



Double Coated Paper Tapes

400 • 401 • 404 • 406 • 410 • 464

Technical Data

September, 1994

Product Description	400	0.005 in. (0.13 mm) thick double-coated paper tape using a non-silicone treated crepe-paper release liner
	401	0.009 in. (0.23 mm) thick double-coated paper tape
	404	0.005 in. (0.13 mm) thick double-coated paper tape
	406	0.005 in. (0.13 mm) thick double-coated paper tape
	410	0.005 in. (0.13 mm) thick double-coated paper tape
	464	0.003 in. (0.08 mm) thick tissue reinforced adhesive transfer tape

Construction

Products	400 Tape	401 Tape	404 Tape	406 Tape	410 Tape	464 Tape
Adhesive Type:*	R-50	R-60	R-30	R-60	R-50	R-70
Adhesive Carrier:	Paper	Treated Paper	Paper	Paper	Treated Paper	Thin paper tissue
Release Liner:	Off-white Crepe Paper	Green Plaid Paper	Green Plaid Paper	Off-white Crepe Paper	Green Plaid Paper	Off-white Paper
Approximate Thickness: Release Liner	0.010 in. (0.25 mm)	0.004 in. (0.10 mm)	0.004 in. (0.10 mm)	0.010 in. (0.25 mm)	0.004 in. (0.10 mm)	0.0025 in. (0.065 mm)
Tape Only	0.005 in. (0.13 mm)	0.009 in. (0.23 mm)	0.005 in. (0.13 mm)	0.005 in. (0.13 mm)	0.005 in. (0.13 mm)	0.003 in. (0.076 mm)
Tape Color:	Off-white	Off-white	Off-white	Off-white	Off-white	Off-white

*R-30 is a firm rubber-resin pressure-sensitive adhesive system. It features high shear holding power, good high temperature performance, good solvent resistance, and good adhesion to a wide variety of materials.

R-50 is a medium-firm rubber-resin pressure sensitive adhesive system. It features an excellent balance of high initial adhesion and good holding power to a wide variety of materials.

R-60 is a soft rubber-resin pressure-sensitive adhesive system. It features high initial adhesion and good holding power to a wide variety of materials.

R-70 is a soft rubber-resin pressure sensitive adhesive system. It features high initial adhesion to a wide variety of materials.

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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	400 Tape	401 Tape	404 Tape	406 Tape	410 Tape	464 Tape
Adhesion to Steel: (ASTM D3330)	50 oz./in. (55 N/100 mm)	65 oz./in. (71 N/100 mm)	55 oz./in. (60N/100 mm)	55 oz./in. (60 N/100 mm)	50 oz./in. (55 N/100 mm)	60 oz./in. (60 N/100 mm)
Relative High Temperature Operating Ranges:						
Long Term (days, weeks)	150°F (65°C)	150°F (65°C)	200°F (93°C)	150°F (65°C)	150°F (65°C)	150°F (65°C)
Short Term (minutes, hours)	200°F (93°C)	180°F (82°C)	250°F (121°C)	180°F (82°C)	200°F (93°C)	200°F (93°C)
Relative Solvent Resistance:	Medium	Medium	High	Medium	Medium	Medium/Low
U.V. Resistance:	Not recommended for direct exposure to sunlight or other sources of ultra violet light.					
Shelf Life of Tape in Roll Form:	12 months from date of manufacture when stored in original cartons at 70°F (21°C) and 50% relative humidity.					

Available Sizes

Available Lengths (Subject to Minimum Order Requirements):						
Standard	36 yds. (32.9 m)	36 yds. (32.9 m)	36 yds. (32.9 m)	36 yds. (32.9 m)	36 yds. (32.9 m)	60 yds. (55 m)
Maximum						
1/4 to 3/8 in. widths	144 yds. (132 m)	108 yds. (99m)	144 yds. (132 m)	144 yds. (132 m)	144 yds. (132 m)	360 yds. (329 m)
3/8 to 1/2 in. widths	144 yds. (132 m)	108 yds. (99 m)	144 yds. (132 m)	144 yds. (132 m)	144 yds. (132 m)	660 yds. (329 m)
1/2 in. to max.	288 yds. (263 m)	108 yds. (99 m)	360 yds. (329 m)	288 yds. (263 m)	360 yds. (329 m)	660 yds. (329 m)
Available Widths (Subject to Minimum Order Requirements):						
Minimum	1/4 in. (6.35 mm)	1/4 in. (6.35 mm)	1/4 in. (6.35 mm)	1/4 in. (6.35 mm)	1/4 in. (6.35 mm)	1/4 in. (6.35 mm)
Maximum	46 in. (1168 mm)	44 in. (1168 mm)	46 in. (1168 mm)	46 in. (1168 mm)	46 in. (1168 mm)	48 in. (1168 mm)
Normal Slitting Tolerance:				± 1/32 in. 0.8 mm)		
Core Size (ID):				3.0 in. (76.2 mm)		

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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 manufacturer's safety 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.

General Information

- The crepe-paper release liner of 400 tape has good strength and resistance to delamination on removal even when applied to many soft, irregular, or curved surfaces.
- Skip-slit liner is available by special request (subject to minimum order requirements) with 400 and 406 tapes as an aid to liner startability and removal for applications where the tape is applied with liner in place.
- The paper carrier of 401 and 410 tapes has been specially treated to improve its strength and removability characteristics.
- 410 tape meets the requirements of U.S. Government Specification UU-T-91E, (CID A-A-180B) Type II Grades A & B.
- The thin tissue reinforces the adhesive in 464 tape allowing its use in many 3M double coated tape dispensers.
- Due to its high adhesion, 464 tape will normally transfer adhesive or delaminate when removed from most surfaces.
- 464XL tape (and 975XL tape for the hand held LTG gun) (subject to minimum order requirements) are identical to 464 tape except they have extended liner printed with "Remove to expose adhesive". The extended liner is an aid to liner startability and removal for applications where the tape is applied with liner in place.

Application Ideas

These double-coated paper tapes are ideal for bonding together a wide variety of similar and dissimilar materials such as rubbers, metals, wood, glass, papers, paints, and many plastics.

Some applications ideas for the following tapes include:

400/410 Tapes

- Splicing of papers, foils, films, fabrics.
- Mounting rubber or photopolymer printing plates.
- Attaching golf club grips.
- Miscellaneous joining, holding uses where high adhesion and holding power are required.

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Application Ideas

(continued)

401/406 Tapes

- Mounting rubber or photopolymer printing plates.
- Splicing foils, films, fabrics, papers.
- Miscellaneous joining and holding where immediate adhesion is required.

404 Tape

- Splicing of films, foils, papers, fabrics.
- Holding objects where high shear forces are encountered.
- Holding grinding and polishing pads.
- Miscellaneous joining and holding uses.

464 Tape

- General industrial mounting, joining, and splicing.
- Mounting novelties and promotional uses.

For Additional Information

To request additional product information or to arrange for sales assistance, call toll free 1-800-227-5085. Address correspondence to: 3M Industrial Tape and Specialties Division, 3M Center, Building 220-8E-04, St. Paul, MN 55144-1000. Our fax number is 612-733-9175. In Canada, phone: 1-519-451-2500. In Puerto Rico, phone: 1-809-750-3000. In Mexico, phone: 5-728-0400.

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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.

3M

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