3M™ Masking, Packaging, Surface Protection, and Specialty Products

Design & Production Guide for Application Success

Masking, protecting, enhancing, shielding, splicing, cushioning, case sealing

3M

Bringing better ideas to the surface through science and service

3M Industrial Adhesives and Tapes Division helps companies worldwide apply the science of adhesion to the practicalities of improved product design and manufacturing. The end results are solutions for managers, engineers, marketers and other decision makers who need to get a more competitive product to market while improving the process of getting it there.

In this guide, 3M adhesive science is typically applied to protecting, masking, enhancing, or in other ways modifying surfaces to improve appearance, function, and productivity. You will also find ideas for splicing, manual and automatic case sealing, and temporary holding applications such as bundling pipes or hanging poly drapes. Here are just a few application ideas:

- Protect against marring and scratches
- Mask for painting or sandblasting
- Splice paper or film
- Securely seal boxes exposed to moisture and cold temperatures
- Quickly apply high strength L-clips to seal full overlap cartons
- Resist abrasion or flame
- Conduct heat or electricity
- Repel sticky materials
- Enhance glass with optical accents
- Mark to identify or differentiate
- Color-code for attention
- Cover to stop moisture
- Quiet noise

Many 3M adhesive solutions are also available for product assembly – bonding or holding product components together with strength that ranges from permanent to repositionable. You can find assembly solutions in the *Adhesives and Tapes Design Guide for Bonding, Attaching, and Fastening.*

Solutions through service...

3M representatives are located throughout the United States, Canada, and 50 other countries for sales assistance.

For technical service, a highly trained team is ready to help you evaluate tapes for specific applications.

A national authorized distributor network provides sales assistance and local product availability. Authorized converters can also help you adapt 3M tapes to meet special requirements for shape, size, and production.

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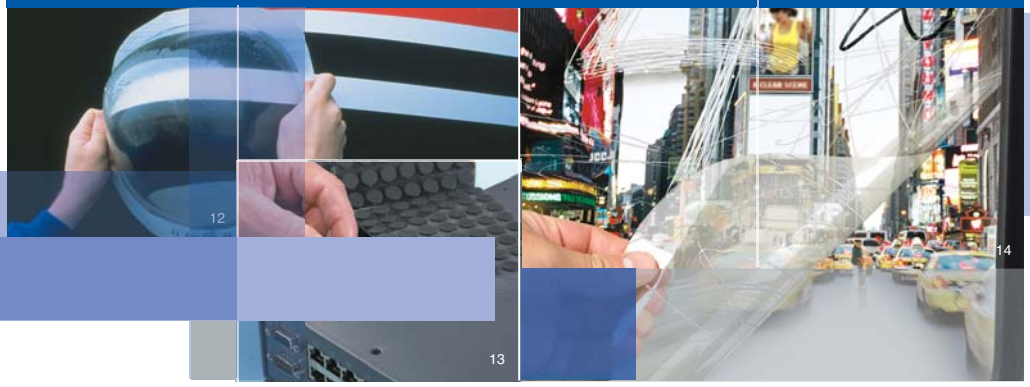

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Get connected with all 3M technologies.
Download data pages and product-specific literature.
Request samples for evaluation.

Or call with questions: 1-800-362-3550

Selecting the right product for the job

To help you make sure you find the optimum 3M tape or other adhesive-backed product for your particular application, you'll want to consider several factors:

- Backing material
- Adhesive type
- Application time and temperature
- Surface characteristics (eg., roughness, surface energy, contours, etc.)
- End use conditions (eg., temperature, UV exposure, abrasion, etc.)

The information on these two pages integrates those factors to help you narrow your selection to fewer products for a more in-depth evaluation.

3M Backing Materials

In many applications, 3M backings add a second surface that affects how the underlying surface relates to the environment.

To optimize that relationship, 3M backings offer a wide choice of performance and handling characteristics.

Backings	Characteristics
Paper	
Crepe	Conformable, easy tear.
Flatback	Strong, smooth, good for straight line masking.
Kraft	Strong, some versions are repulpable.
Tissue	Thin, porous to allow adhesive penetration of sheet.
Plastic	
Polyester	Strong even when thin, chemical resistant, high temperature resistance.
Polypropylene	Resistant to most solvents, conformable, tear resistant.
Polyethylene	Conformable, easy to stretch, chemical/acid/moisture resistant, economical.
Polyethylene/ Polypropylene Co-polymer	Conformable, chemical/acid/moisture resistant.
UHMW – Polyethylene	High abrasion resistance, low coefficient of friction, antistick surface easy to clean.
Polyvinyl Chloride (Vinyl)	Conformable, abrasion resistant, resistant to most chemicals.
Polyimide (eg., Kapton®)	High temperature resistance, excellent dimensional stability, good insulation properties.
Polyamide (Nylon)	High temperature resistance, high strength and toughness, good chemical resistance but can absorb moisture.
Polytetrafluoroethylene (PTFE)	Low coefficient of friction, excellent high temperature and chemical resistance, antistick/release properties.
Polyvinyl Alcohol (PVA)	Water-soluble, organic solvent resistant, high temperature resistance.
Polyurethane	Abrasion/scratch resistant, impact/puncture resistant, UV and corrosion resistant.
Polyvinyl Fluoride (eg., Tedlar®)	Excellent weather resistance, excellent long-term UV resistance, thin yet stiff feel.
Cloth	
Cotton	Strong, easy tear by hand, soft and drapable.
Glass Cloth	Strong, high temperature resistance, flame-resistant.
Polyethylene Coated	Strong yet hand tearable, abrasion resistant, water-resistant, conformable.
Non-woven	
Fiber	Air permeable, strong enough to hold expanding foams.
Metals	
Aluminum	Heat and light reflective, moisture and chemical resistant, flame-resistant, outdoor weather resistant, conformable.
Lead	Electrically conductive, acid resistant, high conformability, x-ray opacity.
Rubber	
Neoprene	Abrasion resistant, die-cuttable.
Combination (Laminates)	
Paper/Polyethylene	Weather and chemical resistant, hand tearable, stretch resistant.
Metalized/Polyester	Reflective, decorative.
Glass Cloth/PTFE	High temperature resistance, high strength.
Glass Cloth/Aluminum	Very high temperature resistance, high strength.
Non-woven/Aluminum	High heat and cold resistance.

3M Pressure Sensitive Adhesives

Most of the products in this guide feature a 3M pressure sensitive adhesive that bonds the backing to another surface on contact. Each adhesive has different characteristics that affect production and end use performance.

Adhesives			
Rubber	**Standard Acrylic**	**Modified Acrylic**	**Silicone**
High initial bond	Moderate initial bond	Bonds to wider variety than standard acrylic	Fair initial bond
Softer	Firmer	Softer	Very firm
Widest variety of surfaces including low surface energy materials*	High surface energy*	Many surfaces	Fewer surfaces
Up to 350˚F	Up to 450˚F	Up to 300˚F	Up to 600˚F, excellent low temperature performance
Fair chemical resistance	Excellent chemical resistance	Good chemical resistance	Excellent chemical resistance
Fair UV resistance	Excellent UV resistance	Moderate UV resistance	Excellent UV resistance
Poor aging	Excellent aging	Durable	Excellent aging
Removable	Permanent	Various	Removable
Good solvent resistance	Excellent solvent resistance	Good solvent resistance	Excellent solvent resistance

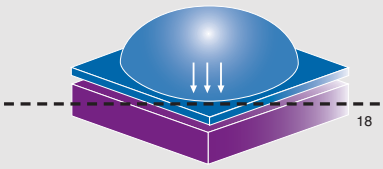
***Surface energy** ranges from high to low. To illustrate the concept of surface energy, think of water on the unwaxed hood of a car. The unwaxed hood has high surface energy and water on the hood flows into puddles. In comparison, a waxed hood has low surface energy and the water beads up rather than flows out. Similar to water, adhesive on a high surface energy surface flows and "wets out" the surface. "Wetting out" is required to form a strong bond.

As a rule of thumb, the higher the surface energy, the greater the strength of adhesion.

Specially formulated adhesives are available for low surface energy surfaces. The following illustrations and surface rankings give you an idea of relative surface energy.

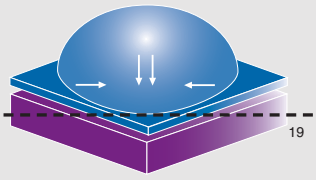
Regardless of surface energy, the substrate must be unified, dry, and clean to maximize adhesive contact.

Metal Surfaces (High Surface Energy)



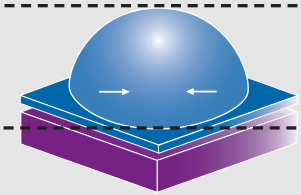
mJ/m²	Surfaces	mJ/m²	Surfaces
1103	Copper	526	Tin
840	Aluminum	458	Lead
753	Zinc	700-1100	Stainless Steel
		250-500	Glass

High Surface Energy Plastics (*HSE*)



mJ/m²	Surfaces	mJ/m²	Surfaces
50	Kapton® Industrial Film	43	Polyurethane Paint
47	Phenolic	42	ABS
46	Nylon	42	Polycarbonate
45	Alkyd Enamel	39	PVC Rigid
43	Polyester	38	Noryl® Resin
43	Epoxy Paint	38	Acrylic

Low Surface Energy Plastics (*LSE*)



mJ/m²	Surfaces	mJ/m²	Surfaces
37	PVA	31	Polyethylene
36	Polystyrene	29	Polypropylene
36	Acetal	28	Polyvinyl Fluoride Film
33	EVA	18	PTFE Fluoropolymer

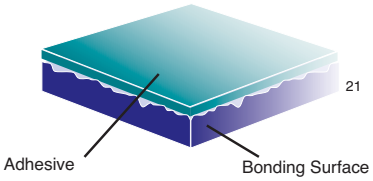
Note: These values are provided as a guide. Formulation modifications can substantially alter surface energies.

Adhesive Surface Contact

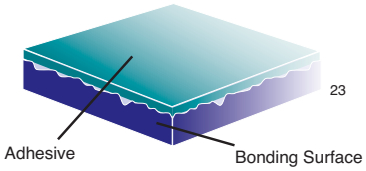
Applying firm pressure to the bond increases adhesive flow and contact for more secure bonding.

Time and temperature will typically further increase contact and adhesion values.

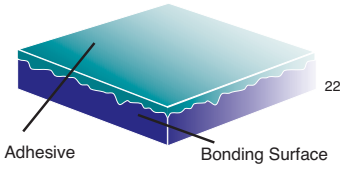
1. Initial Contact (Minimal Contact)

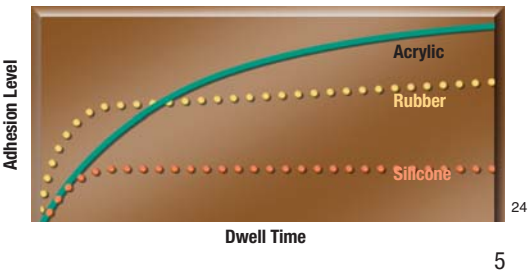


2. After Rubdown (More Contact)



3. After Dwell Time (Excellent Contact)



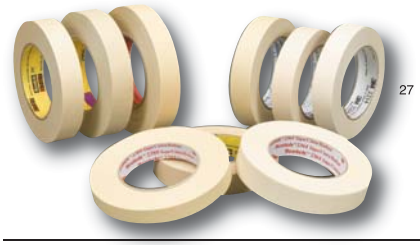


3M™ Masking Tapes – Crepe

Holding power, line sharpness, and removal the way you want

In this simplified line, you will find a range of such characteristics as adhesive holding power, line sharpness, and clean removal to meet different application requirements for virtually every industrial and consumer application. 3M products also feature...

- Instant adhesion at a touch
- Easy tear without stretching or pulling
- Controlled unwind...not too easy or too hard
- Conformability to stretch and adhere around curves



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For best-in-class holding power for critical lines and clean removal, 3M™ Masking Tape 231 offers an optimum combination of characteristics for highly valued products or processes.

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A quick easy wrap of 3M™ Masking Tape bundles plastic or metal pipes and other items. Select from wide range of temperature resistance to meet storage or transport conditions.

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For attaching production records during assembly, warranty cards, or other temporary communications, 3M™ Masking Tapes 203, 2307, 200, and 2214 are cost-effective options.

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For composite masking, 3M fine line (see page 8) overtapes 3M crepe masking tape for gelcoat color separation.

Streamlined selection

In the guide below you will quickly find solutions for most industrial applications. If not, many other 3M masking tapes are available for more specialized requirements (see the following pages).

Five questions to make 3M™ Masking Tape selection as easy as I, II, III

1. What is your application?
2. To what temperature will the tape be exposed during use?
3. Do you need maximum holding power during use?
4. Do you need maximum paint edge sharpness when the tape is removed?
5. Do you want to remove the tape without slivering and adhesive residue?

CLASS I MASKING

Tapes with best-in-class holding power for critical paint lines and clean removal on high valued products or processes.

Product number		
2693	up to 325°F	(163°C)
231	up to 300°F	(149°C)
232	up to 250°F	(121°C)

CLASS II MASKING

Tapes with reliable masking and clean removal on surfaces for functional coatings or paints; splicing; heavy duty maintenance.

Product number		
2380	up to 325°F	(163°C)
2364	up to 300°F	(149°C)
234	up to 250°F	(121°C)

CLASS III MASKING

Tapes with clean removal for light duty bundling, attaching, and labeling.

Product number		
2307	up to 200°F	(93°C)
200	up to 200°F	(93°C)
2214	up to 150°F	(66°C)

Increasing Holding Power, Line Sharpness, and Clean Removal

Increasing Temperature Performance*

*30-min. bake

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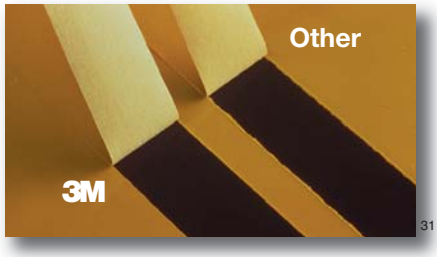
Product Information:

Product	Tape Structure (Backing/Adhesive)	Color	Total Thickness mils (mm)	Adhesion oz./in. (N/100 mm)	Tensile Strength lbs./in. width (N/100 mm)	Elongation at Break %	Temperature Range °F (°C)	Comments
Low Temperature (Holding, Bundling and Sealing)								
200	Crepe Paper/Rubber	Tan	4.4 (0.11)	25 (27)	19 (333)	8	Up to 200°F (93°C)*	Good instant adhesion.
203[1]	Crepe Paper/Rubber	Tan	4.7 (0.12)	28 (31)	22 (385)	8	Up to 200°F (93°C)**	Good price/value relationship.
2209	Crepe Paper/Rubber	Tan	5.1 (0.13)	22 (24)	23 (403)	10	Up to 150°F (66°C)*	Most economical light duty holding and sealing.
2214	Crepe Paper/Rubber	Tan	5.2 (0.13)	22 (24)	22 (385)	9	Up to 150°F (66°C)*	Good for holding and bundling.
2307[1]	Crepe Paper/Rubber	Tan	5.2 (0.13)	28 (31)	23 (403)	8	Up to 200°F (93°C)*	Solvent-free construction; non-critical paint masking.
[1]Meets ASTM D6123/D6123M-97 *Up to 30 minutes **Up to 60 minutes								
Medium Temperature (Paint Masking)								
202[1]	Crepe Paper/Rubber	Tan	6.3 (0.16)	41 (44)	27 (472)	8	Up to 250°F (121°C)*	Good holding power.
232[1]	Crepe Paper/Rubber	Tan	6.3 (0.16)	41 (44)	27 (472)	8	Up to 250°F (121°C)*	Good paint lines.
234[1]	Crepe Paper/Rubber	Tan	6.0 (0.15)	34 (37)	27 (472)	8	Up to 250°F (121°C)*	Excellent control unwind.
2308[1]	Crepe Paper/Rubber	Tan	5.3 (0.13)	35 (38)	22 (385)	10	Up to 250°F (121°C)*	Good transfer resistance.
[1]Meets ASTM D6123/D6123M-97 *Up to 30 minutes								
High Temperature (Paint Masking)								
213[1]	Crepe Paper/Rubber	Tan	6.5 (0.16)	41 (45)	30 (525)	9	Up to 350°F (177°C)*	Good on anodized aluminum.
214[1]	Crepe Paper/Rubber	Tan	6.7 (0.17)	27 (29)	24 (420)	10	Up to 350°F (177°C)*	Stain resistant.
231/231A[1]	Crepe Paper/Rubber	Tan	7.6 (0.19)	38 (41)	28 (490)	10	Up to 300°F (149°C)*	Best all-purpose paint masking tape.
2364[1]	Crepe Paper/Natural Synthetic/Rubber Blend	Tan	6.5 (0.165)	36 (39)	30 (525)	10	Up to 300°F (149°C)*	Cost effective, high temp performance.
2380[1]	Crepe Paper/Natural Synthetic/Rubber Blend	Tan	7.5 (0.19)	43 (47)	27 (472)	10	Up to 325°F (163°C)*	High temperature. Best holding to widest variety of surfaces.
2393[1]	Mini-Crepe Paper/ Rubber	Tan	7.6 (0.185)	32 (36)	28 (490)	11	Up to 325°F (163°C)*	Low holding; use where clean removal is a problem.
2693[1]	Mini-Crepe Paper/ Synthetic	Tan	8.5 (0.21)	46 (50)	26 (455)	10	Up to 325°F (163°C)*	Very aggressive holding; excellent for multi-bake paint cycles.

[1]Meets ASTM D6123/D6123M-97 *Up to 30 minutes

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



Some masking tapes leave a ragged paint edge that may require rework. 3M™ Masking Tapes feature a thin, smooth backing for a sharp paint line.

With sliver-resistant crepe backing, 3M™ Masking Tapes peel off neatly without breaking into pieces. Saves time and work for removal.

With an engineered balance of crepe and adhesive, 3M™ Masking Tapes conform to compound surfaces and around curves without tearing the backing.

3M™ Masking Tapes – Fine Line, Flatback, and Specialty

Holding power, line sharpness, and removal the way you want

With a core capability of coating technology, 3M combines paper or film backings with different adhesives for demanding applications.

3M™ Fine Line Tapes

- Sharpest possible paint lines
- Conformability to stretch and adhere around sharp curves
- Film or vinyl backings flex easily for creating curved paint edges
- Resist edge lifting

3M™ Flatback Tapes

- High strength paper backing for surface protection when applying thick-coat paint or caulk
- Versatile for many holding, edging, binding, and splicing applications requiring easy visibility

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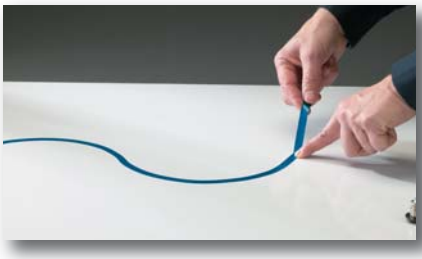
A combination of 3M™ Fine Line Masking Tape and 3M™ Crepe Masking Tape readies a motorcycle gas tank for custom painting that creates a sharp, high impact graphic image.



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With blue vinyl backing and rubber adhesive, 3M™ Fine Line Masking Tape 4737S offers best-in-class conformability and line sharpness for curves in high value processes.

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For splicing paper or fabric, 3M™ Flatback Tapes provide high machine direction tensile strength and easy cross tear. Rubber adhesive holds securely on materials ranging from kraft paper to nonwoven fabric.

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With a specialty processed film backing, 3M™ Fine Line Masking Tape 218 tapes over fresh paint sooner than crepe tapes with less chance of imprint damage.

Streamlined selection

In the guide below you will quickly find fine line and flatback solutions for most industrial applications. If not, other 3M masking tapes are available for more specialized requirements. See the next page.

