



Double Coated Urethane Foam Tapes

4000 Series

Technical Data

August, 1997

Product Description		
	4004	1/4 in. (6.4 mm) Double-Coated Urethane Foam Tape
	4008	1/8 in. (3.2 mm) Double-Coated Urethane Foam Tape
	4016	1/16 in. (1.6 mm) Double-Coated Urethane Foam Tape
	4026	1/16 in. (1.6 mm) Double-Coated Urethane Foam Tape (Cut Part)
	4032	1/32 in. (0.8 mm) Double-Coated Urethane Foam Tape
	4042	1/32 in. (0.8 mm) Double-Coated Urethane Foam Tape
	4046	1/16 in. (1.6 mm) Double-Coated Urethane Foam Tape
	4052	1/32 in. (0.8 mm) Double-Coated Black Urethane Foam Tape
	4056	1/16 in. (1.6 mm) Double-Coated Black Urethane Foam Tape
	4085	0.045 in. (1.1 mm) Double-Coated Urethane Foam Tape
	4022	1/32 in. (0.8 mm) Double-Coated Urethane Die Cut version of 4032 Tape
	4026	1/16 in. (1.6 mm) Double-Coated Urethane Die Cut version of 4026 Tape

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Construction

Products	4004 Tape	4008 Tape	4016 Tape	4026 Tape	4032 Tape	4042 Tape	4046 Tape	4052 Tape	4056 Tape	4085 Tape
Adhesive Type:*	A-20	A-20	A-20	A-20	A-20	R-10	R-10	A-20	A-20	R-40
Adhesive Carrier:	Polyurethane Foam									
Thickness: Nominal in. (mm)	1/4 0.250 (6.4)	1/8 0.125 (3.2)	1/16 0.0625 (1.6)	1/16 0.0625 (1.6)	1/32 0.031 (0.8)	1/32 0.031 (0.8)	1/16 0.0625 (1.6)	1/32 0.031 (0.8)	1/16 0.0625 (1.6)	3/64 0.045 (1.2)
Tolerance (mm)	0.215-0.285 (5.46-7.24)	0.110-0.150 (2.79-3.81)	0.045-0.080 (1.14-2.03)	0.045-0.080 (1.14-2.03)	0.025-0.040 (0.64-1.02)	0.025-0.040 (0.64-1.02)	0.045-0.080 (0.64-1.02)	0.025-0.040 (0.64-1.02)	0.045-0.080 (0.64-1.02)	0.039-0.054 (0.64-1.02)
Color:	Natural	Natural	Natural	Natural	Natural	Natural	Natural	Black	Black	Natural
Release Liner:	0.003 in. (0.08 mm) Green Plaid Paper									
Approximate Density: (Foam Only) lb./ft ³ (kg/m ³)	12 (190)	15 (240)	11 (175)	18 (290)	20 (320)	14 (225)	11 (175)	14 (225)	11 (175)	22 (352)

* A-20 Adhesive 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.

R-10 Adhesive is a firm rubber-resin pressure sensitive adhesive system. It features high temperature performance, high shear holding power, and high adhesion to a wide variety of surfaces including many low surface energy plastics such as polyethylene and polypropylene.

R-40 Adhesive 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.

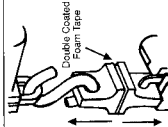
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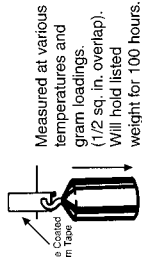
Typical Physical Properties and Performance Characteristics

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

Products	4004 Tape	4008 Tape	4016 Tape	4026 Tape	4032 Tape	4042 Tape	4046 Tape	4052 Tape	4056 Tape	4085 Tape
Normal Tensile: (1" Block) 1 in ² (6.45 cm ²)	12	25	50	40	60	65	55	75	50	45
Jaw Speed 2 in/min (50 mm/min)	(85)	(170)	(345)	(275)	(415)	(446)	(379)	(515)	(345)	(310)



Static Shear:



Measured at various temperatures and gram loadings. (1/2 sq. in. overlap). Will hold listed weight for 100 hours. 200°F (93°C)

Tensile Strength: psi (kPa)	90 (620)	160 (1100)	140 (965)	180 (1240)	240 (1655)	240 (1655)	240 (1655)	225 (1550)	140 (965)	140 (965)
Elongation %:	90	90	100	100	90	90	90	110	100	100

Temperature Resistance:

Short Term (Minutes, Hours)	380°F (193°C)	380°F (193°C)	380°F (193°C)	380°F (193°C)	380°F (193°C)	200°F (93°C)	200°F (93°C)	380°F (193°C)	380°F (193°C)	200°F (93°C)
Long Term (Days, Weeks)	220°F (104°C)	220°F (104°C)	220°F (104°C)	220°F (104°C)	220°F (104°C)	150°F (66°C)	150°F (66°C)	220°F (104°C)	220°F (104°C)	125°F (52°C)

