urethane Foam Tape 4032 | 1/32 in. | (0.8 mm) thick |
| 3M™ Double Coated Black Urethane Foam Tape 4052 | 1/32 in. | (0.8 mm) thick |
| 3M™ Double Coated Black Urethane Foam Tape 4056 | 1/16 in. | (1.6 mm) thick |
| 3M™ Double Coated Urethane Foam Tape 4085 | 0.045 in. | (1.1 mm) thick |

# 3M™ Double Coated Urethane Foam Tapes

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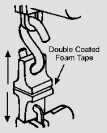
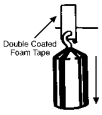
## Typical Physical Properties

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

| | Units | 3M™ Double Coated Urethane Foam Tape 4004 | 4008 | 4016 | 4026 |
|---|---|---|---|---|---|
| **Adhesive Type:*** | | 100 | 100 | 100 | 100 |
| **Adhesive Carrier:** | | Polyurethane Foam | Polyurethane Foam | Polyurethane Foam | Polyurethane Foam |
| **Thickness: Nominal** | inch (mm) | 0.250 (6.4) | 0.125 (3.2) | 0.0625 (1.6) | 0.0625 (1.6) |
| **Thickness: Tolerance:** | inch<br>(mm) | 0.215-0.285<br>(5.46-7.24) | 0.110-0.150<br>(2.79-3.81) | 0.045-0.080<br>(1.142-2.03) | 0.045-0.080<br>(1.142-2.03) |
| **Color:** | | Natural | Natural | Natural | Natural |
| **Release Liner:** | inch (mm) | 0.003 (0.08) | 0.003 (0.08) | 0.003 (0.08) | 0.003 (0.08) |
| **Liner Color:** | | Green Plaid | Green Plaid | Green Plaid | Green Plaid |
| **Approximate Density:**<br>(Foam Only) | $lb/ft^3$<br>($kg/m^3$) | 12<br>(190) | 15<br>(240) | 11<br>(175) | 18<br>(290) |
| **Standard Length:** | yard (meter) | 18 (16.5) | 36 (32.9) | 36 (32.9) | 36 (32.9) |
| **Maximum Length:** | yard (meter) | 25 (23) | 50 (45.7) | 100 (91) | 100 (91) |
| **Available Width:** | inch (mm) | 46 (1168) | 46 (1168) | 46 (1168) | 46 (1168) |
| **Normal Slitting Tolerance:** | inch (mm) | ± 1/32 (± 0.8) | ± 1/32 (± 0.8) | ± 1/32 (± 0.8) | ± 1/32 (± 0.8) |
| **Normal Tensile:**   ("T" Block)<br>1 $in^2$ (6.45 $cm^2$)<br>Jaw Speed 2 in/min<br>(50 mm/min) | psi (kPa) | 12 (85) | 25 (170) | 50 (345) | 40 (275) |
| **Static Shear:**   Measured at various temperatures and gram loadings. (1/2 sq. in. overlap). Will hold listed weight for 100 hours. | gms | 1000<br>500<br>500<br>250 | 1000<br>500<br>500<br>250 | 1500<br>1000<br>750<br>750 | 2000<br>1000<br>1000<br>750 |
| 72°F (22°C)<br>120°F (49°C)<br>150°F (66°C)<br>200°F (93°C) | | | | | |
| **Tensile Strength:** | psi (kPa) | 90 (620) | 160 (1100) | 140 (965) | 180 (1240) |
| **Elongation:** | % | 90 | 90 | 100 | 100 |
| **Temperature Resistance:** | | | | | |
| Short Term (Minutes, Hours) | °F (°C) | 380 (193) | 380 (193) | 380 (193) | 380 (193) |
| Long Term (Days, Weeks) | °F (°C) | 220 (104) | 220 (104) | 220 (104) | 220 (104) |
| **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. | | | |
| **Cold Flex at -20°F (-30°C):** | | No cracking when flexed around a 1/4 in. (6.4 mm mandrel). | | | |
| **Thermal Conductivity:** | BTU/hr/°F/$ft^2$/ft<br>(watt/metre Kelvin) | 0.036<br>(0.062) | 0.036<br>(0.062) | 0.036<br>(0.062) | 0.036<br>(0.062) |
| **Dielectric Strength:** | volts/mil<br>(volts/0.025 mm) | 200-300<br>(200-300) | 200-300<br>(200-300) | 200-300<br>(200-300) | 200-300<br>(200-300) |

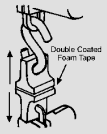
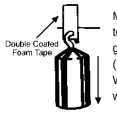
*3M™ Adhesive 100 is a firm acrylic pressure sensitive adhesive system. It features high ultimate bond strength, very good high temperature and solvent resistance and very high shear holding power. Bond strength increases substantially with natural aging.