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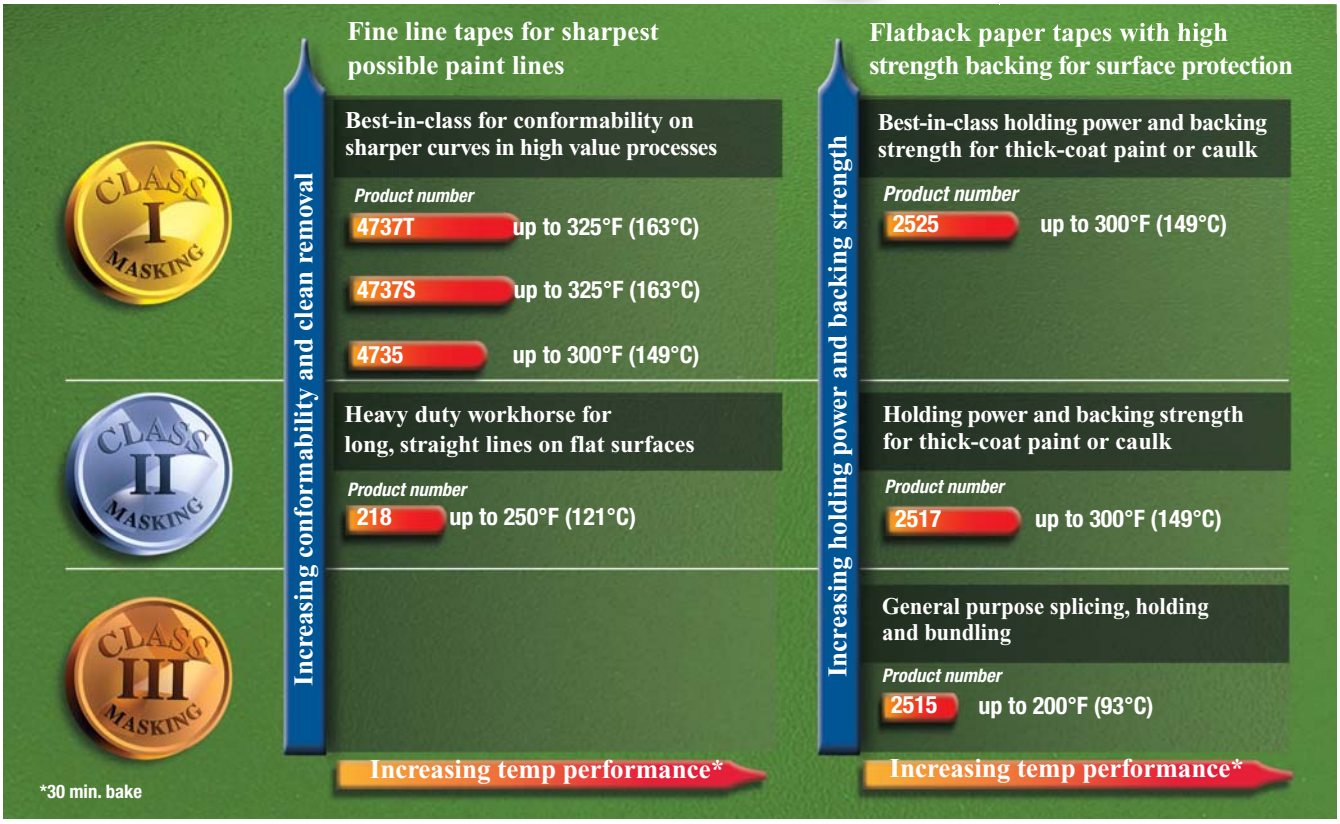

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Product Information:

Product	Tape Structure (Backing/Adhesive)	Color	Total Thickness mils (mm)	Adhesion oz./in. (N/100 mm)	Tensile Strength lbs./in. width (N/100 mm)	Elongation at Break %	Temperature Range °F (°C)	Comments
Fine Line Masking Tapes								
215	Plastic Film/Rubber	Blue	4.7 (0.12)	42 (46)	10 (175)	830	Up to 250°F (121°C) Up to 30 min.	Medium temperature. Excellent conformability.
218	Matte Finish, Polypropylene Film/Rubber	Green	5.0 (0.13)	37 (40)	13 (228)	720	Up to 250°F (121°C) Up to 30 min.	Medium temperature. conformability yet good for straight.
222	Polyester Film/Acrylic	White	2.4 (0.06)	24 (26)	26 (455)	127	Up to 325°F (163°C) Up to 1 hour	High temperature. Thin low profile lines.
265	Matte Finish, Polypropylene	Green	5.1 (0.13)	21 (23)	21 (368)	881	Up to 200°F (121°C) Up to 30 min.	In-mold composite masking where sharp, clean, gel-coat color separation lines are desired.
4735	Vinyl Film/Rubber	Orange	5.5 (0.14)	15 (16)	15 (260)	130	Up to 300°F (149°C) Up to 30 min.	High temperature. More comfortable than 4737.
4737S	Vinyl Film/Rubber	Blue (opaque)	5.1 (0.13)	14 (15)	14 (245)	150	Up to 325°F (163°C) Up to 1 hour	High temperature.
4737T	Vinyl Film/Rubber	Blue (translucent)	5.1 (0.13)	14 (15)	16 (280)	150	Up to 325°F (163°C) Up to 30 min.	High temperature. Good conformability.
Flatback Tapes								
250	Flat Stock Paper/ Rubber	Tan	5.9 (0.15)	70 (77)	58 (1016)	4	Up to 200°F (93°C) Up to 30 min.	Meets ASTM D6123M-97* Used in paint adhesion testing.
256	Flat Stock Paper/ Rubber	Red/White/ Green	6.7 (0.17)	25 (27)	20 (350)	5	Up to 200°F (93°C) Up to 30 min.	Printable, accepts marking inks.
2515	Flat Stock Paper/ Rubber	Tan	6.7 (0.17)	55 (60)	36 (630)	3	Up to 200°F (93°C) Up to 30 min.	General purpose splicing, holding and bundling applications.
2517	Flat Stock Paper/ Rubber	Tan	6.4 (0.16)	78(85)	35 (543)	2	Up to 300°F (149°C) Up to 30 min.	Excellent splicing, holding and bundling applications.
2525	Flat Stock Paper/ Rubber	Orange	9.5 (0.241)	69 (75)	49 (858)	2	Up to 300°F (149°C) Up to 30 min.	Premium splicing, bright color.
2526	Flat Stock Paper/ Rubber	White	9.8 (0.242)	69 (75)	50 (858)	4	Up to 300°F (149°C) Up to 30 min.	Excellent adhesion and strength for textile applications.
Specialty Masking Tapes								
225	Crepe Paper/Rubber		5.8 (0.15)	33 (36)	21 (368)	9	Up to 200°F (93°C) Up to 30 min.	Outdoor
226	Polyethylene Saturated Crepe Paper/Rubber	Tan	10 (0.25)	40 (43)	30 (526)	8	Up to 250°F (121°C) Up to 30 min.	Outdoor
2510	Black Crepe Paper/ Rubber	Tan	5.6 (0.14)	35 (37)	20 (350)	9	Up to 200°F (93°C) Up to 1 hour	Indoor
2497ST	Polyester/Rubber	Transparent	3.3 (0.09)	17 (18)	52 (910)	112	Up to 300°F (149°C) Up to 30 min.	High temperature. Tear-resistant backing.
5903	Polyethylene/ Synthetic rubber	Red	7.0 (0.18)	81 (89)	23 (403)	72	Up to 200°F (93°C)	UV and weather resistant for outdoor masking, holding, patching,bundling, marking and more. 30-day clean removal.

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

3M™ Masking Tapes – Large Area Masking Systems

Gross masking for large area protection against overspray and incidental direct spray

For large area coverage, 3M provides a choice of tape types and sizes and gross masking materials. Combine your choice of components into a reliable, cost-effective system for applications in aerospace, automotive, farm implement, buses, marine, and more.

3M™ Masking Tapes

- Crepe tapes ranging in widths from 1/2" to 3" to hold gross masking in place
- Fine line vinyl or film tapes in widths from 1/4" to 4" for a sharp paint line at the edge of gross masking

3M™ Gross Masking Materials

- Paper or film sheets for applications less than 36" wide
- Film sheeting for applications up to 240" wide
- Film bags up to 96" wide

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With the robust paint system and process for farm implements, 3M™ Large Area Masking Paper 6700 offers best-in-class protection for no bleed through and paint flaking.

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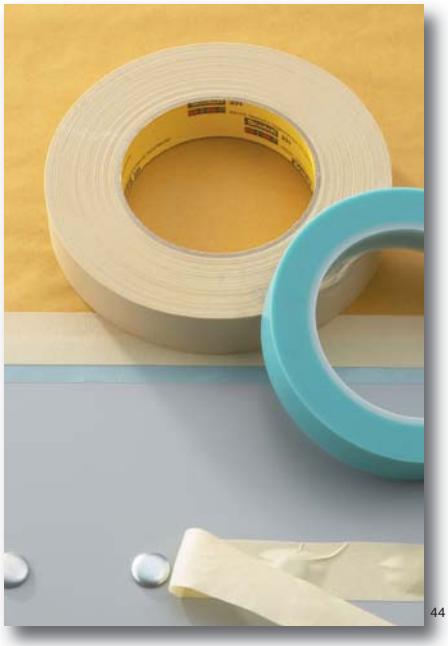
A paint masking system for the plastic fairing of a motorcycle, combines 3M™ Large Area Masking Paper with 3M™ Crepe Masking Tape 231 and 3M™ Fine Line Masking Tape 218.



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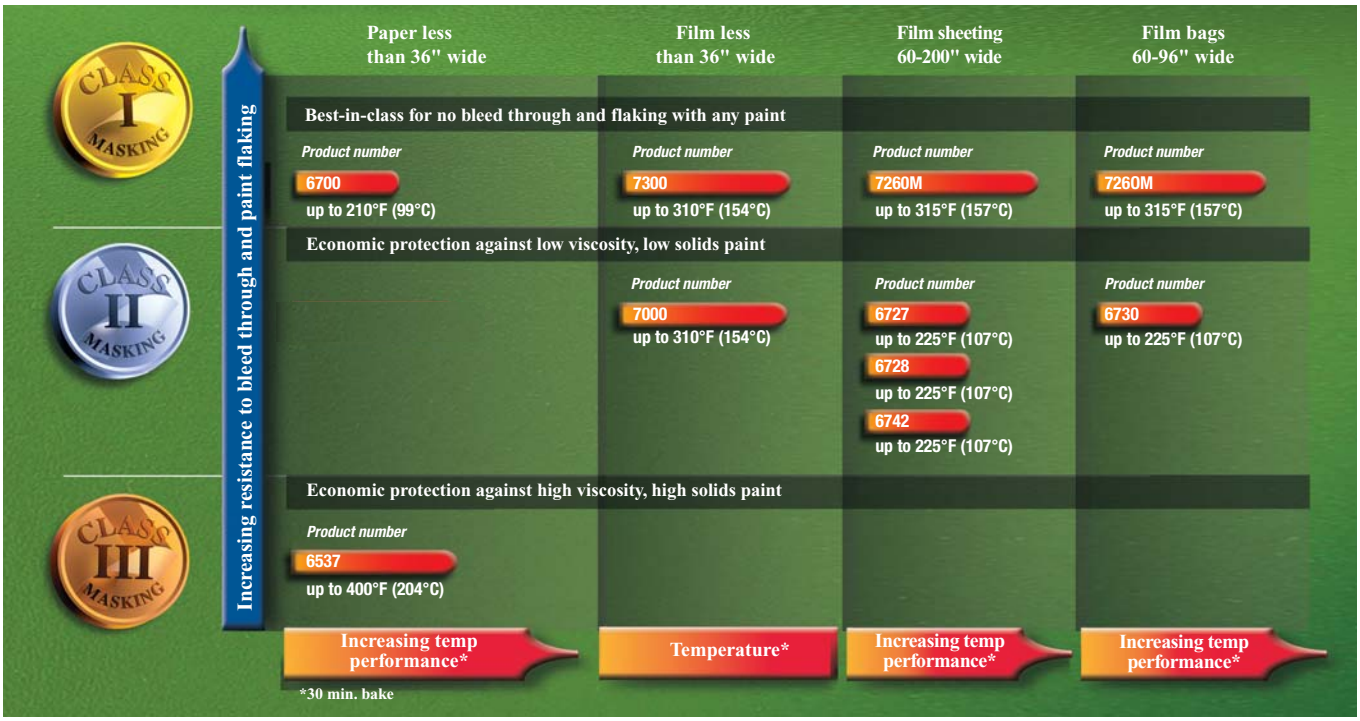
3M™ Fine Line Masking Tape 4737T applied over the edge of 3M™ Crepe Masking Tape 231, provides a sharp line for painting a truck panel. The crepe tape holds gross masking product in place.

Streamlined selection

In the guide below, you will quickly find large area masking solutions for most industrial applications. If not, other 3M large area products are available for more specialized requirements. See the next page.



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Product Information:

Product/ Color	Paper/Film Structure	Basic Weight lbs.	Total Thickness mils (mm)	Machine Direction Tensile Strength lbs./in. width (N/100 mm)	Cross Direction Tensile Strength lbs./in. width (N/100 mm)	Elongation at Break %	Temperature Range °F (°C)
Large Area Masking Paper							
White							
6537 6539 6538 6540	Treated Paper	24	2.2 (0.056)	18 (315)	20 (350)	NA	400°F (204°C)
Gray							
6503 6518 6506 6524 6509 6536 6512	Steel Gray Colored Paper	30	2.6 (0.066)	27 (473)	28 (490)	NA	400°F (204°C)
Gold							
6706 6732 6712 6736 6718 6738	Specially Coated Paper	27	2.0 (0.05)	17 (298)	22 (385)	NA	225°F (107°C) Up to 30 min.

Product/ Color	Paper/Film Structure	Gauge mils (mm)	Emboss Gauge mils (mm)	Machine Direction Tensile Strength lbs./in. width (N/100 mm)	Cross Direction Tensile Strength lbs./in. width (N/100 mm)	Elongation at Break %	Temperature Range °F (°C)
Large Area Masking Film and Bags							
6700 Paint Repair Bags	Low Density Polyethylene	1.0 (0.025)	—	3.0 (52)	3.0 (52)	400	Up to 210°F (100°C)
6727 Film	High Density Polyethylene	0.34 (0.009)	0.34 (0.009)	2.5 (44)	1.8 (32)	300	Up to 225°F (107°C)
6728 Film	High Density Polyethylene	0.34 (0.009)	0.34 (0.009)	2.5 (44)	1.8 (32)	300	Up to 225°F (107°C)
6730 Paint Repair Bags	High Density Polyethylene	0.7 (0.018)	—	6.2 (108)	4.3 (75)	400	Up to 225°F (107°C)
6742 Film	High Density Polyethylene	0.34 (0.009)	0.34 (0.009)	2.5 (44)	1.8 (32)	300	Up to 225°F (107°C)
7000 Film/Tan	Textured Polypropylene	2.7 (0.07)	4.2 (0.11)	11 (190)	10.0 (175)	600	Up to 310°F (155°C)
7260M OEM Paint Repair Bag and Film Sheeting	Soft Polypropylene	1.6 (0.048)	1.8 (0.046)	7.5 (131)	5.0 (88)	700	Up to 315°F (157°C)
7300 Film	Textured Soft Polypropylene	2.0 (0.05)	2.9 (0.07)	8.8 (154)	4.7 (82)	600	Up to 310°F (155°C)

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

3M™ Dispensers For Large Area Masking


46

Scotch® Cart Masker 06781
Dispenses one apron of any length up to 18 in. wide on each of two levels.


47

3M™ Overspray Protective Sheet Masker 06780
Portable masker designed to dispense 3M™ Overspray Protective Sheeting and 3M™ Paintable Plastic Sheeting. Allows for easy hand cutting of plastic sheeting.


48

Scotch® Slimline Apron Taper 06864
Dispenses three widths of masking paper up to 18 in. wide. Side hooks hold different tape widths for special needs.


49

Scotch® Apron Taper 18" 06865
Dispenses single aprons up to 18 in. wide.


50

Scotch® Apron Taper 36" 06866
Dispenses single aprons up to 36 in. wide.

3M Tape Dispenser replacement parts:
Dispenser Parts
241 Venture Drive
Amery, WI 54001
Phone: 1-800-344-9883
Fax: 715-268-8153

Replacement blades:
Atscott Manufacturing Company, Inc.
1150 Holstein Drive N.E.
Pine City, MN 55063
Phone: 320-629-2501, ext. 116
www.atscott.com

3M™ Masking – Specialized applications

Special performance attribute		2209	2214	200	203	2510	2090	2307	2060	235	2308	225	226*	232	234	231	2364	2380	2693	2393	214	213
Color	Tan	R	R	R	R			R			R			R	R	R	R	R	R	R	R	R
	Black					R				R			R									
	Green								R													
	Silver											R										
	Blue						R															
Hold to and clean removal from specialty surfaces	Stainless steel	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
	Anodized aluminum																		R	R		R
	Alodine aluminum													R	R				R			
	Phosphate primer															R	R	R		R		
	Chemlease primer																			R		
	Zinc primer															R	R	R		R		
	Nickel plating																			R		
	Brass																				R	
	Copper																				R	
	Silver/silver plate																				R	
	Polycarbonate plastic						R															
	EPDM rubber						R				R			R	R					R		R
	Most powder coated paints	R	R	R	R	R		R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Holding strength to common surfaces i.e. steel, paints	Low	R	R				R													R		R
	Medium			R	R	R		R	R	R	R	R				R	R				R	
	High												R	R	R			R	R			
Paint line	Good	R	R	R	R	R															R	
	Better						R	R	R	R	R	R			R		R					R
	Best												R	R		R		R	R	R		
Sunlight/outdoor exposure	Up to 7 days on glass						R															
	Up to 3 days opaque surface								R		R			R	R							
	Up to 30 days opaque surface											R										
	Up to 90 days opaque surface												R									
Increasing temperature performance (30 min. bake)		up to 150°F (66°C)		up to 200°F (93°C)						up to 250°F (121°C)							up to 300°F (149°C)		up to 325°F (163°C)		up to 350°F (177°C)

"R" is recommended

*Laminate of crepe paper/polyethylene

*NOTE: The technical information and data provided above is a general guide only and should be considered representative or typical only and should not be used for specification purposes.

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Environmental Highlights of 3M™ Masking Tapes

Product Name	Environmental Claim/Attribute
3M™ Paper Masking Tape 200	Uses solvent free manufacturing process. In addition, this product meets the heavy metals content as stated in Article 11 of European Directive 94/62/EC on packaging and packaging waste and the laws based on CONEG model legislation.
3M™ General Purpose Masking Tape 203	Uses solvent free manufacturing process. In addition, this product meets the heavy metals content as stated in Article 11 of European Directive 94/62/EC on packaging and packaging waste and the laws based on CONEG model legislation.
Scotch® Paint Masking Tape 231/231A	Greater than 95% of the organic solvents used in manufacturing this product are recovered and used again. In addition, this product meets the heavy metals content as stated in Article 11 of European Directive 94/62/EC on packaging and packaging waste and the laws based on CONEG model legislation.
3M™ Masking Tape 2307	Uses solvent free manufacturing process. In addition, this product meets the heavy metals content as stated in Article 11 of European Directive 94/62/EC on packaging and packaging waste and the laws based on CONEG model legislation.
Scotch® Masking Tape 2308	Uses solvent free manufacturing process. In addition, this product meets the heavy metals content as stated in Article 11 of European Directive 94/62/EC on packaging and packaging waste and the laws based on CONEG model legislation.
Scotch® General Purpose Masking Tape 234	Uses solvent free manufacturing process. In addition, this product meets the heavy metals content as stated in Article 11 of European Directive 94/62/EC on packaging and packaging waste and the laws based on CONEG model legislation.

Product Name	Environmental Claim/Attribute
Scotch® Performance Masking Tape 232	Uses solvent free manufacturing process. In addition, this product meets the heavy metals content as stated in Article 11 of European Directive 94/62/EC on packaging and packaging waste and the laws based on CONEG model legislation.
Scotch® Premium High Performance Masking Tape 2393	Greater than 95% of the organic solvents used in manufacturing this product are recovered and used again. In addition, this product meets the heavy metals content as stated in Article 11 of European Directive 94/62/EC on packaging and packaging waste and the laws based on CONEG model legislation.
Scotch® Performance Masking Tape 2380	Greater than 95% of the organic solvents used in manufacturing this product are recovered and used again. In addition, this product meets the heavy metals content as stated in Article 11 of European Directive 94/62/EC on packaging and packaging waste and the laws based on CONEG model legislation.
Scotch® Performance Masking Tape 2364	Greater than 95% of the organic solvents used in manufacturing this product are recovered and used again. In addition, this product meets the heavy metals content as stated in Article 11 of European Directive 94/62/EC on packaging and packaging waste and the laws based on CONEG model legislation.
Scotch® High Performance Masking Tape 2693	Greater than 95% of the organic solvents used in manufacturing this product are recovered and used again. In addition, this product meets the heavy metals content as stated in Article 11 of European Directive 94/62/EC on packaging and packaging waste and the laws based on CONEG model legislation.

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3M™ Duct Tapes and Cloth Tapes

Dependability and versatility for bundling, sealing, reinforcing, and more

This family of rugged cloth and duct tapes adheres to most surfaces for applications ranging from bundling to moisture proofing, sealing to splicing, reinforcing to hanging poly drapes. Features include:

- Hand tearable
- High tensile strength
- Conformability

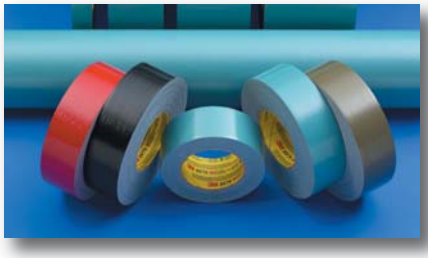
Latest innovation in the line – clean removal plus long life indoors and out

The line includes 3M™ Performance Plus Duct Tape 8979 and nuclear grade 8979N... the best performing 3M™ Duct Tapes under the sun:

- Remove cleanly for up to six months from most opaque surfaces even after exposure to sun and outdoor weathering
- Stay on for up to one year without deterioration
- Save time and hassle of removing sticky or dried-on residue
- Strong waterproof backing resists wear, abrasion, moisture, and weathering

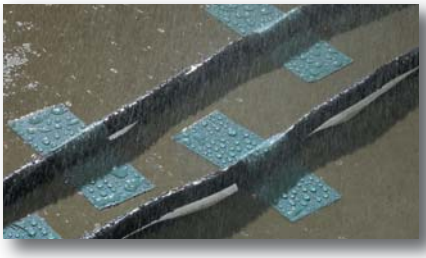
53

For temporary capping of pipes or conduit, 3M™ Performance Plus Duct Tapes 8979 and 8979N conform and adhere to metal and plastic. Strong backing keeps out water and dirt for up to a year even in outdoor storage.



54

3M™ Performance Plus Duct Tape 8979 is available in slate blue, olive, and black for color coding. Nuclear grade is available in slate blue and red. A range of widths provides choices in coverage from 24mm to 22".



55

Waterproof backing of 3M™ Performance Plus Duct Tape 8979 resists moisture and rain for up to a year.

56

Write on the surfaces of many 3M™ Duct Tapes with pen or marker to leave a reminder or mark and identify works-in-progress, components, items bundled, and more.

57

For a tight seal in many containment situations, 3M™ Performance Plus Duct Tape 8979 attaches heavy poly draping, closes cuffs, and then removes cleanly when the job is finished.

58

Strong backing of 3M™ Outdoor Masking and Stucco Tape 5959 pulls through stucco, EIFS, and other heavy coatings in one piece.

59

For bundling a wide variety of items, 3M™ Duct Tapes with natural rubber adhesive and high tensile strength backings adhere on contact and hold securely.