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 (watt/metre Kelvin)

0.036 (0.062)	0.036 (0.062)	0.036 (0.062)	0.036 (0.062)	0.036 (0.062)	0.036 (0.062)	0.036 (0.062)	0.036 (0.062)	0.036 (0.062)	0.036 (0.062)	0.036 (0.062)
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Dielectric Strength:

200-300 (200-300)	200-300 (200-300)	200-300 (200-300)	200-300 (200-300)	200-300 (200-300)	200-300 (200-300)	100-300 (100-300)	100-300 (100-300)	200-300 (200-300)	200-300 (200-300)	200-300 (200-300)
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Shelf Life:

24	24	24	24	24	24	18	18	24	24	18
months from date of manufacture when stored in original cartons at 70°F (28°C) and 50% relative humidity.										

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Available Sizes

Products	4004 Tape	4008 Tape	4016 Tape	4026 Tape	4032 Tape	4042 Tape	4046 Tape	4052 Tape	4056 Tape	4085 Tape
Roll Length: Standard yds. (m)	18 (16.5)	36 (32.9)	36 (32.9)	36 (32.9)	72 (65.8)	72 (65.8)	36 (32.9)	72 (65.8)	36 (32.9)	72 (65.8)
Maximum yds. (m)	25 (23)	50 (45.7)	100 (91)	100 (91)	175 (160)	175 (160)	100 (91)	175 (160)	100 (91)	100 (91)
Roll Width: Minimum in. in. (mm)	1/4 0.250 (6.4)	1/4 0.250 (6.4)	1/8 0.125 (3.2)	1/8 0.125 (3.2)	1/8 0.125 (3.2)	1/8 0.125 (3.2)	1/8 0.125 (3.2)	1/8 0.125 (3.2)	1/8 0.125 (3.2)	1/8 0.125 (3.2)
Maximum in. (mm)	46 (1148)	46 (1148)	2 (51)	46 (1148)	46 (1168)	46 (1168)	46 (1168)	46 (584)	46 (1168)	46 (1168)

Non-standard sizes may be subject to minimum order requirements.

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Slitting Tolerance: in. $\pm 1/32$
in. ± 0.031
(mm) (± 0.8)

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General Information

- The urethane foam is open cell. The urethane foam tapes are generally ideal for interior applications or for exterior applications where the tape will be protected from the environment.
- 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.
- 4022 tape is identical to 4032 tape except 4022 tape is available in die-cut pieces. 4026 tape is available in roll form and die-cut pieces. Die-cut pieces of 4022 tape and 4026 tape are available in 3/4" or 1" squares, either individual pieces double lined with an extended liner on one side or in pads of 48 squares. The 3/4" squares of 4026 tape are also available in a roll 40" long.

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. **Note:** Be sure to follow the manufacturer's precautions and directions for use when using solvents.
- 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.

Application Ideas

4004, 4008, 4016, 4026, 4032, 4052, 4056 Tapes

These urethane foams are soft, conformable and have high shear strength which makes them ideal for general purpose lightweight mounting and joining.

- Application ideas:
- 4404** – Bond mirrors to walls or furniture
 - 4008** – Bond acoustic panels to walls
 - 4016** – Mount interior signs and nameplates
 - 4026** – Mount air fresheners and soap dispensers
 - 4032** – Attach wire clips to various surfaces
 - 4052** – Bond window to microwave oven doors
Mount electrical channel to wall surfaces
 - 4056** – Mount wall corner protectors

4042 and 4046 Tapes

4042 and 4046 tapes are designed for general purpose lightweight mounting and joining applications particularly to surfaces such as polyethylene, polypropylene and other plastics where moderate temperature and shear performance are required.

- Application ideas:
- 4042** – Attach wire clips to various surfaces
 - 4056** – Mount wall corner protectors

4085 Tape

4085 tape combines conformability with high immediate adhesion to most plastics including ABS, polycarbonate, acrylic, polyethylene and polypropylene as well as metal and paint. 4085 tape tears easily, which makes it ideal for hand application.

- Application ideas:
- 4085** – Attach wire clips
Attach air fresheners

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For Additional Information

To request additional product information or to arrange for sales assistance, call toll free 1-800-362-3550. Address correspondence to: 3M Industrial Tape and Specialties Division, 3M Center, Building 220-7E-01, St. Paul, MN 55144-1000. Our fax number is 612-733-9175. In Canada, phone: 1-800-364-3577. In Puerto Rico, phone: 1-809-750-3000. In Mexico, phone: 5-728-2180.

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ISO 9002

This Industrial Tape and Specialties Division product was manufactured under a 3M quality system registered to ISO 9002 standards.

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Industrial Tape and Specialties Division

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