# 3M™ Double Coated Urethane Foam Tapes

4004 • 4008 • 4016 • 4026 • 4032 • 4052 • 4056 • 4085

## 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.**

| | Units | 3M™ Double Coated Urethane Foam Tape 4032 | 4052 | 4056 | 4085 |
|---|---|---|---|---|---|
| **Adhesive Type:*** | | 100 | 100 | 100 | 740 |
| **Adhesive Carrier:** | | Polyurethane Foam | Polyurethane Foam | Polyurethane Foam | Polyurethane Foam |
| **Thickness: Nominal** | inch (mm) | 0.031 (0.8) | 0.031 (0.8) | 0.0625 (1.6) | 0.045 (1.2) |
| **Thickness: Tolerance:** | inch<br>(mm) | 0.025-0.040<br>(0.64-1.02) | 0.025-0.040<br>(0.64-1.02) | 0.045-0.080<br>(1.142-2.03) | 0.039-0.054<br>(1.00-1.45) |
| **Color:** | | Natural | Black | Black | Natural |
| **Release Liner:** | inch (mm) | 0.003 (0.08) | 0.003 (0.08) | 0.003 (0.08) | 0.003 (0.08) |
| **Liner Color:** | | Green Plaid | Green Plaid | Green Plaid | Tan |
| **Approximate Density:**<br>(Foam Only) | lb/ft³<br>(kg/m³) | 20<br>(320) | 14<br>(225) | 11<br>(175) | 22<br>(352) |
| **Standard Length:** | yard (meter) | 72 (65.8) | 72 (65.8) | 36 (32.9) | 72 (65.8) |
| **Maximum Length:** | yard (meter) | 175 (160) | 175 (160) | 100 (91) | 100 (91) |
| **Available Width:** | inch (mm) | 46 (1168) | 46 (1168) | 46 (1168) | 46 (1168) |
| **Normal Slitting Tolerance:** | inch (mm) | ± 1/32 (± 0.8) | ± 1/32 (± 0.8) | ± 1/32 (± 0.8) | ± 1/32 (± 0.8) |
| **Normal Tensile:**<br>("T" Block)<br>1 in² (6.45 cm²)<br>Jaw Speed 2 in/min<br>(50 mm/min)   | psi (kPa) | 60 (414) | 75 (515) | 50 (345) | 45 (310) |
| **Static Shear:**   Measured at various temperatures and gram loadings. (1/2 sq. in. overlap). Will hold listed weight for 100 hours. | gms | 72°F (22°C) 2000<br>120°F (49°C) 1500<br>150°F (66°C) 1000<br>200°F (93°C) 1050 | 1500<br>750<br>750<br>750 | 1500<br>1000<br>750<br>750 | 1000<br>250<br>—<br>— |
| **Tensile Strength:** | psi (kPa) | 240 (1655) | 225 (1550) | 140 (965) | 140 (965) |
| **Elongation:** | % | 90 | 110 | 100 | 100 |
| **Temperature Resistance:**<br>Short Term (Minutes, Hours)<br>Long Term (Days, Weeks) | <br>°F (°C)<br>°F (°C) | <br>380 (193)<br>220 (104) | <br>380 (193)<br>220 (104) | <br>380 (193)<br>220 (104) | <br>200 (93)<br>125 (152) |
| **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. | | | |
| **Cold Flex at -20°F (-30°C):** | | No cracking when flexed around a 1/4 in. (6.4 mm mandrel). | | | |
| **Thermal Conductivity:** | BTU/hr/°F/ft²/ft<br>(watt/metre Kelvin) | 0.036<br>(0.062) | 0.036<br>(0.062) | 0.036<br>(0.062) | 0.036<br>(0.062) |
| **Dielectric Strength:** | volts/mil<br>(volts/0.025 mm) | 200-300<br>(200-300) | 200-300<br>(200-300) | 200-300<br>(200-300) | 200-300<br>(200-300) |

*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.

3M™ Adhesive 740 is a medium-firm rubber-resin pressure sensitive adhesive system. It features good holding power and adhesion to a wide variety of surfaces including many low surface energy plastics such as polyethylene and polypropylene.

# 3M™ Double Coated Urethane Foam Tapes

4004 • 4008 • 4016 • 4026 • 4032 • 4052 • 4056 • 4085

**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 4026 is available in roll form and die-cut pieces. Die-cut pieces of 3M tape 4026 is available in 3/4" or 1" squares, either individual pieces double linered with an extended liner on one side or in pads of 48 squares.
- 3M™ Double Coated Urethane Foam Tape 4085 combines conformability with high immediate adhesion to most plastics including ABS, polycarbonate, acrylic, polyethylene and polypropylene as well as metal and paint. 3M tape 4085 tears easily which makes it ideal for hand application.

**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.

**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 |
| 3M™ Double Coated Urethane Foam Tape 4008 | – | Bond acoustic panels to walls |
| 3M™ Double Coated Urethane Foam Tape 4016 | – | Mount interior signs and nameplates |
| 3M™ Double Coated Urethane Foam Tape 4026 | – | Mount air fresheners and soap dispensers |
| 3M™ Double Coated Urethane Foam Tape 4032 | – | Attach wire clips to various surfaces |
| 3M™ Double Coated Urethane Foam Tape 4052 | – | Bond window to microwave oven doors<br>Mount electrical channel to wall surfaces |
| 3M™ Double Coated Urethane Foam Tape 4056 | – | Mount wall corner protectors |
| 3M™ Double Coated Urethane Foam Tape 4085 | – | Attach wire clips<br>Attach air fresheners |

# 3M™ Double Coated Urethane Foam Tapes

4004 • 4008 • 4016 • 4026 • 4032 • 4052 • 4056 • 4085

**Storage**

Store in original cartons at 70°F (21°C) and 50% relative humidity.

**Shelf Life**

To obtain best performance, use these products within 24 months from date of manufacture except 3M™ Double Coated Urethane Foam Tape 4085 which is 18 months from date of manufacture.

**Certification/ Recognition**

**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.

**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 9001:2000

This Industrial Adhesives and Tapes Division product was manufactured under a 3M quality system registered to ISO 9001:2000 standards.

3M

**Industrial Adhesives and Tapes Division**
3M Center, Building 225-3S-06
St. Paul, MN 55144-1000
800-362-3550 • 877-369-2923 (Fax)
www.3M.com/industrial

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