Product Information:

Product	Color(s)	Tape Structure (Backing/Adhesive)	Total Thickness mil (mm)	Adhesion to Steel oz/in N/100mm	Tensile Strength at Break, lb/in (N/100mm)	Elongation at break (%)	Temperature Resistance °F (°C)	Comments
Best in class tapes for indoor/outdoor use, offering clean removal and long term weatherability								
8979	Black, Olive, Slate blue	Polyethylene over cloth scrim/rubber	12.6 (0.33)	52 (57)	36 (643)	21	Up to 200°F (93°C)	Up to 6 months clean removal from most opaque surfaces indoors or outdoors. Will not delaminate or deteriorate for up to a year. Excellent water resistance. Unique slate blue color lets customer know they have used the right tape. Tested according to UL 723, HUD and BOCA Codes.
8979N	Slate blue, Red	Polyethylene over cloth scrim/rubber	12.6 (0.33)	52 (57)	36 (643)	21	Up to 200°F (93°C)	Same features as 8979 and meets ASME NQA-1(supercedes ANSI N45.2.2 and NRC 1.38 Para. 2C Div A3.5. (1)(A)) and MIL-STD-2041D(SH). Copy of certificate in each carton. Tested according to UL 723, HUD and BOCA Codes.
5959	Red	Polyethylene over cloth scrim/rubber	12.0 (0.30)	53 (58)	35 (613)	21	Up to 200°F (93°C)	High tensile strength backing protects against stucco, EIFS, and other heavy coatings and pulls through in one piece for removal. 90 day clean removal from most opaque surfaces.
Heavy duty tapes for demanding contractor, MRO and industrial job site applications								
6969	Black, Olive, Silver	Polyethylene over cloth scrim/rubber	10.7 (0.27)	61 (66)	32 (560)	16	Up to 200°F (93°C)	Industrial grade duct tape, thick adhesive layer sticks to rough surfaces. Tested according to UL 723, HUD and BOCA Codes.
3939	Silver	Polyethylene over cloth scrim/rubber	9.0 (0.23)	55 (60)	25 (438)	17	Up to 200°F (93°C)	Variety of widths, versatile for many applications. Tested according to UL 723, HUD and BOCA Codes.
3900	Black, Blue, Olive, Red, Silver, White, Yellow	Polyethylene over cloth scrim/rubber	7.7 (0.19)	56 (62)	22 (385)	15	Up to 200°F (93°C)	General purpose duct tape, temporary repairs, color-coding. Tested according to UL 723, HUD and BOCA Codes.
Utility and general use tapes for lighter duty applications								
3903	Black, Blue, Gray, Green, Red, White, Yellow	Vinyl/rubber	6.3 (0.16)	20 (21)	14 (245)	150	Up to 250°F (121°C)	General purpose duct tape for color coding and marking. Embossed vinyl backing for easy tear.
2929	Silver	Polyethylene over cloth scrim/rubber	6.0 (0.152)	45 (49.2)	19 (333.4)	14	Up to 200°F (93°C)	Utility grade duct tape for temporary repairs, sealing, holding and marking.
1900	Silver	Polyethylene over cloth scrim/rubber	5.8 (0.147)	58 (63.5)	16 (280.2)	12	Up to 200°F (93°C)	Economical choice for sealing, holding and marking.
Specialized cloth products								
380	Natural	Cotton cloth/rubber	10.5 (0.27)	38 (42)	47 (822)	6	Up to 200°F (93°C)	Printable backing, finger protection, protection during shipping.
390	Olive, Silver	Polyethylene coated cloth/rubber	12 (0.30)	73 (80)	50 (876)	12	Up to 200°F (93°C)	Highest tensile for most demanding jobs, olive for military requirements.
393	Silver	Polyethylene coated cloth/rubber	12 (0.30)	95 (104)	36 (632)	8	Up to 200°F (93°C)	Highest adhesion, easy tear, for moisture proofing, duct and insulation sealing.
6910	Black, Silver	Vinyl coated cloth/ rubber	12 (0.30)	45 (49)	45 (788)	5	Up to 200°F (93°C)	Matte finish tape for low light reflectance, excellent grip/gaffer's tape, use for surface protection during light bead blasting or shot peening.

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61

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

Scotch® and Tartan™ Box Sealing Tapes

Technology that really delivers

The full job of a package is containment, protection, and communication. And the best case scenario is when you can put that package to work more efficiently and productively. 3M Industrial Adhesives and Tapes Division represents more than half a century of experience helping companies worldwide improve the performance of packages and packaging operations.

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Delivering quality with tapes that keep production lines moving with less interruption and ensure packages are sealed on arrival.

- 3M tapes can typically wrap the world 3.5 times
- Cost savings with fewer rejected shipments

Delivering service and support to help you select the right 3M product for your application.

- Certified ISTA Packaging Lab for 3M product consultation and testing
- On-site consultation with experienced 3M engineers and sales specialists

Delivering sustainability by caring for the environment now and for the future.

- 28% reduced energy consumption by per net output since 2000 based on 2008 U.S. plant data
- 60% reduced manufacturing landfill waste between 2004 and 2007

Delivering more – In addition to box sealing tapes, 3M is your resource for bundling, reinforcing, labeling, and other innovative packaging solutions.

Technology that solves common problems

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Easy unwind and high initial adhesion of Scotch® Box Sealing Tapes reduce tabbing downtime and rework.

65

Initial adhesion and subsequent holding power of Scotch® Box Sealing Tapes resist popping for secure sealing throughout a supply chain.

66

Scotch® Box Sealing Tapes close securely without the holes, waste, appearance, sharp points, and disposal of staples.

67

Scotch® Box Sealing Tapes stick on contact without the wet work of water-activated tape and the chance of loosening if re-exposed to water.

Tape Backing and Adhesive Selection Guide

Step 1. Select tape backing

Scotch® and Tartan™ Box Sealing Tapes offer backing choices for specific performance properties:

Polyester

- Strongest backing
- Excellent abrasion resistance
- Moisture and chemical resistance
- Highest temperature resistance
- Transparency

Polypropylene

- Strong backing
- Good abrasion resistance
- Good conformability
- Most economical
- Transparency

Step 2. Select tape adhesive

With Scotch® and Tartan™ Box Sealing Tapes you have two choices of pressure sensitive adhesive each with a different combination of properties. Both seal cartons reliably without the mess, dwell time, and equipment maintenance of hot melt adhesive.

Synthetic rubber

- Excellent holding power
- Good initial adhesion above 40°F
- Meets ASTM D-5486 government specification

Acrylic

- Excellent initial adhesion over a broad temperature range
- Extremely long performance life
- UV and chemical resistance

Box Sealing Tape Selector

Additional packaging and shipping factors should be considered when selecting a box sealing tape. To determine a product for testing, use this selector.

Circle the point value that best describes your operations.

	Point Value	POINTS
1. How much does the filled box weigh?		
a. 10 pounds	10	
b. 20 pounds	20	
c. 30 pounds	25	
d. 40 pounds	30	
e. 50 pounds	35	
f. 70 pounds	45	
g. 80 pounds	50	
h. 100 pounds	60	
2. What is the carton burst/ECT test?		
a. 150 SW/26	5	
b. 175 SW/29	10	
c. 200 SW/32	15	
d. 250 SW/40	20	
e. 275 SW/44	25	
f. 350 SW/55	30	
g. 200 DW/42	35	
h. 275 DW/48	40	
i. 350 DW/51	45	
3. What is the value of contents?		
a. <$100	10	
b. $100-$1000	25	
c. >$1000	40	
4. What is the method of shipment?		
a. Palletized and unitized	5	
b. Palletized but not unitized	15	
c. Single	30	
5. Type of carrier		
a. Company truck	5	
b. Commercial transport/LTL	15	
c. UPS/USPS/FEDEX	30	
TOTAL POINTS		

Choose an effective closure...choose 3M

Total Points	Scotch® Box Sealing Tape recommended for testing			
	#371	#372	#373	#375
205				72 mm
195				
180				
165			72 mm	48 mm
150				
135			48 mm	
120		72 mm		
105				36 mm
90	72 mm	48 mm	42 mm	
75				
60	48 mm	42 mm	36 mm	
45	42 mm	36 mm		
35	36 mm			
	#311	#313		#355

The suggestion provided by this method must be confirmed by testing. These suggestions are based on experience, but there are factors which could alter the overall performance. For example:

- Cartons with center seam gap greater than 3/4" or over packed/under packed cartons should be tested with 3" wide tape.
- Hard-to-stick-to surfaces, test Scotch® Box Sealing Tape 311, 313, 375
- Box sealing tapes are available custom printed and with standard messages.
- Applications when tape is applied under 40˚F, test Scotch® Box Sealing Tape 311, 313, and 3331.
- Total points adding to less than 35 should evaluate Tartan™ Box Sealing Tapes.

If your package is unusual in size, shape load, or contents, contact your 3M Sales Representative for customized help.

Scotch® and Tartan™ Box Sealing Tapes

Dependability for food and beverage, electronics, e-fulfillment, pharmaceuticals, and more

With choices of polyester or polypropylene backings and rubber or acrylic adhesives, you have dependability for a wide variety of box types, sizes, contents, handling situations, and storage conditions.

- Built tough to resist score line breaking and center seam splitting even when boxes are handled rough
- Reliability even with the stresses of over packed or under packed boxes
- Quick, easy application by hand, manual dispensers, or 3M-Matic™ Case Sealers
- Choice of lengths, widths, and colors to meet specific needs

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69

Scotch® Box Sealing Tapes with polyester backing and synthetic rubber adhesive resist moisture in storage and shipping.


70

In vacuum lift applications, Scotch® Box Sealing Tapes provide the necessary high initial holding power for secure closure.

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Consistent quality of Scotch® Box Sealing Tapes means less interruptions on your packaging line and a favorable response at the receiving end.

Product Information:

Product	Tape Structure (Backing/Adhesive)	Backing Thickness mils (mm)	Total Thickness mils (mm)	Adhesion to Steel oz./in. (N/100 mm)	Tensile Strength lbs./in. (N/100 mm)	Elongation at Break %	Comments
ASTM Test Method:		D-3652	D-3652	D-3330	D-3759	D-3759	
Scotch® Box Sealing Tape							
311	Polypropylene/Acrylic	1.1 (.028)	2.05 (.052)	22 (24)	25 (438)	—	Available in Clear and Tan
313	Polypropylene/Acrylic	1.6 (.041)	2.55 (.065)	24 (26)	35 (613)	—	Available in Clear and Tan
353	Polyester/Synthetic Rubber	1.0 (.025)	1.9 (.048)	45 (49)	25 (437)	110	Available in Clear and Tan
355	Polyester/Synthetic Rubber	2.0 (.051)	3.43 (.089)	78 (85)	67 (1174)	130	Available in Clear and Tan
371	Polypropylene/Synthetic Rubber	1.2 (.030)	1.9 (.048)	45 (44)	22 (385)	160	Available in Clear, Tan, Blue, Green, Orange, Red, White, and Yellow
372	Polypropylene/Synthetic Rubber	1.4 (.035)	2.2 (.056)	45 (49)	26 (455)	160	Available in Clear and Tan
373	Polypropylene/Synthetic Rubber	1.6 (.041)	2.5 (.064)	50 (55)	30 (525)	160	Available in Clear, Tan, Blue, Green, Orange, Red, White, and Yellow
375	Polypropylene/Synthetic Rubber	2.0 (.051)	3.1 (.079)	55 (60)	35 (613)	160	Available in Clear and Tan
Tartan™ Box Sealing Tape							
302	Polypropylene/Acrylic	1.0 (.025)	1.6 (.040)	18 (20)	23 (402)	116	Available in Clear and Tan
305	Polypropylene/Acrylic	1.0 (.025)	1.8 (.046)	—	21 (368)	—	Available in Clear and Tan
369	Polypropylene/Synthetic Rubber	1.0 (.025)	1.6 (.041)	30 (32)	19 (333)	160	Available in Clear and Tan

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

Scotch® and Tartan™ Specialty Box Sealing Tapes

Dependability for cold storage, gapped flap cartons, and more

Starting with the same dependability and durability of other Scotch® and Tartan™ Box Sealing Tapes, specialty tapes add specialized form and/or functional properties for specific applications in food and beverage, electronics, e-fulfillment, pharmaceuticals, and other markets.

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For box packing, sealing, and storage below 40°F, Scotch® Box Sealing Tape 3723 seals with a rubber adhesive modified for reliability in the cold.


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Scotch® Box Sealing Tape 3779 alerts receivers to unauthorized opening with a red "If Seal is Broken Check Contents Before Accepting."

Product Information:

Product	Tape Structure (Backing/Adhesive)	Backing Thickness mils (mm)	Total Thickness mils (mm)	Adhesion to Steel oz./in. (N/100 mm)	Tensile Strength lbs./in.	Elongation at Break %	Comments
ASTM Test Method:		D-3652	D-3652	D-3330	D-3759	D-3759	
Cold Temperature							
3721	Polypropylene/Modified Synthetic Rubber	1.2 (.030)	2.1 (.053)	35 (38)	22 (386)	160	Available in Clear
3723	Polypropylene/Modified Synthetic Rubber	1.6 (.041)	3.0 (.076)	45 (49)	30 (525)	160	Available in Clear
3331	Polypropylene/Modified Synthetic Rubber	1.1 (.028)	1.8 (.046)	31 (33)	24 (26)	150	Available in Clear, Custom Printed
Continuous Taping System							
3781	Polypropylene/Synthetic Rubber	1.2 (.030)	1.9 (.048)	40 (44)	22 (385)	160	Available in Clear
3782	Polypropylene/Synthetic Rubber	1.4 (.035)	2.2 (.056)	45 (49)	26 (455)	160	Available in Clear
3783	Polypropylene/Synthetic Rubber	1.6 (.041)	2.5 (.064)	50 (55)	30 (525)	160	Available in Clear
3785	Polypropylene/Synthetic Rubber	2.0 (.051)	3.1 (.079)	55 (60)	35 (613)	160	Available in Clear
Custom Printed							
355CP	Polyester/Synthetic Rubber	2.0 (.051)	3.43 (.089)	78 (85)	67 (1174)	130	Available in Clear and Tan
371CP	Polypropylene/Synthetic Rubber	1.2 (.030)	1.9 (.048)	45 (44)	22 (385)	160	Available in Clear, Tan, Blue, Green, Orange, Red, White, and Yellow
372CP	Polypropylene/Synthetic Rubber	1.4 (.035)	2.2 (.056)	45 (49)	26 (455)	160	Available in Clear and Tan
373CP	Polypropylene/Synthetic Rubber	1.6 (.041)	2.5 (.064)	50 (55)	30 (525)	160	Available in Clear, Tan, Blue, Green, Orange, Red, White, and Yellow
375CP	Polypropylene/Synthetic Rubber	2.0 (.051)	3.1 (.079)	55 (60)	35 (613)	160	Available in Clear and Tan
3743CP	Polypropylene/Synthetic Rubber	1.6 (.041)	2.6 (.066)	43 (47)	30 (525)	160	Available in Clear and Tan
Security Tape							
3199	Polypropylene/Acrylic	1.1 (.028)	2.05 (.052)	22 (24)	25 (438)	125	Clear with printed red message
3771	Polypropylene/Synthetic Rubber	1.2 (.030)	1.9 (.048)	45 (44)	22 (385)	160	White with printed red message: IF SEAL IS BROKEN CHECK CONTENTS BEFORE ACCEPTING
3772	Polypropylene/Synthetic Rubber	1.4 (.035)	2.2 (.056)	45 (49)	26 (455)	160	White with printed red message: FRAGILE HANDLE WITH CARE
3773	Polypropylene/Synthetic Rubber	1.6 (.041)	2.5 (.064)	50 (55)	30 (525)	160	White with printed red message: RUSH RUSH RUSH
3775	Polypropylene/Synthetic Rubber	2.0 (.051)	3.1 (.079)	55 (60)	35 (613)	160	White with printed red message: MIXED MERCHANDISE ENCLOSED
3779	Polypropylene/Synthetic Rubber	1.2 (.030)	1.9 (.048)	40 (44)	22 (385)	160	Clear with printed red message: CHECK SEAL BEFORE ACCEPTING
Serrated Tapes							
8460	Polypropylene/Acrylic	2.3 (.058)	3.5 (.089)	38 (41.5)	27 (306)	11	Easy to tear; good for combining applications
8484	Polypropylene/Rubber	1.9 (.048)	2.9 (.073)	50 (55)	21 (367)	6.5	Easy to tear; good for combining applications
8498	Polypropylene/Rubber	1.0 (.025)	1.9 (.048)	45 (49)	25 (437)	110	Easy to tear

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

Scotch® High Strength Filament Tapes

Three questions to make strength selection as easy as 1, 2, 3

1. What is your application?
Bundling, palletizing, non-RSC box closing, color coding, reinforcing, coil tabbing, unitizing, combining, securing, other.

2. How much tensile strength do you need?
Tensile strength is the tape's resistance to breakage when pulled from opposite ends.

3.What type of adhesive do you need?
Natural rubber for hard-to-stick-to surfaces, synthetic rubber for a variety of other surfaces, or clean removal.

Answers will probably take you to one of twelve 3M™ High Strength Tapes in the streamlined selection. If your application requires a unique solution or tape characteristic, please review the following pages.

Streamlined selection for application success

Product	Tensile Strength*
8932** Glass yarn reinforced	95 lbs./in.
8934** Glass yarn reinforced	100 lbs./in.
860** Tensilized polypropylene	110 lbs./in.
862 Tensilized polypropylene, polypropylene reinforced	120 lbs./in.

Product	Tensile Strength*
8898 Tensilized polypropylene, clean removal	160 lbs./in.
897 Glass yarn reinforced	170 lbs./in.
8651 Tensilized polypropylene, polypropylene reinforced, clear to see through	175 lbs./in.
880/880NR Polyester yarn reinforced, synthetic or natural rubber	270 lbs./in.

Product	Tensile Strength*
893 Glass yarn reinforced	300 lbs./in.
898/898NR Glass yarn reinforced, synthetic or natural rubber, first choice for L and C-clip closures of non-RSC boxes	380 lbs./in.
8919 Glass yarn reinforced, clean removal	380 lbs./in.
890 Glass yarn reinforced, natural rubber, high strength filament product	600 lbs./in.

* ASTM Test Method D-3759 ** Tartan Brand

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

Scotch® High Strength Tapes for Bundling and Reinforcing

Dependability from rerod to boxes

A wide range of Scotch® High Strength Tapes have been specifically developed for the bundling and reinforcing challenges of the food and beverage industry, oil and gas, pipe and conduit manufacturing, general manufacturing, distribution centers, metal working, and more.

- Choice of tape reinforcements, backings, and adhesives to match requirements for size/weight/surface demands.

82

Thickest backing and highest tensile strength in the line, Scotch® High Strength Filament Tape 890 secures rerods into easier handling bundles for transit and on the job site.

83

Scotch® Stretchable Tape 8886 applied with the 3M™ Stretchable Tape Wrapper ST1000 (page 34) stabilizes pallets of heavy produce boxes with strength and provides ventilation.

84

Scotch® Filament Tape 892 with glass yarn filaments bundles carpets with good initial adhesion and long-term holding power.

85

For tabbing large metal coil ends, Scotch® Filament Tape 880NR holds with high initial adhesion and shear strength to prevent unrolling.

86

Scotch® Filament Tape 898 reinforces heavily loaded corrugated fiber board boxes during rough shipping and handling.

Product	Backing	Reinforcement	Adhesive	Total Thickness mils (mm)	Adhesion to Steel oz./in. (N/100mm)	Tensile Strength lbs./in. N/100mm)	Color	Typical Use
ASTM Test Method:				D-3652	D-3330	D-3759		
860*	Black Tensilized Polypropylene	None	Synthetic Rubber Resin	2.8 (.071)	45 (49)	110 (1926)	Black	Strapping/Bundling
862	Tensilized Polypropylene	Polypropylene	Synthetic Rubber Resin	4.6 (.117)	50 (55)	120 (2101)	Clear/Black	Pipe Bundling
863	Tensilized Polypropylene	Polypropylene	Synthetic Rubber Resin	5.0 (.127)	60 (66)	155 (2714)	Clear	Palletizing, L-clips, Box Reinforcing
864	Tensilized Polypropylene	Polypropylene	Synthetic Rubber Resin	5.6 (.142)	67 (73)	190 (3327)	Clear	Box Closure, L-clips, Box Reinforcing
865	Tensilized Polypropylene	Polypropylene	Synthetic Rubber Resin	6.4 (.163)	74 (81)	240 (4202)	Clear	Box Closure, L-clips, Box Reinforcing
880	Scotchpro™ Film	Polyester Yarn	Synthetic Rubber Resin	7.7 (.196)	80 (88)	270 (4728)	Clear/Black/ Blue/Red	Pipe and Conduit, Bundling/Color Coding
880NR	Scotchpar™ Film	Polyester Yarn	Natural Rubber Resin	7.7 (.196)	60 (66)	270 (4728)	Clear	Metal Coil Tabbing
890	Scotchpar™ Film	Glass Yarn	Natural Rubber Resin	8.0 (.203)	45 (49)	600 (10506)	Clear/Black	Basiloid, Oil and Gas
890HD	Scotchpar™ Film	Glass Yarn	Natural Rubber Resin	11.3 (.287)	60 (65)	1200 (21000)	Clear	Flexible Pipe Reinforcement (Oil & Gas)
892	Scotchpro™ Film	Glass Yarn	Synthetic Rubber Resin	5.5 (.14)	60 (66)	170 (2977)	Clear	Carpet Bundling
893	Scotchpro™ Film	Glass Yarn	Synthetic Rubber Resin	6.0 (.152)	55 (60)	300 (5253)	Clear	Combining, Bundling/ Box Closing
894	Scotchpro™ Film	Glass Yarn	Synthetic Rubber Resin	6.0 (.152)	55 (60)	300 (5253)	Black	Pipe Bundling
896	Scotchpro™ Film	Glass Yarn	Synthetic Rubber Resin	5.4 (.137)	50 (55)	240 (4202)	White	General Use/White Boxes
897	Scotchpro™ Film	Glass Yarn	Synthetic Rubber Resin	6.0 (.152)	60 (66)	170 (2977)	Clear	Strapping/Bundling
898	Scotchpro™ Film	Glass Yarn	Synthetic Rubber Resin	6.6 (.168)	70 (77)	380 (6654)	Clear	Box Closure/Bundling
898NR	Scotchpro™ Film	Polyester Yarn	Natural Rubber Resin	6.0 (.152)	50 (55)	380 (6654)	Clear	Metal Coil/Tabbing
8884	Linear Low Density Polyethylene	None	Synthetic Rubber Resin	5.0 (.127)	59 (65)	20 (350)	Clear	Palletizing/Load Containment
8886	Linear Low Density Polyethylene	None	Synthetic Rubber Resin	7.0 (.178)	56 (61)	28 (490)	Clear	Load Containment
8932	Scotchpar™ Film	Glass Yarn	Synthetic Rubber Resin	4.3 (.109)	50 (55)	95 (1660)	Clear	General Use/Strapping
8934	Scotchpar™ Film	Glass Yarn	Synthetic Rubber Resin	4.0 (.102)	60 (66)	100 (1751)	Clear	Strapping/Bundling
8959	Polypropylene Film Glass Yarn	Bi-directional	Synthetic Rubber Resin	5.7 (.145)	100 (109)	150 (2627)	Clear	Heavy Duty Box Closure
8981	Scotchpar™ Film	Glass Yarn	Synthetic Rubber Resin	6.6 (.168)	70 (77)	380 (6654)	Clear	Box Closure, L-clips

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

Scotch® High Strength Tapes for Box Closing and Easy Access

Maximum holding for box closing

Scotch® High Performance Filament and Film Strapping Tapes close boxes with maximum strength even under extreme conditions for applications in the following markets: food and beverage, furniture, toys, sporting goods, automotive parts, window blinds, and more.

- Choice of tape reinforcements, adhesive tape, and backing to match requirements for tensile strength, package size, and weight, elongation, impact and nick resistance.
- Secure, easy L or C-clips for full overlap, five-panel folder, full telescope, die-cut folders, and other non-RSCs.
- Quick, easy application by hand using manual dispensers or semi-automatic application with 3M-Matic™ L-clip Applicator.
- Quick, easy application by hand, manual dispensers, or 3M-Matic™ Case Sealers.

87

For reliability and productivity, use Scotch® Filament Tape 8981 for L-clip closures on virtually any non-RSC package. Its high tensile strength, adhesion and sheer properties provide an exceptionally well-balanced tape construction.

90

Choose Scotch® Filament Tape 898 for L-clip closures on light to heavy duty corrugated boxes. For hard-to-stick-to recycled corrugated fiberboard, rely on Scotch® Filament Tape 8988.

88

For high volume productivity, the 3M-Matic™ L-Clip Applicator S-867 II applies up to 50 consistently sized 4.5" L-clips per head, per minute. See page 34.

89

For heavy duty RSCs, polypropylene backed Scotch® Bi-Directional Filament Tape 8959 is reinforced with glass yarn across the length and width to resist center seam splitting in both the longitudinal and cross direction.

91

Scotch® Reinforced Strapping Tape 8651 allows package graphics to show through and helps assure accurate bar code scanning through the clear, tensilized polypropylene backing.

92

With glass yarn reinforcement, high tensile strength, and low stretch, Scotch® High Strength Filament Tape 890 is designed to hold the lift flap in place on Basiloid containers.

Easy access with a simple pull

For easy opening of packages ranging from overnight envelopes to corrugated fiberboard, the recipient simply grabs and pulls the exposed end of a Scotch® Tear Strip Tape.

- Tensilized polypropylene tears through paper board and light to heavy weight fiber board with high pull-rate success
- Eliminates knives or other sharp edges from opening envelopes and panels.

93

For overnight courier envelopes and mail order boxes, Scotch® Tear Strip Tape 8621 provides superior resistance to edge nicking and tearing compared to other film tear strip tapes without reinforcement.

94

Scotch® Tear Strip 8626 with superior tensile strength tears through medium to heavy weight corrugated fiberboard as used in household detergent boxes.

Product Information:

Product	Backing	Reinforcement	Adhesive	Total Thickness mils (mm)	Adhesion to Steel oz./in. (N/100mm)	Tensile Strength lbs./in. (N/100mm)	Color	Typical Use
ASTM Test Method:				D-3330	D-3759	D-3759		
Reinforced Strapping Tape								
863	Tensilized Polypropylene	Polypropylene	Synthetic Rubber Resin	5.0 (.127)	60 (66)	155 (2714)	Clear	Palletizing, L-clips, Box Reinforcing
864	Tensilized Polypropylene	Polypropylene	Synthetic Rubber Resin	5.6 (.142)	67 (73)	190 (3327)	Clear	Box Closure, L-clips, Box Reinforcing
865	Tensilized Polypropylene	Polypropylene	Synthetic Rubber Resin	6.4 (.163)	74 (81)	240 (4202)	Clear	Box Closure, L-clips, Box Reinforcing
8651	Tensilized Polypropylene	Polypropylene	Synthetic Rubber Resin	5.6 (.142)	75 (82)	175 (3064)	Clear	Box Closure, Bundling
8652	Tensilized Polypropylene	Polypropylene	Synthetic Rubber Resin	8.2 (.208)	75 (82)	280 (4903)	Clear	Box Closure, Bundling, Basiloid
High Strength Filament Tape								
890	Scotchpar™ Film	Glass Yarn	Natural Rubber Resin	8.0	45	600	Clear/ Black	Basiloid, Flexible Pipe Reinforcement (Oil and Gas)
893	Scotchpro® Film	Glass Yarn	Synthetic Rubber Resin	6.0 (.152)	55 (60)	300 (5253)	Clear	Box Closure, Basiloid, Reinforcing
896	Scotchpro® Film	Glass Yarn	Synthetic Rubber Resin	5.4 (.137)	60 (66)	240 (4202)	White	General Use, White Boxes
898	Scotchpro® Film	Glass Yarn	Synthetic Rubber Resin	6.6 (.168)	70 (77)	380 (6654)	Clear	Box Closure, Bundling
8809	Scotchpar® Film	Polyester Yarn	Synthetic Rubber Resin	7.7 (.196)	70 (77)	250 (4378)	Red	Flexible Pipe Reinforcement (Oil and Gas)
8959	Polypropylene Film	Bi-directional Glass Yarn	Synthetic Rubber Resin	5.7 (.145)	100 (109)	150/50 (2627/876)	Clear	Heavy Duty Box Closure, Bi-directional applications
8981	Scotchpro® Film	Glass Yarn	Synthetic Rubber Resin	6.6 (.168)	70 (77)	380 (6654)	Clear	Box Closure L-clips
8983P	Scotchpar® Film	Glass Yarn	Synthetic Rubber Resin	6.0 (.150)	43 (47)	380 (6654)	Clear	Flexible Pipe Reinforcement (Oil and Gas)
8988	Scotchpro® Film	Glass Yarn	Synthetic Rubber Resin	6.9 (.175)	75 (82)	380 (6654)	Clear	Recycled Box Closure L-clips
Easy Access Solutions								
8621	Tensilized Polypropylene	Polypropylene	Synthetic Rubber Resin	5.4 (.137)	64 (70)	160 (2802)	White	Tear Strip
8624	Tensilized Polypropylene	None	Synthetic Rubber Resin	4.6 (.117)	65 (71)	160 (2802)	Blue	Tear Strip
8626	Tensilized Polypropylene	None	Synthetic Rubber Resin	5.9 (.150)	75 (82)	220 (3852)	Ivory	Tear Strip

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

Scotch® High Strength Tapes with Clean Removal

Secure and stabilize with no mess, no cleanup for appliances, furniture, electronics, and more

These high strength tapes not only hold securely but remove cleanly with no sticky residue and tape slivers for cleanup.

- Easy, neat removal from unpainted and painted metal, glass, vinyl, many plastics, and more
- No staining or ghosting on most surfaces
- Choice of strong polypropylene backing or glass yarn reinforcement for the demands of various jobs, for example:
  - Hold plastic refrigerator drawers with Scotch® Film Strapping Tape 8896
  - Keep heavy washer lids or oven doors closed with Scotch® Filament Tape 8916V or 8919.
  - Secure the last lap of metal coils with Scotch® Film Strapping Tape 8916


95

For maximum impact resistance, Scotch® Filament Tape 8919 secures hinged doors of heavy appliances during shipping. Rubber resin adhesive resists staining on most surfaces.


96

Scotch® Film Strapping Tape 8898 bonds firmly to many plastics surfaces, such as those found with computers and peripherals, but leaves no sticky residue when removed.


97


98


99

For refrigerators, Scotch® Clean Removal Tapes offer choices for securing and stabilizing inside and out. Filament tapes hold doors closed during transit, including stainless steel or powder coated. Film strapping tapes hold foam corners and rubber cords during shipment, and keep plastic drawers closed during manufacturing and through in-store display and home delivery.

Product Information:

Product	Backing	Reinforcement	Adhesive	Total Thickness mils (mm)	Adhesion to Steel oz/in (N/100mm)	Tensile Strength lbs./in. (N/100mm)	Color	Typical Use
ASTM Test Method:				D-3330	D-3759	D-3759		
Reinforced Strapping Tape								
8896	Tensilized Polypropylene	None	Synthetic Rubber Resin	4.6 (.12)	75 (82)	160 (2800)	Blue/Ivory	Secure, Stabilize Parts
8898	Tensilized Polypropylene	None	Synthetic Rubber Resin	4.6 (.12)	75 (82)	160 (2800)	Blue/Ivory	Secure, Stabilize Parts
8915	Scotchpro™ Film	Glass Yarn	Synthetic Rubber Resin	6.0 (.15)	60 (65)	170 (2980)	Clear	Secure, Stabilize Parts
8916	Scotchpro™ Film	Glass Yarn	Synthetic Rubber Resin	6.0 (.15)	65 (71)	170 (2980)	Clear	Secure, Stabilize Parts
8916V	Scotchpro™ Film	Glass Yarn	Synthetic Rubber Resin	6.8 (.17)	75 (82)	210 (3678)	Blue/Clear	Secure, Stabilize Parts
8919	Scotchpar™ Film	Glass Yarn	Natural Rubber Resin	7.0 (.18)	70 (76)	380 (6650)	Clear	Secure, Stabilize Parts

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

Environmental Highlights of 3M™ Packaging and Bundling Tapes

Product Name	Environmental Claim/Attribute
Tartan™ Filament Tape 8934	Uses solventless adhesive coating process. In addition it meets the EU RoHS Directive 2002/95/EC, heavy metals content as stated in Article 11 of European Directive 94/62/EC on packaging and packaging waste, and the laws based on CONEG model legislation.
Scotch® Filament Tape 898	Uses solventless adhesive coating process. In addition it meets the EU RoHS Directive 2002/95/EC, heavy metals content as stated in Article 11 of European Directive 94/62/EC on packaging and packaging waste, and the laws based on CONEG model legislation.
Scotch® Filament Tape 893	Uses solventless adhesive coating process. In addition it meets the EU RoHS Directive 2002/95/EC, heavy metals content as stated in Article 11 of European Directive 94/62/EC on packaging and packaging waste, and the laws based on CONEG model legislation.
Scotch® Filament Tape 897	Uses solventless adhesive coating process. In addition it meets the EU RoHS Directive 2002/95/EC, heavy metals content as stated in Article 11 of European Directive 94/62/EC on packaging and packaging waste, and the laws based on CONEG model legislation.
Scotch® Bi-Directional Filament Tape 8959	Uses solventless adhesive coating process. In addition it meets the EU RoHS Directive 2002/95/EC, heavy metals content as stated in Article 11 of European Directive 94/62/EC on packaging and packaging waste, and the laws based on CONEG model legislation.
Scotch® Filament Tape 8981	Uses solventless adhesive coating process.In addition it meets the EU RoHS Directive 2002/95/EC and the laws based on CONEG model legislation.
Scotch® High Strength Filament Tape 890	Contains Natural Rubber, a renewable resource. In addition it meets the EU RoHS Directive 2002/95/EC, heavy metals content as stated in Article 11 of European Directive 94/62/EC on packaging and packaging waste, and the laws based on CONEG model legislation.
Scotch® Appliance Filament Tape 8916	Uses solventless adhesive coating process. In addition it meets the EU RoHS Directive 2002/95/EC, heavy metals content as stated in Article 11 of European Directive 94/62/EC on packaging and packaging waste, and the laws based on CONEG model legislation.
Scotch® Box Sealing Tape 371	Uses solventless adhesive coating process. In addition, this product complies with environmental considerations of ASTM D1974-92, meets the EU RoHS Directive 2002/95/EC, heavy metals content as stated in Article 11 of European Directive 94/62/EC on packaging and packaging waste, and the laws based on CONEG model legislation.
Scotch® Box Sealing Tape 375	Uses solventless adhesive coating process. In addition, this product complies with environmental considerations of ASTM D1974-92, meets the EU RoHS Directive 2002/95/EC, heavy metals content as stated in Article 11 of European Directive 94/62/EC on packaging and packaging waste, and the laws based on CONEG model legislation.
Scotch® Box Sealing Tape 373	Uses solventless adhesive coating process. In addition, this product complies with environmental considerations of ASTM D1974-92, meets the EU RoHS Directive 2002/95/EC, heavy metals content as stated in Article 11 of European Directive 94/62/EC on packaging and packaging waste, and the laws based on CONEG model legislation.
Scotch® Box Sealing Tape 311	Uses water-based adhesive. In addition, this product meets the EU RoHS Directive 2002/95/EC, heavy metals content as stated in Article 11 of European Directive 94/62/EC on packaging and packaging waste, and the laws based on CONEG model legislation.

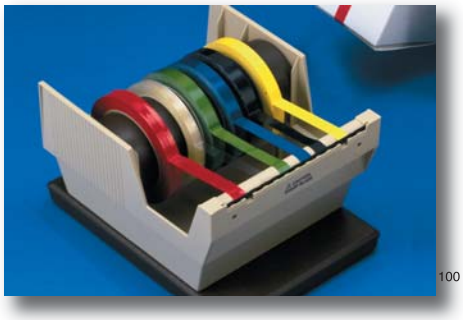
Product Name	Environmental Claim/Attribute
Tartan™ Box Sealing Tape 369	Uses solventless adhesive coating process. In addition, this product complies with environmental considerations of ASTM D1974-92, meets the EU RoHS Directive 2002/95/EC, heavy metals content as stated in Article 11 of European Directive 94/62/EC on packaging and packaging waste, and the laws based on CONEG model legislation.
Tartan™ Box Sealing Tape 305	Uses water-based adhesive. In addition, this product meets the EU RoHS Directive 2002/95/EC, heavy metals content as stated in Article 11 of European Directive 94/62/EC on packaging and packaging waste, and the laws based on CONEG model legislation.
Scotch® Box Sealing Tape 313	Uses water-based adhesive. In addition, this product meets the EU RoHS Directive 2002/95/EC, heavy metals content as stated in Article 11 of European Directive 94/62/EC on packaging and packaging waste, and the laws based on CONEG model legislation.
3M™ Top Print Packing List Envelope	Uses solventless adhesive coating process. In addition, this product meets the EU RoHS Directive 2002/95/EC, heavy metals content as stated in Article 11 of European Directive 94/62/EC on packaging and packaging waste, and the laws based on CONEG model legislation.
3M™ ScotchPad™ Custom Carry Handle 8326	Uses solventless adhesive coating process. In addition, this product meets the EU RoHS Directive 2002/95/EC, heavy metals content as stated in Article 11 of European Directive 94/62/EC on packaging and packaging waste, and the laws based on CONEG model legislation.
Scotch® Packaging Tape 3750-P	Uses solventless adhesive coating process. In addition, this product meets the EU RoHS Directive 2002/95/EC, heavy metals content as stated in Article 11 of European Directive 94/62/EC on packaging and packaging waste, and the laws based on CONEG model legislation.
3M™ Non-Printed Packing List Envelopes	Uses solventless adhesive coating process. In addition, this product meets the EU RoHS Directive 2002/95/EC, heavy metals content as stated in Article 11 of European Directive 94/62/EC on packaging and packaging waste, and the laws based on CONEG model legislation.
3M™ ScotchPad™ Label Protection Tape Pad 822	Uses solventless adhesive coating process. In addition, this product meets the EU RoHS Directive 2002/95/EC, heavy metals content as stated in Article 11 of European Directive 94/62/EC on packaging and packaging waste, and the laws based on CONEG model legislation.
Scotch® Labelgard™ Film Tape 821	Uses water-based adhesive. In addition, this product meets the EU RoHS Directive 2002/95/EC, heavy metals content as stated in Article 11 of European Directive 94/62/EC on packaging and packaging waste, and the laws based on CONEG model legislation.
Scotch® Stretchable Tape 8884	Uses solventless adhesive coating process. In addition, this product meets the EU RoHS Directive 2002/95/EC, heavy metals content as stated in Article 11 of European Directive 94/62/EC on packaging and packaging waste, and the laws based on CONEG model legislation.
Scotch® Stretchable Tape 8886	Uses solventless adhesive coating process. In addition, this product meets the EU RoHS Directive 2002/95/EC, heavy metals content as stated in Article 11 of European Directive 94/62/EC on packaging and packaging waste, and the laws based on CONEG model legislation.

Scotch® Manual Dispensers

Easy dispensing for manufacturing, office, commercial, and retail jobs

All Scotch® Manual Dispensers for box sealing tapes, filament tapes, film tapes, label protection tapes, and pouch tapes are application-designed to meet the needs of the customer. Select from a variety of hand-held and heavy duty pull-and-tear table top dispensers.

The following table also includes more specialized dispensers: definite length dispensers, semi-automatic filament tape dispensers and stretchable tape dispensers which deliver the tape to the product adhesive side up.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Product Information:

Product	Product Description	Product Recommendation	Applications	Max. Tape Width
C-22	Heavy-duty tabletop manual pull and tear dispenser. for film, paper and filament tapes.	Cellophane, UPCV, acetate	Sealing, holding, attaching and tabbing	2 in.
C-23	Heavy-duty tabletop manual pull and tear dispenser. film, paper and filament tapes.	Cellophane, UPCV, acetate	Sealing, holding, attaching and tabbing	1 in.
C-25	Heavy-duty tabletop manual pull and tear dispenser with permanent core.	Film-backed and filament tapes	Sealing, holding, attaching and tabbing	1 in.
H-10	Durable plastic tape dispenser.	All high strength tapes	Box closing, bundling and reinforcing	24 mm
H-12	Features a hand break to add tension to the tape roll.	All high strength tapes	Box closing, bundling and reinforcing	24 mm
H-38	Stretchable tape dispenser.	8884 and 8886	Pallet stabilization and load containment	38 mm
H-120	Durable metal hand dispenser.	All high strength tapes	Box closing, bundling and reinforcing	24 mm
H-122	Lightweight, compact, hand-held dispenser.	All box sealing tapes	Box closing	48 mm
H-123	Lightweight, compact metal, hand-held dispenser.	All box sealing tapes	Box closing	72 mm
H-128	Heavy-duty durable metal hand dispenser.	8959, 890, and all box sealing tapes	Heavy duty box closing	48 mm
H-129	Quick and easy one hand method for dispensing.	All box sealing tapes	“C” clip application on RSCs	48 mm
H-130	Tape dispenser with hand brake.	All high strength tapes	Box closing, bundling and reinforcing	18 mm
H-131	Applies an L-clip to tape with a one handed motion.	All filament tapes	Box closing	18 mm
H-133	An economical dispenser that applies an L-clip to tape with a one handed motion.	All filament tapes	Box closing	18 mm
H-171	Lightweight, pistol grip, roll-on dispenser.	All box sealing tapes	Center seam sealing on RSCs	48 mm
H-180	Hand-held, portable and easy to operate.	All box sealing tapes	Box closing	48 mm
H-183	Hand-held dispenser features adjustable tape break.	All box sealing tapes	Center seam sealing on RSCs	72 mm
H-190	Pistol grip dispenser features pull apart design.	All box sealing tapes	Box closing	48 mm
H-192	Tape tension can be controlled with tape roll brake. High impact plastic construction.	All box sealing tapes	Box closing	48 mm
H-320	Ultra-light, economical plastic dispenser.	All box sealing tapes	Center seam sealing on RSCs and recouperage	48 mm
H-1755	Hand-held, portable dispenser is easy to load and operate.	All box sealing tapes	Center seam sealing on RSCs	48 mm
M-82	Definite length dispenser delivers 36mm to 384mm length of tape.	All high strength tapes	Definite length for clean removal and box closing tapes	96 mm
M-96	Tabletop definite length dispenser — dispenses tape in lengths of 3/4 in. to 5 in./stroke.	Film-backed paper, and filament tapes	Sealing, holding, attaching and tabbing	1 in.
M-707	Label protection dispenser with auxiliary holder and cutter for 3/4 in. roll of tape.	Label protection tapes	Label protection	4 in.
M-727	Pouch tape dispenser — can be secured tabletop, wall mounted or remain portable.	Pouch tape, Scotch® Labelgard™ brand tape, general use tapes	Label protection and document attachment	5 in.
M-920	Tabletop definite length dispenser — dispenses tape in lengths of 1/2 in. to 4 in./stroke.	Film-backed tape and filament tapes	Sealing, holding, attaching and tabbing	1 in.
P52/P52W	Mainline tabletop manual pull and tear dispenser with multiple roll capacity — P52W has weighted base.	Film-backed or paper tapes	Sealing, holding, attaching and tabbing	2 in.
P56/P56W	Mainline tabletop manual pull and tear dispenser with multiple roll capacity — P56W has weighted base.	Film-backed or paper tapes	Sealing, holding, attaching and tabbing	6 in.
P-400	Bag sealer — applies tape in an adhesive-to-adhesive flag seal — includes bag trimmer.	Bag sealing tapes	Bag sealing	0.375 in.
P-410	Bag sealer — applies tape in an adhesive-to-adhesive flag seal.	Bag sealing tapes	Bag sealing	0.25 in.
S-63	Applies L-clip of tape to a box as it’s slid across the sealer’s top surface.	Film-backed tapes	Box closing	15 mm
S-634	Applies L-clip of tape to a box as it’s slid across the sealer’s top surface (industrial version).	All high strength tapes	Box closing	18 mm

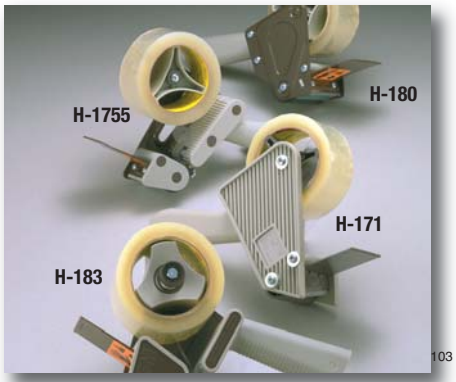
Note: This technical information and data should be considered representative or typical only and should not be used for specification purposes.

101

Scotch® Box Sealing Tape Dispensers
Hand-held dispensers for use with specially formulated Scotch® Box Sealing Tapes.

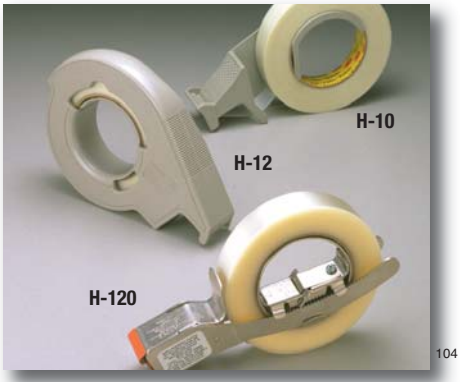
102

Scotch® Box Sealing Tape Dispensers
Hand-held dispensers for use with specially formulated Scotch® Box Sealing Tapes.



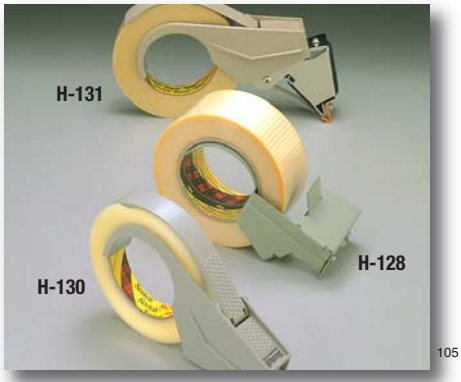
103

Scotch® Box Sealing Tape Dispensers
Hand-held dispensers for use with specially formulated Scotch® Box Sealing Tapes.



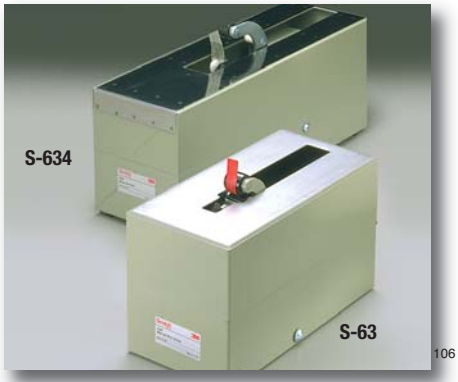
104

Scotch® Filament Dispensers
Hand-held dispensers for use with Scotch® High Strength Filament Tapes.



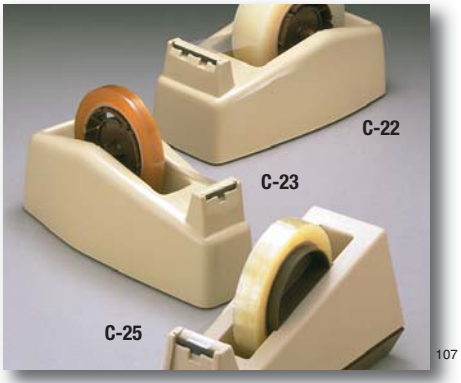
105

Scotch® Filament Dispensers
Hand-held dispensers for use with Scotch® High Strength Filament Tapes.



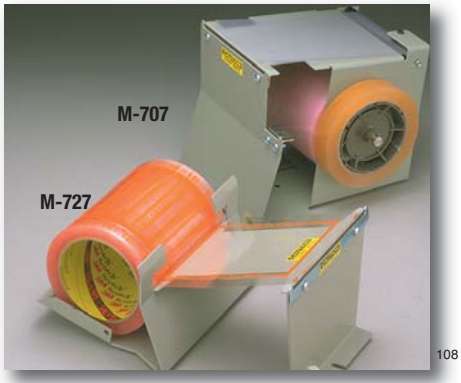
106

Scotch® Filament Dispensers
Semi-automatic dispensers for use with Scotch® High Strength Filament Tapes.



107

Scotch® Heavy-Duty Dispensers
Manual heavy-duty dispensers for use with 3M™ Narrow Width Film Tapes.



108

Scotch® Label Protection Dispensers
Tabletop and portable dispensers designed specifically for 3M™ Label Protection and Pouch Tapes.

109

Scotch® Definite Length Dispensers
Dispensers that deliver a uniform length of 3M™ Narrow Width Tape and Scotch® Filament Tapes every time quickly and easily.

110

Scotch® Stretchable Tape Dispenser
Hand-held dispenser with tensioning/stretching brake for use with 3M™ Stretchable Tapes.

111

Scotch® Filament Tape Dispenser
Hand-held dispenser for applying up to 18mm wide L-clip or C-clip of Scotch® High Strength Filament Tapes to close boxes.

112

Scotch® Bag Sealers
Applies tape in an adhesive-to-adhesive flag seal.

3M-Matic™ Case Sealers Selection Overview

Uniform Size Boxes

Manually Adjustable, Semi-Automatic

Affordable for low volume

a20

Up to 30 cs./min.
Up to 65 pounds
Bottom belt drive

a70

Up to 30 cs./min.
Up to 65 pounds
4-belt drive

a80*

Up to 30 cs./min.
Up to 65 pounds
Side belt drive

Engineered for high volume

700a*

Up to 40 cs./min.
Up to 85 pounds
Top and bottom belt drives

800a*

Narrow cases
Up to 40 cs./min.
Up to 85 pounds
Side belt drive

700aks†

Up to 40 cs./min.
Up to 85 pounds
Top and bottom belt drives

800asb

Small cases
Up to 30 cs./min.
Up to 85 pounds
Side belt drive

200a*

Up to 40 cs./min.
Up to 85 pounds
Bottom belt drive

800ab

Narrow cases
Up to 38 cs./min.
Up to 85 pounds
Side belt drive

Manually Adjustable, Automatic Flap Folding

800af*

Up to 28 cs./min.
Up to 85 pounds
Side belt drive

Affordable for low volume

120af*

Up to 27 cs./min.
Up to 65 pounds
Side belt drive

3M™ AccuGlide™ 3 Taping Head

Designed for increasing productivity

* Available with 3" taping head
† Comes standard with 3" taping head

From semi-automatic to random automatic operation

Random Size Boxes

Self Adjusting, Semi-Automatic

700r*

Up to 19 cs./min.
Up to 85 pounds
Top and bottom
belt drives

800r*

Up to 15 cs./min.
Up to 85 pounds
Side belt drives

700rks†

Up to 19 cs./min.
Up to 85 pounds
Top and bottom
belt drives

800rks†

Up to 10 cs./min.
Up to 200 pounds
Side belt drives

Affordable for low volume

r70

Up to 15 cs./min.
Up to 65 pounds
Top and bottom
belt drive

**Self adjusting,
Fully Automatic**

800rf*

Up to 10 cs./min.
Up to 85 pounds
Side belt drive

2000rf*

Indexes, folds,
and seals up to
27 cs./min.
Custom engineered
Servo drive

3M-Matic™ Adjustable Case Sealers

Productivity with quick height and width adjustments

With quick manual adjustment, these rugged units reliably and accurately seal runs of the same size cartons for a variety of markets: food and beverage, medical devices, pharmaceutical, electronics, retail, manufacturing, and distribution centers.

- Patented 3M™ AccuGlide™ 2+ and 3 Taping Heads securely apply tape with low impact to protect even lightweight cases and their contents

132

120af – Adjustable side belt drive for sealing lightweight, narrow cases at up to 27/minute with 36-48mm tape. Automatically folds top minor and major flaps.

133

200a – Durable bottom belt drive for up to 40 RSCs/minute. Dual masts with dual lead screws for stability and uniform height adjustments. Durable and cost efficient for basic case sealing – the most popular 3M-Matic™ Adjustable Case Sealer.

134

700a – Advanced features to seal uniform cases up to 40/minute. Dual masts with dual lead screws for stability and uniform height adjustments. Adjustable top and bottom belt drive system for reliable conveyance of heavier or tall/light boxes. Compression rollers position each box for precise tape sealing.

135

700aks – Especially designed for sealing larger RSCs such as used in the appliance, electronics, and bedding industries. For reliable sealing, the adjustable king size top and bottom belt drive dependably conveys uniform cases up to 25.5" wide by 36" high at up to 40/minute. Includes 72mm tape width 3M™ AccuGlide™ 3 Taping Head.

136

800a – Adjustable side belt drive for a wide range of RSC sizes and weights: lengths of 6" and more; 4.5-21.5" widths; 4.75-24.5" heights. Seals up to 40 cases/minute with 36-48mm wide Scotch® Box Sealing Tapes.

137

800asb – Same adjustable side belt drive as the 800a but designed for boxes as small as 6" long, 3.9" wide, and 2.75" high. Seals up to 30 cases/minute with 36mm tape.

138

800ab – Seals bottom flaps only at up to 40 cases/minute. Adjustable side belt drive conveys a wide range of RSC sizes and weights: lengths of 6" and more; 4.25-21.5" widths; 4.75" to unlimited heights.


139

800af – Automatically folds top minor and major flaps and tightly seals cases with 36-48mm tape at up to 28 cases/minute. Spring loaded drive with twin gear motors for heavy duty performance.

Product Information:

Model	Drive Belt System	Min. Case Length (in.)	Min. Case Width (in.)	Min. Case Height (in.)	Max. Case Length (in.)	Max. Case Width (in.)	Max. Case Height (in.)	Max. Case Weight (lbs.)	Max. Cases/ Minute	Comments
120ab*	Side	6	4.75	4.75	None	20	None	50	27	Bottom taping only
120af*	Side	6	4.75	4.75 ❖ ❒	25	20	20	60	27	Flap folding
200a*	Bottom	6	6	4.75 ◆	None	21.5	24.5 ▲	85	40	Durable
700a*	Top and Bottom	6	6	4.75 ◆	None	21.5	24.5 ▲	85	40	Work horse
700aks	Top and Bottom	6	7	4.75 ■	None	25.5	25.5 ❍	85	40	King size
800a*	Side	6	4.5	4.75 ◆ ❒	None	21.5	24.5 ▲	85	40	Narrow boxes
800ab*	Side	6	4.25	4.75	None	21.5	None	85	40	Bottom taping only
800af*	Side	6	4.75	4.75 ❋ ❒	30	21.5	24.5 ▲	85	28	Flap folding
800asb	Side	6	3.9	2.75	None	21.5	22.38 ●	85	24	Small box machine
800a-t	Side	6	4.5	4.75	None	21.5	24.5 ▲	85	30	Includes 3 ft. t-table
800a6w	Side	6	10.0	4.75 ◆ ❒	None	21.5	24.5 ▲	85	30	Will use 144mm tape

Items marked with * are available to order with 3" 3M™ AccuGlide™ Taping Heads for tape widths up to 72 mm.

◆ Can be adjusted for 3.5" min. case height using 2" tape legs.

❖ Can be adjusted for 4" min. case height using 2" tape legs.

❋ Can be adjusted for 3.75" min. case height using 2" tape legs.

❒ Minimum case width increases when running cases below standard 4.75" height.

▲ Can be adjusted for 28.5" max. case height. Minimum case height increases by 4".

● Can be adjusted for 26.38" max. case height. Minimum case height increases to 4.25".

❍ Can be adjusted to the following case height ranges: 6.75"-27.5"; 9.25"-30"; 10.75-31.5"; 15.25-36".

■ Can be adjusted for 4" min. case height. Maximum case height reduced to 23.5". 2" tape legs.

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

3M-Matic™ Random Case Sealers

Productivity with automatic height and width adjustments

Adjusting automatically, these rugged units reliably and accurately seal runs of the random size cartons for a variety of markets: food and beverage, medical devices, pharmaceuticals, electronics, retail, manufacturing, and distribution centers. Patented 3M™ AccuGlide™ 2+ and 3 Taping Heads securely apply tape with low impact to protect even lightweight cases.

140

700r – Consistent flow and sealing tall cases at up to 19/minute. Automatically adjusts for case height and width. 36 mm to 48 mm wide tapes.

141

700rks – King-size for consistent flow and sealing larger cases at up to 19/minute. Automatically adjusts for case height and width. Up to 72 mm wide tape.


142

800r – Automatically adjusts for case size. Self-centering side belt drive for consistent flow of narrow cases at up to 19/per minute. 36 mm to 48 mm wide tapes.


143

800rks – King-size automatically adjusts for case sizes up to 30" wide by 48" high. Upper and lower side belt drives ensure taping accuracy up to 12 cases/minute. 48 mm to 72 mm tape widths.


144

800rf – Fully automatic for consistent flow and sealing without an operator. Automatically adjusts for random sizes, folds top minor and major flaps and seals up to 10 cases/minute. Includes up to 48 mm wide tape.


145

2000rf – For a high volume with random case sizes or where different lines converge for sealing. Fully automatic 3-stage operation separates, folds, and seals tops and bottoms at up to 20 cases/minute. Uses 36 mm to 48 mm tape widths.

Product Information:

Model	Drive Belt System	Min. Case Length (in.)	Min. Case Width (in.)	Min. Case Height (in.)	Max. Case Length (in.)	Max. Case Width (in.)	Max. Case Height (in.)	Max. Case Weight (lbs.)	Max. Cases/ Minute	Comments
700r *	Top and Bottom	6	6	4.75 ◆	None	21.5	24.5 ❍	85	19	Random
700rks	Top and Bottom	6	7	4.75	None	25.5	25.5 ❖	85	19	King size
800r *†	Side	8	4.25	4.75	None	20	21 ❒	85	19	Narrow boxes
800rks†	Side	15	8	12	None	30	50	200	12	King size
800rf *†	Side	8	8	6	24	19.5	20	85	10	Fully automatic
2000rf	Lug Drive	10	8	6	24	20	20	5-85❖❖	20	Fully automatic

* Available to order with 3" 3M™ AccuGlide™ taping heads for tape widths up to 72 mm.

† Available with 3M™ AccuGlide™ 3 Taping Head mid 2009.

◆ Can be adjusted for 3.75" min. case height using 2" tape legs.

❋ Can be adjusted for 3.75" min. case height using 2" tape legs.

❋❋ Actual specs based on customer requirements.

❍ Can be adjusted for 28.5" max. case height. Minimum case height increases to 8".

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

3M-Matic™ Stainless Steel Case Sealers

Productivity in high moisture and corrosive environments

For productivity in food and beverage, pharmaceutical and similar environments, these 99% stainless steel units conform to NEMA standard 250 type 4x specification for watertight enclosures. No painted surfaces. Includes 3M™ AccuGlide™ 2+ Stainless Steel Taping Head.


146

700a-s – Stainless steel version of 700a (pg. 31).


147

700r-s – Stainless steel version of 700r (pg.32)


148

800af-s – Stainless steel version of 800af (pg. 31).

Product Information:

Model	Drive Belt System	Min. Case Length (in.)	Min. Case Width (in.)	Min. Case Height (in.)	Max. Case Length (in.)	Max. Case Width (in.)	Max. Case Height (in.)	Max. Case Weight (lbs.)	Max. Cases/ Minute	Comments
700a-s	Top and bottom.	6	6	4.75 ◆	21.5	None	24.5 ▲	85	30	Adjustable
700r-s	Top and bottom.	6	6	4.75 ◆	21.5	None	24.5 ❍	85	15	Random Case Sealer
800af-s	Side.	6	4.75	4.75 ✱ ❒	30	21.5	24.5 ▲	85	28	Automatic Adjustable

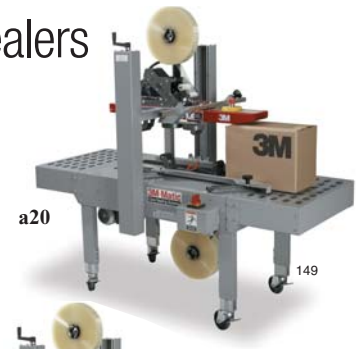
◆ Can be adjusted for 3.75" min. case height using 2" tape legs.
✱ Can be adjusted for 3.75" min. case height using 2" tape legs.
▲ Can be adjusted for 28.5" max. case height. Minimum case height increases by 4".
❒ Can be adjusted for 25.38" max. case height. Minimum case height increases to 9.12".
❍ Can be adjusted for 28.5" max. case height. Minimum case height increases to 8".
Note: This technical information and data should be considered representative or typical only and should not be used for specification purposes

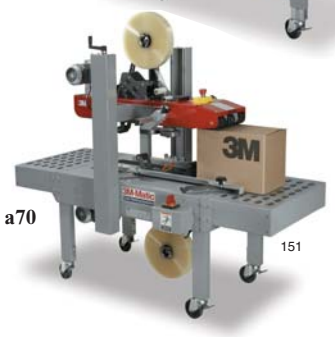
3M-Matic™ Intro Series Case Sealers

Affordable productivity

When packaging volumes exceed the limits of manual sealing, the durable Intro Series offers affordable increases in productivity for top and bottom sealing of RSCs.

Select 3M-Matic™ Adjustable Case Sealers a20, a70, or a80 for runs of uniform box sizes; r70 with automatic adjustment for a run of random case sizes. All include the 3M™ AccuGlide™ Taping Head 2+ for low impact sealing that protects cases.





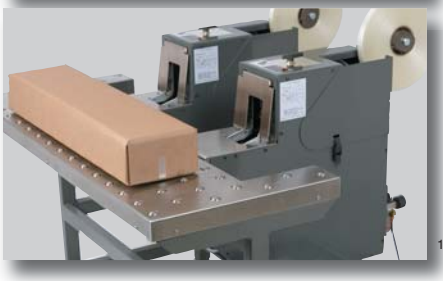
Product Information:

Model	Drive Belt System	Min. Case Length (in.)	Min. Case Width (in.)	Min. Case Height (in.)	Max. Case Length (in.)	Max. Case Width (in.)	Max. Case Height (in.)	Max. Case Weight (lbs.)	Max. Cases/ Minute	Comments
a20	Bottom	6	6	4.75	None	21.5	21.5	65	30	Adjustable
a70	Top and bottom	6	6	4.75	None	21.5	21.5	65	30	Adjustable
a80 *†	Side	6	6	4.75	None	21.5	21.5	65	30	Adjustable
r70	Top and bottom	6	6	4.75	None	21.5	21.5	65	30	Random

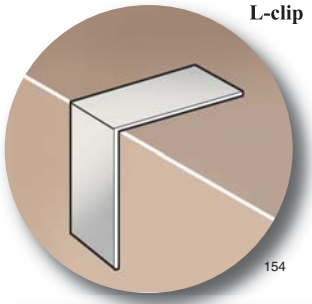
* Available to order with 3" 3M™ AccuGlide™ Taping Heads for tape widths up to 72 mm. † Available with bottom taping only.
Note: This technical information and data should be considered representative or typical only and should not be used for specification purposes.

Specialty Equipment and Options


153

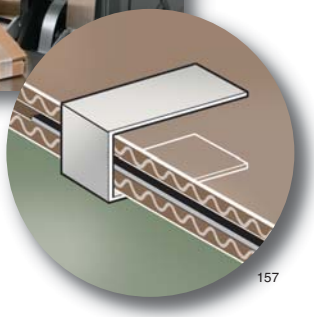

155

3M-Matic™ L-Clip Applicator S-867 and S-867II – To save cost and time apply pre-fed 4.5" L-clips of Scotch® Filament or Reinforced Strapping Tape at up to 50/minute to five panel fold, full overlap, telescoping, tuck fold, and other non-standard packages. Dual head applies two clips simultaneously as close as 8" apart.



154

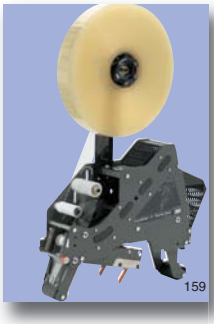

156


157

Optional C-clip Adapter


154 158

3M™ Stretchable Tape Wrapper ST1000 – For stabilizing ventilated produce this turntable unit consistently wraps loads up to 8.75' high. Automated wrapping with choice of programmed patterns and specially designed taping head assure consistent, optimized application. Uses Scotch® Stretchable Tape 8886 (page 21).


159


160

3M™ AccuGlide™ 2+ and 3 Taping Heads – Patented curvilinear design applies tape securely with low impact that helps protect even lightweight cartons and contents. Model 2+ for speeds up to 80'/minute; model 3 for up to 100'/minute.

161

162

3M-Matic™ Tape Application Monitor – With top and bottom sensors, the case sealer mounted programmable logic controller alerts the operator when tape is not applied to the box or not cut, or when tape supply is low on the roll.


163

3-Flap Folder – For increased productivity, easily attached flap folder assists operator in folding the minor (front) and two major (side) flaps of RSCs before taping.


164

Infeed/Exit Conveyor – Ball bearing steel rollers in steel frame bolts to the 3M-Matic™ Case Sealer to provide a smooth transition in existing conveyor lines. Provides pack area surface at infeed. Available also in stainless steel.


165

Box Hold Down Attachment – Holds RSCs on the optional infeed conveyor to free the operator's hands for cases filling.


166

Locking/Swivel Casters – When packaging operations need to be reconfigured or moved, 3M-Matic™ Case Sealers roll to the job on these heavy duty casters. Toe-operated lever locks case sealer in place. Available also in stainless steel.

3M™ Packing List Envelopes

Wide variety of choices for document control and protection

For productivity, liner peels off the envelope to expose pressure sensitive adhesive that holds to most packaging materials.

- Variety of standard size envelopes to fit document control requirements
- Non-printed and printed with standard black-on-red messages

Polyethylene/synthetic rubber/paper liner with backing thickness of 2.0 mil (0.051 mm) and total thickness of 5.0 mil (0.127 mm).


167

Easy inspection – For cross border shipping and other inspection situations, zipper closure envelopes open easily and close securely. Tough construction resists moisture and abrasion.

168

Secure adhesion – High tack pressure sensitive adhesive on the back of the envelope grabs on contact and holds securely even to curved and flexible surfaces.

Selection Guide

T (Top Printed)

T-1
Packing List/Invoice Enclosed (Top Printed)
Applications: 1,000/case
4.5" x 5.5"

T-1 PL
Packing List Enclosed (Top Printed)
Applications: 1,000/case
4.5" x 5.5"

T-1 INV
Invoice Enclosed (Top Printed)
Applications: 1,000/case
4.5" x 5.5"

T-2
Packing List/Invoice Enclosed (Top Printed)
Applications: 1,000/case
4.5" x 6"

T-3
Packing List/Invoice Enclosed (Top Printed)
Applications: 1,000/case
7" x 5.5"

T-4
Packing List/Invoice Enclosed (Top Printed)
Applications: 1,000/case
5.5" x 10"

NP (Non-Printed)

NP-1
No Print (Clear)
Applications: 1,000/case
4.5" x 5.5"

NP-2
No Print (Clear)
Applications: 1,000/case
4.5" x 6"

NP-3
No Print (Clear)
Applications: 1,000/case
5.5" x 7"

NP-4
No Print (Clear)
Applications: 1,000/case
5.5" x 10"

NP-5
No Print (Clear)
Applications: 1,000/case
7" x 10"

NP-6
No Print (Clear)
Applications: 1,000/case
9.5" x 12"

NP-9
No Print (Clear)
Applications: 1,000/case
7" x 6"

FED-1
No Print (Perfed)
Applications: 500/case
6.75" x 10.75"

F (Full Face Printed)

F-1
Packing List/Invoice Enclosed (Full Faced)
Applications: 1,000/case
4.5" x 5.5"

F-1 PL
Packing List Enclosed (Full Faced)
Applications: 1,000/case
4.5" x 5.5"

Zipper Closure Envelope

NP-Z
No Print (Clear)
Applications: 500/case

8.5" x 11.5"

169

3M™ Package Attachment and Label Protection Products

Keep shipping labels legible, clean, and attractive

3M™ Pouch Tapes feature a perimeter of pressure sensitive adhesive around the edge of non-tacky film. The adhesive sticks to packages creating a film pouch to contain and protect shipping documents as well as small parts and promotional items.

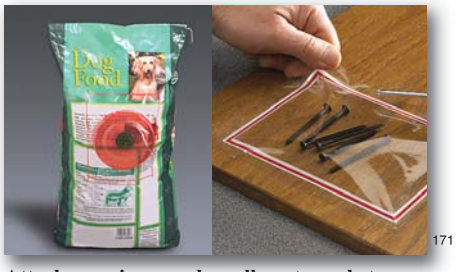
Read-through 3M™ Label Protection Tapes hold labels in place, keeping them legible, clean, and intact.

Application areas for both product lines:

- Food and beverage
- General manufacturing
- Mailrooms
- Merchandising and promotions
- Produce
- Retail

170

Document Control – Rugged Scotch® Polyester Film tape 356 with long-aging adhesive protects labels in harsh or outdoor environments against water, UV, chemicals, and abrasion.



171

Attach premiums and small parts packets – Scotch® Custom Printed Pouch Tape 828CP securely attaches and seals product samples, small parts packets, merchandise, premiums, literature, catalogs, or brochures.

172

Label Attachment and Protection – Scotch® Britegard™ Film Tape 823. Bright yellow directs the eye to the label. Best choice for protection of print on carbonless labels.

173

Versatile and portable tape pads – 3M™ Scotchpad™ Pouch Tape Pad 830 is the same as Scotch® Pouch Tape 824 but in a compact, easy and ready-to-use pad. No dispenser needed.

Product Information:

Product	Tape Structure (Backing/Adhesive)	Backing Thickness mils (mm)	Total Thickness mils (mm)	Adhesion to Steel oz./in. (N/100 mm)	Tensile Strength lbs./in. (N/100 mm)	Elongation at Break %	Comments
ASTM Test Method:		**D-3652**	**D-3652**	**D-3330**	**D-3759**	**D-3759**	
POUCH TAPE ROLLS							
824	Polypropylene/Synthetic Rubber	1.6 (.041)	2.5 (.064)	50 (55)	30 (525)	160	Standard message "Document Enclosed" — 5" x 6" 333/roll
825	Polypropylene/Synthetic Rubber	1.6 (.041)	2.5 (.064)	50 (55)	30 (525)	160	Same as 824 except on 1" core
827	Polypropylene/Synthetic Rubber	1.6 (.041)	2.5 (.064)	50 (55)	30 (525)	160	Standard message "Document Enclosed" — multiple sizes
828CP	Polypropylene/Synthetic Rubber	1.6 (.041)	2.5 (.064)	50 (55)	30 (525)	160	Custom printing in multiple sizes/colors
829	Polypropylene/Synthetic Rubber	1.2 (.030)	1.9 (.048)	40 (44)	22 (385)	160	Standard message "Packing List Enclosed" — 5" x 6"
8240	Polypropylene/Synthetic Rubber	1.6 (.041)	2.5 (.064)	50 (55)	30 (525)	160	Same as 824 except 500/roll
POUCH TAPE PADS							
830	Polypropylene/Synthetic Rubber	1.6 (.041)	2.5 (.064)	50 (55)	30 (525)	160	Standard message pad "Document Enclosed" — 5" x 6"
830CP	Polypropylene/Synthetic Rubber	1.6 (.041)	2.5 (.064)	50 (55)	30 (525)	160	Custom printed 830 pouch tape pad
832	Polypropylene/Synthetic Rubber	1.6 (.041)	2.5 (.064)	50 (55)	30 (525)	160	Standard message pad "Document Enclosed" — 6" x 10"
832CP	Polypropylene/Synthetic Rubber	1.6 (.041)	2.5 (.064)	50 (55)	30 (525)	160	Custom printed 832
LABEL PROTECTION TAPE ROLLS							
356	Polyester/Acrylate	1.0 (.025)	2.0 (.051)	20 (22)	25 (438)	90	Abrasion and temperature resistant
821	Acetate/Acrylate	1.6 (.041)	2.5 (.064)	25 (28)	12 (210)	15	Pink matte finish, write-on, low glare surface
823	Polypropylene/Synthetic Rubber	1.6 (.041)	2.4 (.061)	60 (66)	30 (525)	160	Yellow color highlights/protects carbonless labels
3565	Polypropylene/Synthetic Rubber	1.4 (.036)	1.9 (.048)	40 (44)	22 (385)	160	General purpose label protection tape
3765	Polypropylene/Acrylate	0.9 (.023)	1.5 (.038)	22 (22)	20 (350)	119	Utility grade label protection tape
LABEL PROTECTION TAPE PADS							
822	Polypropylene/Synthetic Rubber	2.0 (.051)	3.2 (.081)	55 (61)	35 (613)	160	4" x 6" transparent tape pads
3750P	Polypropylene/Synthetic Rubber	2.0 (.051)	3.2 (.081)	55 (61)	35 (613)	160	2" x 6" transparent tape pad; sealing and recouperage applications

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

3M™ ScotchPad™ Carry Handles

Easy to apply and use handles with custom branding and promotional messages

Pressure sensitive adhesive at each end of a film strip bonds securely on contact to the sides of a product or package, creating an adhesive-free loop between for carrying. Non-sticky paper loop can be custom printed with product information such as bar codes, logos, or promotional messages.

Loop area is available in colors or with custom printing using up to 4 colors

Applications include bundling multi-packs of lightweight goods, carrying products such as small appliances, toys, and hardware items, combining and providing a handle for awkward-to-carry items such as pillows, secure closure of "tuck-in" boxes (eg. bakery goods) – all while providing a handle.

174

Handles on a pad for peel and apply convenience.

175

Synthetic rubber adhesive on each end of a 3M™ Carry Handle grips securely to plastic and many other product and package surfaces. Rugged polypropylene/paper handle conforms to contours for full strength bonding over the contact area.

176

For multi-packs and awkward to hold packages and products. 3M™ ScotchPad™ Carry Handles add comfortable grab-and-go convenience as an added incentive for customers to buy.

177

Weight capacity of 3M™ ScotchPad™ Carry Handles range from 10-35 pounds depending on the handle size and the length of the adhesive contacting the product or package.

178

With custom printing 3M™ ScotchPad™ Carry Handles build brand recognition and display UPCs, coupons, and special offers.

Product Information:

Product	Tape Structure (Backing/Adhesive)	Backing Thickness mils (mm)	Total Thickness mils (mm)	Adhesion to Steel oz./in. (N/100 mm)	Tensile Strength lbs./in. (N/100 mm)	Elongation at Break %	Comments
ASTM Test Method:		**D-3652**	**D-3652**	**D-3330**	**D-3759**	**D-3759**	
8325	Polypropylene/Paper/Synthetic Rubber	2.0 (.051)	3.2 (.081)	55 (61)	35 (613)	160	Custom printed carry handle
8326	Polypropylene/Paper/Synthetic Rubber	2.0 (.051)	3.2 (.081)	55 (61)	35 (613)	160	White, unprinted carry handle
8327	Polyester/Paper/Synthetic Rubber	2.0 (.051)	3.5 (.089)	78 (85)	67 (174)	130	Custom printed heavy duty carry handle
8328	Polyester/Paper/Synthetic Rubber	2.0 (.051)	3.5 (.089)	78 (85)	67 (174)	130	White, unprinted heavy duty carry handle

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3M™ Padded Tape Products

Variety of tape products in pre-cut, easy-to-use strips on a pad

For application convenience, the quick tack benefits of 3M pressure sensitive adhesive tape technology are available in several padded products.

Tape strips

- Recouperage or bundling
- Identification and marking tags

Carry handles

- Multi-packs
- Small, awkward to carry packages

Hang tabs

- Stick to products or packages for hanging on display pegs

Application areas include in-store retail, merchandising promotions, beverages, luggage tags, consumer packaging, and general manufacturing.

179

3M™ ScotchPad™ Packaging Tape Pad 3750P – For recouperage, route delivery people can make in-field repairs of damaged or popped canned beverage carrier packs. Simple repair with a pre-cut tape strip saves the time and cost of returning damaged goods.


180

3M™ ScotchPad™ Custom Tape Pads 809G are available in a wide variety of sizes and colors. They can be used in many applications including repairing of paper or poly bags.


181

3M™ ScotchPad™Hang Tabs are clear, sturdy plastic with pressure sensitive adhesive that sticks to most surfaces. Handy for shrinkwrap packages as well as in-store repair of damaged packaging such as torn punches in chipboard header cards.

182

3M™ ScotchPad™ Custom Printed Tape Pads 809GP can be printed with a custom message in a wide variety of sizes.

183

3M™ ScotchPad™ Custom Printed Marking and Identification Tags 818CP hold up under rough handling for labeling, banding, pricing, or UPC applications.

184

3M™ ScotchPad™ Custom Printed Marking and Identification Tags 818CP can be custom printed for identification.


185

3M™ ScotchPad™ Marking and Identification Tags 818 are available in red, white, yellow and blue for flagging defects in quality control, indicating special handling or identifying parts.

Product Information:

Product	Tape Structure (Backing/Adhesive)	Backing Thickness mils (mm)	Total Thickness mils (mm)	Adhesion to Steel oz./in. (N/100 mm)	Tensile Strength lbs./in. (N/100 mm)	Elongation at Break %	Comments
ASTM Test Method:		**D-3652**	**D-3652**	**D-3330**	**D-3759**	**D-3759**	
PADDED TAPE PRODUCTS							
802	Acetate/Acrylate	1.6 (.041)	2.0 (.051)	1.5 (1.6)	15 (263)	15	Repositionable matte finish, write-on surface
808	Polypropylene/Synthetic Rubber	1.6 (.041)	2.6 (.066)	50 (55)	30 (525)	160	Standard printed message pads
809G	Polypropylene/Synthetic Rubber	2.0 (.051)	3.2 (.081)	55 (61)	35 (613)	160	Custom size pads – available in transparent, red, and yellow
809GP	Polypropylene/Synthetic Rubber	2.0 (.051)	3.2 (.081)	55 (61)	35 (613)	160	Custom printed 809G tape pads
818	Polypropylene/Paper/Synthetic Rubber	2.0 (.051)	3.2 (.081)	55 (61)	35 (613)	160	Identification and marking tags with adhesive tab; inventory and product defect marking, banding. Available in red, white, blue, and yellow
818CP	Polypropylene/Paper/Synthetic Rubber	2.0 (.051)	3.2 (.081)	55 (61)	35 (613)	160	Custom printed 818 marking tags
819	Polypropylene/Synthetic Rubber	1.5 (.038)	5.7 (.145)	100 (110)	150 (2600)	6	Bi-directional filament tape pads
822	Polypropylene/Synthetic Rubber	2.0 (.051)	3.2 (.081)	55 (61)	35 (613)	160	4" x 6" transparent tape pads; sealing, repair, recouperage
830	Polypropylene/Synthetic Rubber	1.6 (.041)	2.5 (.064)	50 (55)	30 (525)	160	Standard message DOCUMENTS ENCLOSED pouch tape pads (4" x 6"); attaching documents to shipping containers
830CP	Polypropylene/Synthetic Rubber	1.6 (.041)	2.5 (.064)	50 (55)	30 (525)	160	Custom printed 830 pouch tape pads
832	Polypropylene/Synthetic Rubber	1.6 (.041)	2.5 (.064)	50 (55)	30 (525)	160	Standard message DOCUMENTS ENCLOSED pouch tape pads (6" x 10")
832CP	Polypropylene/Synthetic Rubber	1.6 (.041)	2.5 (.064)	50 (55)	30 (525)	160	Custom printed 832 pouch tape pads
1072	Co-Polyester Laminate/Hot Melt Rubber	20.0 (.510)	25.8 (.655)	55 (61)	45 (788)	N/A	Individual J-hook hang tag; not padded
3750P	Polypropylene/Synthetic Rubber	2.0 (.051)	3.2 (.081)	55 (61)	35 (613)	160	2" x 6" transparent tape pad; sealing and recouperage applications
HANG TABS							
1074	Polyester/Co-Polyester Laminate/ Hot Melt Rubber	10.0 (.255)	13.5 (.343)	55 (61)	45 (788)	130	1" x 2" round hole hang tab
1075	Polyester/Co-Polyester Laminate/ Hot Melt Rubber	10.0 (.255)	13.5 (.343)	55 (61)	45 (788)	130	2" x 2" hole hang tab
1076	Polyester/Co-Polyester Laminate/ Hot Melt Rubber	10.0 (.255)	13.5 (.343)	55 (61)	45 (788)	130	2" x 2" hole hang tab

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

3M™ Narrow Width Film Tapes

A variety of characteristics for specialized applications

Whether you want to close a bag, secure an innerpack box or provide a tamper-indicating secondary closure on containers, these multi-purpose narrow width film tapes perform in all markets including:

- General industrial
- Food and beverage
- Clothing and textiles

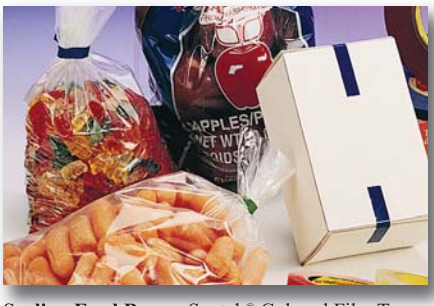
Remote sensing tapes are used for warehouse sortation, automatic sensing and guiding, and security sensing.

186

Scotch® Transparent Film Tape 600 with excellent holding power adheres to a variety of fabrics without staining or discoloration.

187

Sealing Inner Chipboard Boxes – Scotch® Transparent Film Tape 600 is an excellent choice for various packaging applications including combining, attaching and lightduty carton sealing.



188

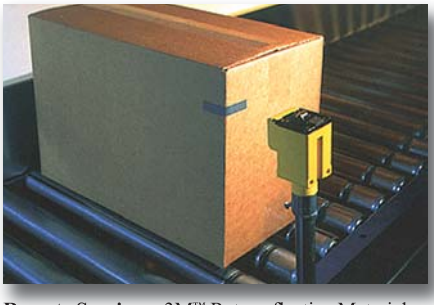
Sealing Food Bags – Scotch® Colored Film Tape 690 features a durable moisture and chemical resistant backing in six different colors. For various color coding, combining and attaching applications.

189

Heat Shrink Applications – Scotch® Heat Shrinkable Film Tape 6887 provides a tamper-indicating secondary closure on a variety of containers.

190

Sealing of Treated Paper and Rough Surfaces – Scotch® Film Fiber Tape 720 is a unique tear-by-hand product with an aggressive high tack adhesive system used for difficult specialty taping applications.



191

Remote Sensing – 3M™ Retroreflective Materials make it easy to design sensing systems based on simple, inexpensive photoelectric sensors. 3M™ Retroreflective Materials increase readability, range, and accuracy with greater control.

192

Hard-to-Stick-to Surfaces – Scotch® High Tack Film Tape 622 with a specially-formulated high tack adhesive system adheres to many hard-to-stick-to surfaces.

Product Information:

Product	Tape Structure (Backing/Adhesive)	Backing Thickness mils (mm)	Total Thickness mils (mm)	Adhesion to Steel oz./in. (N/100 mm)	Tensile Strength lbs./in. (N/100 mm)	Elongation at Break %	Comments
ASTM Test Method:		**D-3652**	**D-3652**	**D-3330**	**D-3759**	**D-3759**	
NARROW WIDTH FILM TAPES							
600	Paklon™ UPVC/Acrylic	1.5 (.038)	2.3 (.058)	40 (44)	28 (490)	45	Long aging, premium performance
605	Polypropylene/Acrylic	1.6 (.041)	2.5 (.064)	27 (30)	22 (385)	15	Cold temperature stability
610	Cellophane/Natural Rubber	1.4 (.036)	2.3 (.058)	43 (47)	23 (403)	15	Heat resistant up to 300˚ F
622	Polyester/Synthetic Rubber	1.4 (.036)	4.0 (.102)	150 (165)	35 (613)	80	High tack adheres to difficult surfaces
650	Cellophane/High Temperature Rubber	1.4 (.036)	2.5 (.064)	30 (33)	20 (350)	60	High temperature application up to 350˚ F
681	Paklon™ UPVC/Natural Rubber	1.5 (.038)	2.4 (.061)	30 (33)	25 (438)	60	Good moisture, solvent resistance
690	Paklon™/Natural Rubber	1.5 (.038)	2.3 (.058)	30 (33)	35 (613)	45	Colored film tapes for sealing; color coding in red, white, blue, black, and green
720	Film/Fiber/Synthetic Rubber Resin	4.5 (.114)	6.0 (.153)	90 (99)	20 (350)	7	High tack, hand tearable tape; sealing to treated papers
5910	Polypropylene/Acrylic	1.2 (.030)	1.8 (.046)	20 (22)	10 (175)	15	Utility grade for lightduty packaging applications
5912	Cellophane/Synthetic Rubber Resin	1.4 (.036)	2.4 (.061)	54 (59)	28 (490)	15	Utility grade for lightduty packaging applications
6887	Paklon™ UPVC/Synthetic Rubber Resin	1.5 (.038)	2.5 (.064)	50 (55)	30 (525)	55	Heat shrinkable, tamper indication
8004	Polypropylene/Acrylic	1.4 (.036)	2.2 (.056)	20 (22)	NA	NA	Excellent transparency. Suitable for fingerprint lifting applications
Product/ Color	**Tape Structure** (Backing/Adhesive)	**Typical Luminance Factor** (-4 deg.)	**Typical Luminance Factor** (45 deg.)	**Thickness – Applied** (in.)	**Temperature Resistance – Intermittent** (˚F/˚C)	**Lens**	**Comments**
REMOTE SENSING PRODUCTS							
3000X	Micro-cube corner sheeting/ acrylic adhesive/paper liner	3000x	1500x	0.020	150 (65.5)	Protected	Very high gain sheeting
7590	Sealed reflective tape/ low temperature synthetic resin/liner	200x	80x	0.007	400 (204)	Protected	Photoelectric grade sheeting
7610	Exposed reflective tape/ synthetic resin/liner	900x	700x	0.004	250 (121)	Exposed	High gain sheeting
7800	Exposed-lens reflective tape/ synthetic resin/linerless	200x	100x	0.007	500 (260)	Exposed	Photoelectric scanning tape

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

Backing and Adhesive Application Guide

ADHESIVES	BACKINGS						
		Acetate • UV Resistant • Easy to Dispense	**Cellophane** • Heat Resistant	**UPVC** • Moisture Resistant • Chemical Resistant • Heat Shrinkable	**Polyester** • Abrasion Resistant • Strong	**Polypropylene** • Clear • Conformable	**Film/Fiber** • Hand Tearable
	Natural Rubber • Wet Grab • High Adhesion • Yellow Color		• High temperature splicing	• Sealing • Holding • Tabbing			
	Suggested Products		**610, 650**	**681, 690**			
	Synthetic Rubber • Clear • Superior Adhesion • Clean Removal		• Tabbing • Bag closing • Light packaging • Hand application	• Small L-clips • Attaching • Tamper evident seal • Heat shrink	• Heavy duty • Difficult to adhere to surfaces • Minimal stretch • High tack	• Conformability • General use packaging	• Sealing to treated paper and rough surfaces
	Suggested Products		**5912**	**6887**	**622**	**823, 3565**	**720**
	Acrylic • Clear • Long Aging • Non-Yellowing • Cold Temperature Stability	• Light packaging • Hand application • Easy dispensing		• Holding • Attaching • Small carton L-clips • Tabbing • Light packaging where clarity and aging are important	• Label protection in harsh environments	• Cold package packaging • Economics	
	Suggested Products	**800, 821**		**600**	**356**	**605, 5910, 3765**	

3M™ Bumpon™ Protective Products – Molded Shapes

Take the edge off noise, put an end to scratches

Wherever slamming, scratching, nicking, scuffing, sliding, vibration, or noise could be a problem for your product – or make your product a problem – 3M™ Bumpon™ Protective Products provide a margin of safety. You have a choice of permanently resilient pads, feet, buttons, strips, bumpers, or spacers.

- Pressure sensitive adhesives bond fast and permanently when pressed to most clean, dry, and smooth surfaces
- Resilient elastomer will not dry out, rot, or embrittle; cushions and damps noise indefinitely
- High coefficient of friction resists skidding on most surfaces
- Contains no corrosive plasticizer or vulcanizing agent to chemically mar surfaces
- Easy to apply: separate from liner and "bump-it-on" with no screws, rivets or application equipment

193

Applied to the inside of cabinets or drawers, 3M™ Bumpon™ Quiet Clear Molded SJ6553 lets wood beauty or color show through. Soft elastomer mutes the slam upon closing. Patented cone shape damps sound more effectively than other shapes.

200

Durable pressure sensitive acrylic or rubber adhesives go on fast with just finger pressure. Saves time and money with no screw holes, glue mess, and drying time.

201

3M™ Bumpon™ Protective Product SJ5312 is a clear cylinder that blends with glass or acrylic cutting boards and similar applications requiring near invisibility. Resists yellowing with age.

202

203

For feet on a crock pot cooker (left), low profile 3M™ Bumpon™ Protective Products perform more reliably than high profile, because low profile better withstands the load and shear stress. High profile (right) allows better heat dissipation in electrical or electronic equipment.

Product Information:

Product	Color	Adhesive[1]	Shape	Width in. (mm)	Height in. (mm)	Hardness (Shore A)	Comments
Quiet Clear							
SJ6503	Clear	R-25	Hemisphere	0.440 (11.2)	0.200 (5.1)	55	Clear, sound damping properties.
SJ6506	Clear	R-25	Hemisphere	0.375 (9.5)	0.150 (3.8)	55	Clear, sound damping properties.
SJ6512	Clear	R-25	Cylindrical	0.500 (12.7)	0.140 (3.5)	55	Clear, sound damping properties.
SJ6553	Clear	R-25	Hexagonal Cone	0.433 (11.0)	0.120 (3.1)	55	Clear, sound damping properties.
SJ6561	Clear	R-25	Hexagonal Hemisphere	0.433 (11.0)	0.150 (3.8)	55	Clear, sound damping properties.
Cylindrical							
SJ5001	Black	R-30	Cylindrical	0.500 (12.7)	0.145 (3.6)	70	Concave top. Good load bearing capacity.
SJ5012	White, Gray, Brown, Black	R-30	Cylindrical	0.500 (12.7)	0.140 (3.6)	70	Versatile foot style for use on high-energy surfaces.
SJ5076	Black	R-30	Cylindrical	0.315 (8.0)	0.110 (2.8)	70	Flat top, nonskid for appliances and electronics.
SJ5312	Transparent	A-20	Cylindrical	0.140 (3.6)	0.140 (3.6)	75	Universal color matching. Nonslip. Ideal for picture framing.
SJ5412	Opaque, Bright White	A-20	Cylindrical	0.140 (3.6)	0.140 (3.6)	75	Universal color matching. Nonslip. Ideal for picture framing.
SJ5744	Black	R-30	Cylindrical	0.750 (19.1)	0.160 (4.1)	70	Excellent load bearing capacity.
SJ6112	Black	R-25	Cylindrical	0.500 (12.7)	0.140 (3.6)	70	Versatile foot style, best for low-energy materials.
Hemisphere							
SJ5003	White, Gray, Brown, Black	R-30	Hemisphere	0.440 (11.2)	0.200 (5.1)	70	Good energy absorption on impact.
SJ5006	White, Gray, Brown, Black	R-30	Hemisphere	0.375 (9.5)	0.150 (3.8)	70	Works well as cushioning stop.
SJ5009	Black, White, Gray, Brown	R-30	Hemisphere	0.880 (22.4)	0.400 (10.2)	70	Protects wall from door knob.
SJ5017	White, Black, Gray, Brown	R-30	Hemisphere	0.750 (19.1)	0.380 (9.7)	70	Recessed center, like screw-in bumper.
SJ5027	Black, Gray, Brown	R-30	Hemisphere	0.630 (16.0)	0.312 (7.9)	70	Cushions heaver items like glass or liftgate.
SJ5302	Transparent	A-20	Hemisphere	0.312 (7.9)	0.085 (2.2)	75	For feet on small electronics.
SJ5303	Transparent	A-20	Hemisphere	0.440 (11.2)	0.200 (5.1)	75	Popular small shape matches many surfaces
SJ5306	Transparent	A-20	Hemisphere	0.375 (9.5)	0.150 (3.8)	75	Smaller, energy absorbing with small contact point.
SJ5382	Transparent	A-20	Hemisphere	0.250 (6.4)	0.075 (1.9)	75	Smaller contact point for energy absorption.
SJ5532	White, Black	R-30	Hemisphere	1.880 (47.8)	0.660 (16.8)	70	Large, ideal for door stops.
Hexagon							
SJ5077	Black	R-30 Flat Top	Hexagonal Width	0.750 (19.1)	0.160 (4.1)	70	Smallest hemisphere for appliances and electronics feet use.
SJ5201	Light Brown	R-25	Hexagon Die-cut	0.433 (11.0)	0.125 (3.2)	25	Unique with round flat top.
SJ5202	Light Brown	R-25	Hexagon Die-cut	0.433 (11.0)	0.063 (1.6)	25	Soft foam with quick stick R-25 adhesive for cabinets.
Square							
SJ5007	White, Black	R-30	Tapered Square	0.413 (10.4)	0.098 (2.5)	70	Nested on pad for fast removal.
SJ5008	White, Gray, Brown, Black, Transparent	R-30	Tapered Square	0.500 (12.7)	0.125 (3.1)	70	Popular, thin nonskid for appliances or electronics.
SJ5018	White, Gray, Black, Brown	R-30	Tapered Square	0.500 (12.7)	0.230 (5.8)	70	Larger height, smaller top surface for heat dissipation.
SJ5023	White, Gray, Brown, Black	R-30	Tapered Square	0.812 (20.6)	0.300 (7.6)	70	For larger appliances and electronics.
SJ5514	Black, White, Gray, Brown	R-30	Tapered Square	0.812 (20.6)	0.520 (13.2)	70	Larger, high profile for heat dissipation.
SJ5705	Black	R-30	Tapered Square	1.280 (32.4)	0.250 (6.4)	70	Larger, low profile for heavier appliances.
Printed Circuit Board Spacers							
SJ61A1	Black	R-25	Cylindrical	0.312 (7.9)	0.200 (5.1)	70	Shape for PCB spacer applications.
SJ61A3	Black	R-25	Cylindrical	0.375 (9.5)	0.250 (6.35)	70	Shape for PCB spacer applications.
SJ61A4	Black	R-25	Cylindrical	0.375 (9.5)	0.311 (7.9)	70	Shape for PCB spacer applications.
SJ61A8	Black	R-25	Cylindrical	0.375 (9.5)	0.135 (3.4)	70	Shape for PCB spacer applications.
Top-Hat							
SJ6115	Black	R-25	Cylindrical	0.625 (15.9)	0.187 (4.75)	70	Flat top use for recesses.
SJ6125	Black	R-25	Hemisphere	0.625 (15.9)	0.250 (6.35)	70	Resists shear and removal.
Easy Slide							
SJ6344	Black	R-25	Cylindrical	0.750 (19.0)	0.160 (4.0)	80	Use for low friction.

[1]**A-20**: ***Acrylic*** - high strength adhesion to high energy surface. **R-25**: ***Synthetic Rubber*** - ideal for low surface energy substrates. **R-30**: ***Natural Rubber*** - excellent adhesion to a wide variety of surfaces.

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3M™ Bumpon™ Protective Products – Custom Shapes

More possibilities for shape, size, color, and a touch of quiet

Custom 3M™ Bumpon™ Protective Products expand the possibilities for shape, size, color, and applications beyond the standard line. The performance and savings are the same:

- Customize by one of three pressure sensitive adhesives to bond fast and permanently when pressed to most clean, dry, and smooth surfaces
- Resilient elastomer will not dry out, rot, or embrittle; cushions and damps noise indefinitely
- High coefficient of friction resists skidding on most surfaces
- Contains no corrosive plasticizer or vulcanizing agent to chemically mar surfaces
- Easy to apply: separate from liner and "bump-it-on" with no screws, rivets or application equipment

204

As a foot and spacer on the bottom of electronic equipment, custom 3M™ Bumpon™ Products allow heat dissipation, protect the surface, and resists skidding.

205

On specialty items such as a trophy, custom 3M™ Bumpon™ Protective Products cushion and protect a desk top or shelf from scratches.

206

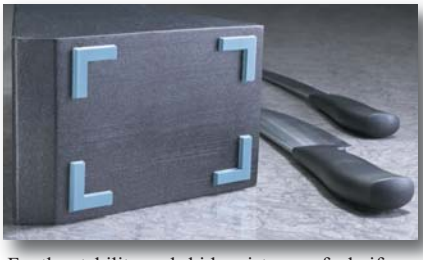
When you want a little touch of quiet and skid resistance for a PDA or other small product, custom 3M™ Bumpon™ Protective Products are scaled for the design. Adhesive is formulated to hold even with a smaller bonding surface.

207

With permanent resiliency and high coefficient of friction, custom 3M™ Bumpon™ Protective Products provide a soft touch and sure grip for pliers.

208

Customized clear cushions made from 3M™ Bumpon™ Protective Product material blend with the laptop computer base. High coefficient of friction helps keep the computer in place.



209

For the stability and skid-resistance of a knife block, 3M™ Bumpon™ Protective Product is customized as a flat, right angle for permanent adhesion to each corner.

Product Information:

	Product	Color[1]	Adhesive[2]	Shape	Width in. (mm)	Height in. (mm)	Hardness (Shore A)	Comments
	Customized Shapes*							
Cylindrical	SJ5363	Transparent	A-20	Cylindrical/ Hemispherical Top	0.858 (21.8)	0.224 (5.7)	75	Larger cylindrical - clear version.
	SJ5721	Gray	R-30	Cylindrical with Recess	1.299 (33.0)	0.314 (8.0)	70	Cylindrical with unique center recess.
	SJ5763	Gray	R-30	Cylindrical with Hemispherical Top	0.858 (21.8)	0.224 (5.7)	70	Larger cylindrical - opaque version.
	SJ5796	Black	R-30	Cylindrical with Hemispherical Top	0.363 (9.2)	0.199 (5.1)	70	Cylindrical with slight dome to top.
	SJ6145	Black, White	R-25	Cylindrical	0.500 (12.7)	0.025 (6.4)	70	Taller cylindrical w/"quick stick" R-25 adhesive.
Hemisphere	SJ5378	Transparent	A-20	Hemispherical with Flat Top	0.400 (10.2)	0.130 (3.3)	75	Cylindrical with small flat top area - clear version.
	SJ5402	Black	A-20	Hemispherical	0.312 (7.9)	0.085 (2.2)	75	Smaller profile for use on hand-held electronics.
	SJ5733	White	R-30	Hemispherical	0.376 (9.5)	0.200 (5.1)	70	Hemispherical slightly taller than SJ5006.
	SJ5741	Black	R-30	Hemispherical	0.375 (9.5)	0.219 (5.4)	70	Taller hemispherical.
	SJ5770	Black	R-30	Hemispherical	0.312 (7.9)	0.05 (1.3)	70	Thin version hemispherical.
	SJ5778	White	R-30	Hemispherical with Flat Top	0.400 (10.2)	0.130 (3.3)	70	Cylindrical w/small flat top area - opaque version.
	SJ5792	Gray	R-30	Hemispherical	0.315 (8.0)	0.145 (3.7)	70	Small diameter version hemispherical.
Rectangular	MB1104-101	Black	R-30	Rectangular	0.315 x 0.709 (8.0 x 18.0)	0.236 (6.0)	70	Larger, flat surface, rectangular.
	SJ5349	Transparent	A-20	Rectangular	0.625 x 1.50 (15.9 x 38.1)	0.400 (10.2)	75	Rectangular with unique tapered sides - clear version.
	SJ5369	Transparent	A-20	Rectangular	0.213 x 0.65 (5.4 x 16.5)	0.062 (1.6)	75	Flat-topped rectangle.
	SJ5384	Transparent	A-20	Rectangular	0.213 x 0.65 (5.4 x 16.5)	0.123 (3.1)	75	Curved top rectangle.
	SJ5474	Light Gray	A-20	Tapered Rectangular	0.2 x 0.375 (5.0 x 9.5)	0.065 (1.65)	75	Flat-topped rectangle.
	SJ5711	Black	R-30	Rectangular	0.245 x 0.96 (6.2 x 24.4)	0.100 (2.5)	70	Flat-topped rectangle.
	SJ5737	Black	R-30	Rectangular	0.236 x 0.59 (6.0 x 15.0)	0.138 (3.5)	70	Flat-topped rectangle.
	SJ5739	Black	R-30	Rectangular	0.350 x 0.73 (8.9 x 18.5)	0.310 (7.9)	70	Flat-topped rectangle.
	SJ5742	Black	R-30	Rectangular	0.354 x 0.728 (9.0 x 18.5)	0.180 (4.6)	70	Flat-topped rectangle.
	SJ5743	Black, White	R-30	Rectangular	0.312 x 1.0 (7.9 x 25.4)	0.062 (1.6)	70	Flat-topped rectangle with recess.
	SJ5749	Black	R-30	Rectangular	0.625 x 1.50 (15.9 x 38.1)	0.400 (10.2)	70	Rectangular with unique tapered sides - opaque version.
	SJ5762	Black	R-30	Rectangular with Rounded Ends	0.5 x 0.94 (12.7 x 23.9)	0.130 (3.3)	70	Rectangular - tapered top with curved ends.
	SJ5779	Black	R-30	Rectangular	0.52 x 0.77 (13.2 x 19.6)	0.180 (4.6)	70	Flat-topped rectangle.
	SJ5787	Sunlight Purple	R-30	Rectangular with Rounded Ends	0.243 x 1.037 (6.2 x 26.3)	0.155 (3.9)	70	Rectangular - curved top ("hot dog").
	SJ5797	White	R-30	Rectangular with Rounded Ends	0.477 x 0.675 (12.1 x 17.1)	0.139 (3.5)	70	Flat-topped rectangle.
	SJ5799	Black	R-30	Rectangular	0.339 x 0.476 (8.6 x 12.1)	0.142 (3.6)	70	Flat-topped rectangle.
Square	SJ53B6	Clear	A-20	Square Base with Cylindrical Top	0.812 (20.6)	0.620 (15.7)	75	Square with flat, circular top - clear version.
	SJ5346	Transparent	A-20	Tapered Square	0.906 (23.0)	0.235 (6.0)	75	Large square with flat top - clear version.
	SJ5389	Transparent	A-20	Square	0.786 (20.0)	0.255 (6.5)	75	Slightly taller version of SJ5346.
	SJ57B3	Black	R-30	Square with Rounded Corners	0.50 (12.7)	0.134 (3.4)	70	Square with rounded corners - low profile.
	SJ57B6	Black, White	R-30	Square Base with Cylindrical Top	0.812 (20.6)	0.620 (15.7)	70	Square with flat, circular top - opaque version.
	SJ5746	Black, White, Gray	R-30	Tapered Square	0.906 (23.0)	0.235 (6.0)	70	Large square with flat top - opaque version.
	SJ5765	Black	R-30	Square	0.437 (11.1)	0.230 (5.8)	70	Medium square with flat top.
	SJ5789	Black	R-30	Square	0.786 (20.0)	0.255 (6.5)	70	Slightly taller version of SJ5746.
	SJ6122	Black	R-25	Tapered Square Rounded Corners	0.410 (10.4)	0.125 (3.2)	70	Tapered square - w/"quick stick" R-25 adhesive.
Other	SJ5726	Black	R-30	Oval	0.266 (6.8)	0.059 (1.5)	70	Flat-topped oval shape.
	SJ5755	Black	R-30	Oval	0.213 x 0.764 (5.4 x 19.4)	0.125 (3.2)	70	Flat-topped oval shape.
	SJ5759	Black	R-30	"L" Shaped	1.063 (27.0)	0.125 (3.2)	70	L-shaped symmetrical right angle corner.
	SJ5781	Black	R-30	Elliptical	0.359 (9.1)	0.155 (3.9)	70	Unique hemispherical-topped oval.

[1] Additional custom colors and color matching are available at an additional charge. *Made to order products. Available with 10-day lead time. Minimum order 30,000 pieces.

[2] **A-20**: ***Acrylic*** - high strength adhesion to high energy surface. **R-25**: ***Synthetic Rubber*** - ideal for low surface energy substrates. **R-30**: ***Natural Rubber*** - excellent adhesion to a wide variety of surfaces.

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

3M™ Bumpon™ Protective Products – Polyurethane and TPE Rollstock

Die-cut to meet precise size and shape requirements

With 3M™ Bumpon™ Protective Products material in rollstock, converters can die-cut feet, spacers, and cushions in virtually any shape and size. The performance and savings are the same as the standard line:

- Pressure sensitive adhesives bond fast and permanently when pressed to most clean, dry, and smooth surfaces
- Resilient elastomer will not dry out, rot, or embrittle; cushions and damps noise indefinitely
- High coefficient of friction resists skidding on most surfaces
- Contains no corrosive plasticizer or vulcanizing agent to chemically mar surfaces
- Easy to apply: separate from liner and "bump-it-on" with no screws, rivets or application equipment

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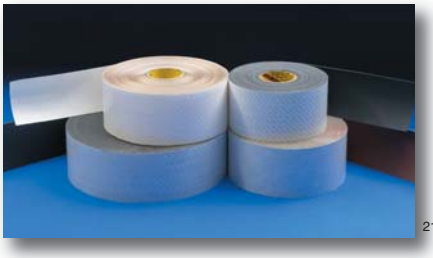
Die-cut to fit in the bottom of a cup holder, 3M™Bumpon™ Protective Product material provides a high coefficient of friction to help stabilize a cup. Permanently resilient elastomer cushions indefinitely.



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3M™Bumpon™ Protective Products rollstock is available in a wide range of lengths and widths with a choice of acrylic, rubber, and synthetic rubber adhesives for bonding to virtually any surface.

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A sheet of 3M™ Bumpon™ Protective Product rollstock covers the bottom of a storage tray in an automotive console and helps keep items from sliding out.

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Attached to the inside edge of a cup holder, parallel strips of 3M™ Bumpon™ Protective Product rollstock flex and contour to grip the sides of different sized cups.

214

As a nose guard spacer on a vehicle's front end, a die-cut strip of 3M™ Bumpon™ Protective Product rollstock helps protect the finish from scratches caused by high velocity rubbing.

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Select clear, black, or brown rollstock for applications ranging from a nonslip counter mat (left) to a picture frame (right). 3M™ Bumpon™ Protective Products provide a safety margin to protect surfaces against scuffing. High coefficient of friction also helps keep the mat in place and the frame straight.

Product Information:

Product	Color	Tape Construction		Product Hardness ASTM D-2240	Adhesive Type and Thickness mils (mm)	Liner Type and Thickness mils (mm)	Adhesion to Steel oz./0.5 in.	Comments
		Backing Facestock	Caliper mils[4] (mm)					
5200 Series[3]								
SJ5200	Light brown	Polyurethane Foam	125 (3.2)	25 Shore A	Synthetic Rubber (R-25) 2.0 (0.05)	60# Paper[2] 3.6 (0.09)	55	UL 94HB recognized.
SJ5216	Light brown	Polyurethane Foam	62 (1.6)	25 Shore A	Synthetic Rubber (R-25) 2.0 (0.05)	60# Paper[2] 3.6 (0.09)	55	UL 94HB recognized.
5600 Series[3]								
SJ5616	Clear	Clear Polyurethane	62 (1.6)	70 Shore A	Acrylic (A-20) 1.0 (0.03)	80# Paper[1] 4.8 (0.12)	25	Clear rollstock, great where invisible die-cuts are needed.
SJ5632	Clear	Clear Polyurethane	31 (0.8)	70 Shore A	Acrylic (A-20) 1.0 (0.03)	80# Paper[1] 4.8 (0.12)	25	Clear rollstock, great where invisible die-cuts are needed.
5800 Series[3]								
SJ5808	Black, Brown	Polyurethane	125 (3.2)	70 Shore A	Natural Rubber (R-30) 3.6 (0.09)	60# Paper[2] 2.0 (0.05)	22	UL 94HB recognized.
SJ5816	Black, Brown	Polyurethane	62 (1.6)	70 Shore A	Natural Rubber (R-30) 3.6 (0.09)	60# Paper[2] 2.0 (0.05)	22	UL 94HB recognized.
SJ5832	Black, Brown	Polyurethane	31 (0.8)	70 Shore A	Natural Rubber (R-30) 3.6 (0.09)	60# Paper[2] 2.0 (0.05)	22	UL 94HB recognized.
5900 Series[3]								
SJ5904	Black	Polyurethane Foam	250 (6.4)	36 Shore A	Acrylic (A-20) 4.8 (0.12)	80# Paper[1] 2.0 (0.05)	25	UL 94HB recognized, except for SJ-5916.
SJ5908	Black	Polyurethane Foam	125 (3.2)	36 Shore A	Acrylic (A-20) 4.8 (0.12)	80# Paper[1] 2.0 (0.05)	25	UL 94HB recognized, except for SJ-5916.
SJ5916	Black	Polyurethane Foam	62 (1.6)	36 Shore A	Acrylic (A-20) 4.8 (0.12)	80# Paper[1] 2.0 (0.05)	25	UL 94HB recognized, except for SJ-5916.
6000 Series[3]								
SJ6008	Black, Brown	Polyurethane	125 (3.2)	70 Shore A	Acrylic (A-20) 4.8 (0.12)	80# Paper[1] 2.0 (0.05)	25	UL 94HB recognized.
SJ6016	Black, Brown	Polyurethane	62 (1.6)	70 Shore A	Acrylic (A-20) 4.8 (0.12)	80# Paper[1] 2.0 (0.05)	25	UL 94HB recognized.
SJ6032	Black, Brown	Polyurethane	31 (0.8)	70 Shore A	Acrylic (A-20) 4.8 (0.12)	80# Paper[1] 2.0 (0.05)	25	UL 94HB recognized.
6200 Series[3]								
SJ6208	Black	Polyurethane	125 (3.2)	70 Shore A	Synthetic Rubber (R-25) 2.0 (0.05)	60# Paper[2] 3.6 (0.09)	55	Fast bonding, permanent adhesion. UL 94HB recognized.
SJ6216	Black	Polyurethane	62 (1.6)	70 Shore A	Synthetic Rubber (R-25) 2.0 (0.05)	60# Paper[2] 3.6 (0.09)	55	Fast bonding, permanent adhesion. UL 94HB recognized.
SJ6232	Black	Polyurethane	31 (0.8)	70 Shore A	Synthetic Rubber (R-25) 2.0 (0.05)	60# Paper[2] 3.6 (0.09)	55	Fast bonding, permanent adhesion. UL 94HB recognized.
TPE (Thermoplastic Elastic Elastomer) Santoprene™ Rollstock								
SJ6808	Black	Extruded TPE	122 (3.1)	64 Shore A	Acrylic PET	3 (.07)	90	Economical, easy to die cut and press, ready for converting.
SJ6816	Black	Extruded TPE	62 (1.5)	64 Shore A	Acrylic PET	3 (.07)	80	Economical, easy to die cut and press, ready for converting.
SJ6832	Black	Extruded TPE	28 (0.7)	64 Shore A	Acrylic PET	3 (.07)	80	Economical, easy to die cut and press, ready for converting.

[1] 80# (lb./ream) white silicone coated paper with printed 3M Bumpon Logo.
[2] 60# (lb./ream) white silicone coated paper with printed 3M Bumpon Logo.
[3] Service Temperature Range: -30˚F (-34˚C) to 150˚F (66˚C) and up to 225˚F (107˚C) intermittent exposure.
[4] 1 mil = .001 inches
Note: This technical information and data should be considered representative or typical only and should not be used for specification purposes.

3M™ Clean-View Pads

Reliable protection against paint overspray

This clear multi-sheeted adhesive system protects paint booth windows and light fixtures from overspray. You reduce the labor expense, downtime, and amount of chemicals used for cleanup.

- Clear polyethylene keeps paint out and lets light through to help brighten the work area
- Individually tabbed sheets for easy removal from the pad
- Eliminates re-application of single layer protection films
- Acrylic adhesive system for adhesion to glass surfaces


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Reliable protection is easy with 3M™ Clean-View Pads. Simply remove the clear protective liner to expose adhesive. Adhere the top adhesive edge to a dry, clean surface and squeegee over the bond area. When the sheet becomes contaminated, peel away to reveal a fresh, ready-to-use sheet.


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For large and small painting operations, 3M™ Clean-View Pads protect windows and light fixtures from overspray.


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3M™ Clean-View Pads help reduce the cost, downtime, and chemicals used in conventional cleanup.


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The individually tabbed and numbered sheets of 3M™ Clean-View Pads remove quickly and easily exposing a clean sheet ready for immediate use.

Product Information:

Product	Sizes In. (mm)	Pad/Adhesive/ Color	Sheets/ Pad	Sheet Thickness	Adhesion to Steel	Tensile Strength @ Break	Comments
5850	13 x 51 (330 x 1295)	Polyethylene/Clear/ Acrylic	20	1.5 mil (0.04 mm)	8.3 oz/in (9.1 N/100 mm)	5.1 lb/in (89.3 N/100 mm)	Ideal for paint booth operation. Protects from paint overspray.
5850	18 x 46 (457 x 1168)	Polyethylene/Clear/ Acrylic	20	1.5 mil (0.04 mm)	8.3 oz/in (9.1 N/100 mm)	5.1 lb/in (89.3 N/100 mm)	Ideal for paint booth operation. Protects from paint overspray.
5850	24 x 50 (609 x 1270)	Polyethylene/Clear/ Acrylic	20	1.5 mil (0.04 mm)	8.3 oz/in (9.1 N/100 mm)	5.1 lb/in (89.3 N/100 mm)	Ideal for paint booth operation. Protects from paint overspray.

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

3M™ Clean-Walk Mats

Capture dirt on contact before tracking it from one area to another

Between areas within a plant or between the plant and the office these adhesive mats capture dirt on contact from shoe soles, wheels, and other passing objects.

- Individually tabbed sheets remove easily to expose a fresh sheet
- Individually numbered sheets ensure one sheet removal at a time
- Large adhesive area allows two full steps

Unframed mats adhere to most smooth, clean and dry floors such as tile or concrete. Removes cleanly.

Framed mats are adhered to a plastic frame. Frame's nonskid back maintains position on carpet and other surfaces. Replacement pads/mats install easily to the reusable frame.

To preserve the cleanliness and appearance of floors and carpets, 3M™ Clean-Walk Mats reduce the amount of dirt passing between areas.

Product Information:

Product	Sizes In. (mm)	Pad/Adhesive/ Color*	Sheets/ Pad	Sheet Thickness	Adhesion to Steel	Tensile Strength @ Break	Elongation @ Break (%)	Comments
5830	18 x 36 (457 x 914)	Polyethylene/White/ Acrylic	30	1.45 mil (0.037 mm)	7.9 oz/in (8.6 N/100 mm)	4.5 lb/in (4.9 N/100 mm)	208%	Adhesive-backed mat ideal for concrete and other smooth floor surfaces.
5830	18 x 46 (457 x 1168)	Polyethylene/White/ Acrylic	30	1.45 mil (0.037 mm)	7.9 oz/in (8.6 N/100 mm)	4.5 lb/in (4.9 N/100 mm)	208%	Adhesive-backed mat ideal for concrete and other smooth floor surfaces.
5830	25 x 45 (635 x 1143)	Polyethylene/White/ Acrylic	30	1.45 mil (0.037 mm)	7.9 oz/in (8.6 N/100 mm)	4.5 lb/in (4.9 N/100 mm)	208%	Adhesive-backed mat ideal for concrete and other smooth floor surfaces.
5836	18 x 36 (457 x 914)	Polyethylene/White/ Acrylic	60	1.45 mil (0.037 mm)	7.9 oz/in (8.6 N/100 mm)	4.5 lb/in (4.9 N/100 mm)	208%	Adhesive-backed mat ideal for concrete and other smooth floor surfaces.
5836	18 x 46 (457 x 1168)	Polyethylene/White/ Acrylic	60	1.45 mil (0.037 mm)	7.9 oz/in (8.6 N/100 mm)	4.5 lb/in (4.9 N/100 mm)	208%	Adhesive-backed mat ideal for concrete and other smooth floor surfaces.
5836	25 x 45 (635 x 1143)	Polyethylene/White/ Acrylic	60	1.45 mil (0.037 mm)	7.9 oz/in (8.6 N/100 mm)	4.5 lb/in (4.9 N/100 mm)	208%	Adhesive-backed mat ideal for concrete and other smooth floor surfaces.
5838	36 x 46 (914 x 1168)	Polyethylene/White/ Acrylic	60	1.45 mil (0.037 mm)	7.9 oz/in (8.6 N/100 mm)	4.5 lb/in (4.9 N/100 mm)	208%	Adhesive-backed mat ideal for concrete and other smooth floor surfaces.
Clean-Walk Mats – Framed								
5840	31.5 x 25.5 (914 x 1168)	Polyethylene/White/ Pad on White Frame/ Acrylic	60	1.45 mil (0.037 mm)	7.9 oz/in (8.6 N/100 mm)	4.5 lb/in (4.9 N/100 mm)	208%	Nonskid framed mats are ideal for carpeted surfaces and are completely portable and reusable.
5840	31.5 x 25.5 (914 x 1168)	Polyethylene/White/ Pad on Black Frame/ Acrylic	60	1.45 mil (0.037 mm)	7.9 oz/in (8.6 N/100 mm)	4.5 lb/in (4.9 N/100 mm)	208%	Nonskid framed mats are ideal for carpeted surfaces and are completely portable and reusable.
Clean-Walk Replacement Pads for Framed Mat								
5842	30 x 24 (762 x 609)	Polyethylene/White/ Acrylic	60	1.45 mil (0.037 mm)	7.9 oz/in (8.6 N/100 mm)	4.5 lb/in (4.9 N/100 mm)	208%	Replacement pads, for use on reusable plastic frame, install quickly and easily.

* For information regarding mats in blue and gray colors, please contact your local 3M representative.

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

3M™ Scotchgard™ Invisible Transit Film

Easy, cost-effective graffiti removal

Transit authorities can spend millions annually to maintain and repair interior windows and glass. Specialized labor for replacing glass and materials cost add up quickly.

Now on interior windows you can simply peel away graffiti again and again with 3M™ Scotchgard™ Invisible Transit Film.

With **four layers of protection**, you save time and money while maintaining windows that are free from "scratchiti" and acid-etched marks. When one layer is defaced, simply peel it away to refresh the window quickly and easily.

- Minimal training
- Clean removal of each layer with no adhesive residue on the glass; single layer alternatives leave residue and require 3X more window cleaning procedures
- High clarity for glass-like appearance
- A clean, clear view helps improve ridership

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Easy-to-apply 3M™ Scotchgard™ Invisible Transit Film adheres to any flat glass that is free of dirt, debris, and oils. Four layers are as clear as glass to see through.

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With 3M™ Scotchgard™ Invisible Transit Film on the inside of public transportation windows, vandals deface one layer of four protective layers not the glass. The defaced layer is simply and cleanly removed to reveal a new layer of protection. 3M optimized adhesives provide long-term adhesion and clean, easy removal between each layer and the last layer and the glass.

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Each layer can be removed with a film removal tool. A maintenance worker simply picks and lifts the corner, then peels off the defaced sheet.

Product Information:

Product	Backing/ Adhesive	Backing Thickness	Base Layer Adhesion to Glass	Layer-to Layer Adhesion	Visible Light Transmission	Haze	Clarity	Comments
ASTM Test:		D-3652	D-3330	D-3330	D-1003	D-1003	D-1003	
1004	Polyester/ Acrylic	19.5 mils (0.5 mm)	23 oz./in. 25 N/100 mm)	11 oz.in. 12 N/100 mm)	82%	6.5%	93%	Transit vehicles interior glass surfaces.

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

3M™ Polyurethane Protective Tapes – Long Term

Long term protection against erosion, abrasion, corrosion, impact, UV light, and vandalism

This line of stick-on-contact tapes provides a durable barrier for many indoor or outdoor applications in metal finishing, building maintenance, aerospace, transportation, and general industrial.

- Fast application with no tools or special equipment; ready to use within 60 minutes, fully bonded within 24 hours
- Reduces maintenance costs by preserving surface integrity with a durable barrier against all of the following:
  - Abrasion and scratches
  - Impact from foreign objects
  - Erosion or degradation from natural elements such as sand, sleet, snow, rain, and wind
  - UV sunlight (outdoor tape)
- Conformable to fit surface geometries

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Aircraft radomes are protected against particle and rain erosion with transparent 3M™ Preformed Boots. The boots conform and adhere on contact to the curvature.

Product Information:

Product	Tape Structure (Backing/Adhesive)	Color	Total Thickness mils (mm)	Adhesion to Steel oz./in. (N/100 mm)	Tensile Strength lbs./in. (N/100 mm)	Elongation at Break %	Maximum Service Temp °F (°C)	Comments
ASTM Test Method			D-3652	D-3330	D-3759			
Indoor Type								
8547	Polyurethane/Acrylic	Transparent	13 (0.33)	14 (15)	75 (1313)	500	Up to 275° F (135°C)	Flame resistant/low tack (passes NFPA 701).
8560	Polyurethane/Rubber	Transparent	14 (0.35)	18 (19.7)	76 (1313)	500	Up to 275° F (135°C)	Indoor grade with quick grab adhesive.
8561	Polyurethane/Acrylic	Transparent	14 (0.35)	62 (67)	77 (1313)	500	Up to 275° F (135°C)	Indoor grade.
8616	Polyurethane/Acrylic	Transparent	12	82 (90)	32 (560)	500	Up to 200°F (93°C)	Excellent bond to plasticized vinyls.
8617	Polyurethane/Rubber	Transparent	12	105 (110)	32 (560)	500	Up to 150°F (65°C)	Used as a patch on canvas, rubber, leather, and as a fabric joining tape.
8686	Polyurethane/Flame Ret.	Transparent	6	23 (25) Aluminum	32 (560)	500	Up to 150°F (65°C)	Meets FAR 25.853. Low tack adhesive.
Outdoor Type								
8663	Polyurethane/Acrylic	Transparent	18 (0.46)	100 (110)	117 (2049)	500	Up to 275° F (135°C)	Excellent as a moisture barrier.
8671	Polyurethane/Acrylic	Transparent	14 (0.35)	86 (94)	80 (1400)	500	Up to 275° F (135°C)	Durable erosion protection with paper liner.
8672	Polyurethane/Acrylic	Transparent	8 (0.25)	79 (83)	40 (700)	500	Up to 275° F (135°C)	Thin, durable erosion protection.
8673	Polyurethane/Acrylic	Transparent	14 (0.35)	86 (94)	80 (1400)	500	Up to 275° F (135°C)	Durable erosion protection with best UV stability. RESTRICTED AVAILABILITY OVER 12" WIDE.
8674	Polyurethane/Acrylic	Transparent	8 (0.20)	60 (66) Aluminum	48 (842)	500	Up to 200°F (93°C)	Durable erosion protection with best UV stability. Dual liner. RESTRICTED AVAILABILITY OVER 12" WIDE.
8681HS	Polyurethane/Acrylic	Matte Clear Military Gray	14 (0.35)	95 (104)	87 (1524)	500	Up to 275° F (135°C)	Durable erosion protection with high shear adhesive.
Preformed Boots	Polyurethane/Acrylic	Multiple Options	14-41	All based on input film		500	Up to 200°F (93°C)	Over 500 preformed boot shapes are available.www.3M.com/Boots.

[1]Meets ASTN D6123/Db123M-97 *Up to 30 minutes **Up to 60 minutes

3M™ Protective Tapes – Short Term

Short-term protection against scratching, marring, chipping, abrasion, and UV

These rugged 1 to 5 mil tapes adhere and conform to protect product surfaces during production, packaging, shipping and installation. Tack level varies depending on the tape. All remove cleanly once the product is in the hands of the end user.

A variety of backings are available and each offers key characteristics:

Polyethylene Tapes

- Transparent with good abrasion resistance
- Cost-effective

UV Tapes

- Transparent or blue with enhanced outdoor UV resistance

Continued on page 54.

During manufacturing and transport, transparent 3M™ Polyethylene Protective Tapes protect many finished automotive interior surfaces from abrasion, nicks, and scratches. Clear acrylic adhesive holds with very low tack for easy removal.

Product Information:

Product	Tape Structure (Backing/Adhesive)	Total Thickness mils (mm)	Adhesion to Steel oz./in. width	Tack Level	Elongation at Break %	Application Ideas
Based on ASTM Test Method:		D-3652	D-3330		D-3759	
		Nominal Results				
Polyethylene Tapes						
2104	Polyethylene/Acrylic	2 (0.05)	1	Very low	450	Glass. CRT screens. LED, LCD screens.
2105	Polyethylene/Acrylic	2 (0.05)	2	Very low	450	Bright annealed or polished steel sheets and coils. Mirrors and glass products. LCD, CRT screens.
2110	Polyethylene/Acrylic	2 (0.05)	3	Low	450	Extruded, molded, plastic automotive trim. Gloss-finished decorative laminates.
2112	Polyethylene/Acrylic	2 (0.05)	4	Low	450	Painted gloss finish metal building panels. Premask for vinyl pinstriping and decals.
2125	Polyethylene/Acrylic	2 (0.05)	5	Moderate	450	Painted, embossed, architectural building panels. Semi-gloss laminates and acrylic sheets.
2126	Polyethylene/Acrylic	2 (0.05)	7	Moderate	450	Slightly textured plastics, steel garage doors, metal extrusions and painted building panels.
2187	Polyethylene/Acrylic	2 (0.05)	14	Moderate	450	For textured plastics and metals.
3104	Polyethylene/Acrylic	3 (0.08)	1	Very low	450	High-gloss coated metals. CRT and LCD screens.
3105	Polyethylene/Acrylic	3 (0.08)	2	Very low	450	Bright annealed or polished steel sheets and coils. Mirrors and glass products. Cell phones, windows, CRT and LCD screens.
3110	Polyethylene/Acrylic	3 (0.08)	2	Very low	450	Bright annealed or polished stainless. Gloss, painted metals.
3112	Polyethylene/Acrylic	3 (0.08)	3	Low	450	Smooth, gloss, painted building panels. Premask for vinyl pinstriping, decals and emblems.
3125	Polyethylene/Acrylic	3 (0.08)	5	Moderate	450	Cut-to-length metal sheets in fabrication, shipping and storage. Semi-gloss, painted metals and plastic surfaces.
3126	Polyethylene/Acrylic	3 (0.08)	7	Moderate	450	Embossed, painted, metal building panels. Mill-finished aluminum and stainless sheets or coils in fabrication and shipping.
3173	Polyethylene/Acrylic	3 (0.08)	4	Low	450	Premask for vinyl pinstriping, decals and lettering.
3179	Polyethylene/Acrylic	3 (0.08)	20	High	450	Nonskid fiberglass. Fabric seams and headliners. Auto ABS scuff plates.

(continued on next page)

Product Information:

Product	Tape Structure (Backing/Adhesive)	Total Thickness mils (mm)	Adhesion to Steel oz./in. width	Tack Level	Elongation at Break %	Application Ideas
Based on ASTM Test Method:		D-3652	D-3330		D-3759	
		Nominal Results				
Polyethylene Tapes (continued)						
3187	Polyethylene/Acrylic	3 (0.08)	11	High	450	Brushed aluminum and stainless. Hand applied to cultured marble (typically dusty surface).
3188	Polyethylene/Acrylic	3 (0.08)	13	High	450	Matte, high-pressure laminates. Matte plastics.
3195EZ	Polyethylene/Acrylic	3 (0.08)	25	Very High	450	Treated carpet, low and high pile.
35A89	Polyethylene/Acrylic	4 (0.10)	16	High	450	Hot tubs, ABS matte, matte laminate, acrylic, HDPE.
4112	Polyethylene/Acrylic	4 (0.10)	3	Low	450	Premask for vinyl decals and pinstriping. Polished stainless and specular finish anodized aluminum sheets and coils.
4125	Polyethylene/Acrylic	4 (0.10)	5	Moderate	450	Polished #3 and #4 finished stainless coils or sheets.
4126	Polyethylene/Acrylic	4 (0.10)	7	Moderate	450	Molded fiberglass or acrylic tubs and spas. Automotive applications such as: bumpers, fascias, body side molding paint protection, tail lights or window glass.
4167	Polyethylene/Acrylic	4 (0.10)	18	High	450	Textured decorative laminates and vinyl. Woodgrain laminates, matte plastics.
4179	Polyethylene/Acrylic	4 (0.10)	20	High	450	Dissimilar metals. Automotive kick plates.
4187	Polyethylene/Acrylic	4 (0.10)	13	High	450	Cultured marble and molded fiberglass. Woodgrain vinyl decorative laminates.
4188	Polyethylene/Acrylic	4 (0.10)	15	High	450	Brushed anodized aluminum. Matte plastics or high-pressure laminates.
5112	Polyethylene/Acrylic	5 (0.13)	3	Low	450	Mirror-finish stainless, specular anodized aluminum. Automotive applications such as: paint mutilation, tail lights, lens covers and window glass.
5125	Polyethylene/Acrylic	5 (0.13)	3	Low	450	Painted metal, gloss finish building panels. Coated metal automotive trim.
5126	Polyethylene/Acrylic	5 (0.13)	5	Moderate	450	Mill finish aluminum and stainless coils and sheets. Molded fiberglass, polyester tubs and showers.
5187	Polyethylene/Acrylic	5 (0.13)	10	Moderate	450	Cultured marble, textured plastics, matte painted metals.
5188	Polyethylene/Acrylic	5 (0.13)	15	High	450	Cultured marble, textured plastics, matte painted metals.
8179	Polyethylene/Acrylic	8 (0.21)	15	High	450	Dissimilar metals.
Retardant Tapes						
4F79	Polyethylene/Acrylic	4 (0.10)	15	High	600	Flame retardant carpet tape complies to F.A.R. 25.853 (appendix F, part 25).
4F94	Polyethylene/Acrylic	4 (0.10)	20	High	600	Flame retardant carpet tape complies with IMO resolution A-653 (16) for cruise lines.
UV Tapes						
2AU23B/UV	Co-extruded "A"	2 (0.05)	3	Low	600	For glass and window frames with a high-gloss surface, high-gloss painted metals and plastics.
2AU26B/UV	Co-extruded "A"	2 (0.05)	7	Moderate	600	For flat finished vinyl and aluminum window frames, flat finished painted metals and plastics.
31U23C/UV	Polyethylene/Acrylic	3 (0.08)	3	Low	450	For glass and window frames with a high-gloss surface, high-gloss painted metals and plastics.
31U26C/UV	Polyethylene/Acrylic	3 (0.08)	7	Moderate	450	For flat finished vinyl and aluminum window frames, flat finished painted metals and plastics.

Selected tapes are available in transparent, blue, white and black/white. For information regarding available colors, contact customer service at 1-800-241-2031.
Note: This technical information and data should be considered representative or typical only and should not be used for specification purposes.

229

Covered with 3M™ UV Protective Tape, plastic surfaces such as refrigerator dairy doors or vegetable crispers stay new looking through transit and display in the store.

230

3M™ UV Protective Tapes protect automotive mirror finishes from abrasion and marring. UV-stable backing resists the effect of UV exposure for up to 3 months.

231

3M™ Protective Tape applied to the metal control panel of a stove protects the paint against abrasion, scratches, and dirt during subsequent assembly steps, warehousing, and shipping.

3M™ Protective Tapes – Short Term – continued

Short-term protection

(continued from page 52)

Carpet Tapes

- Transparent with easy unwind

Cold Seal®* Tapes

- Clear film seals to itself for packaging small parts

Co-Extruded "A" Tapes

- Puncture resistance and break strength surpass many typical LDPE films

Co-Extruded Black/White Tapes

- UV resistance up to 6 months

Polyester Tapes

- Best choice for clarity with excellent heat and puncture resistance

Polypropylene Tapes

- Good resistance to heat, abrasion, and UV

232

To help ensure a scratch-free surface for the end user, 3M™ Co-Extruded "A" Tape is applied after final finishing to sinks, spas, and countertops prior to packaging. Enhanced abrasion and puncture resistance protects the surface through shipping and installation. Tape then removes cleanly.

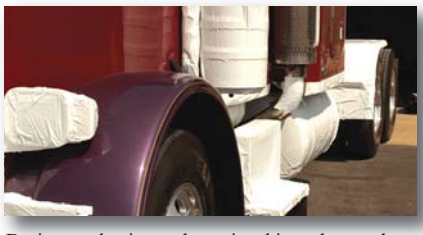
Product Information:

Product	Tape Structure (Backing/Adhesive)	Total Thickness mils (mm)	Adhesion to Steel oz./in. width	Tack Level	Elongation at Break %	Application Ideas
Based on ASTM Test Method:		D-3652	D-3330		D-3759	
		Nominal Results				
Carpet Tapes						
2E79	Polyethylene/Acrylic	2 (0.05)	20	High	600	Automotive carpeted areas, fabric seals and headliners.
2E93EZ	Polyethylene/Acrylic	2 (0.05)	25	Very high	600	Automotive carpets, fabric seals and headliners.
2E95EZ	Polyethylene/Acrylic	2 (0.05)	35	Very high	600	Automotive carpets, fabric seals and headliners.
2E97C	Polyethylene/Acrylic	2 (0.05)	35	Very high	600	Automotive carpets, fabric seals and headliners.
2E98C	Polyethylene/Acrylic	2 (0.05)	45	Very high	600	For marine carpet only.
4193EZ	Polyethylene/Acrylic	4 (0.10)	25	Very high	600	Residential carpet tape.
5193EZ	Polyethylene/Acrylic	5 (0.13)	30	Very high	600	Residential carpet tape.
3195EZ	Polyethylene/Acrylic	3 (0.08)	25	Very high	600	Higher adhesion for treated carpet.
4195EZ	Polyethylene/Acrylic	4 (0.10)	30	Very high	600	Higher adhesion for treated carpet.
Cold Seal® Films						
3130	Polyethylene/Rubber	3 (0.08)	14**	N/A	450	Cohesive film used to package small machine parts, hand tools and literature.
4130	Polyethylene/Rubber	4 (0.10)	12**	N/A	450	Cohesive film used to package small machine parts, hand tools and literature.
5130	Polyethylene/Rubber	5 (0.13)	11**	N/A	450	Cohesive film used to package small machine parts, hand tools and literature.
Co-Extruded "A" Tapes						
2A04	Co-Extruded/Acrylic	2 (0.05)	1	Very low	600	High-gloss coated metals, glass, CRT screens.
2A05	Co-Extruded/Acrylic	2 (0.05)	2	Very low	600	High-gloss plastic laminates, mirror and glass products. For gloss painted metals.
2A10	Co-Extruded/Acrylic	2 (0.05)	2	Very low	600	Gloss decorative laminates. Smooth acrylic sheet and film. For gloss painted metals.
2A12	Co-Extruded/Acrylic	2 (0.05)	4	Low	600	Painted, gloss finish architectural building panels. Extruded, painted urethane moldings.
2A25	Co-Extruded/Acrylic	2 (0.05)	6	Moderate	600	Painted building panels. Automotive moldings and urethane fascias.

(continued on next page)

233

3M™ Protective Tapes protect decorative metal light switches and kick plates. Cold-Seal® Films keep screws together and prevent them from scratching other items in the package.



234

During production and transit, white polypropylene tape protects truck surfaces such as rocker panels, chrome finishes, mirrors, lights and lenses.

235

Applied over automotive lights, 3M™ Co-Extruded Black/White Tapes offer UV resistance for up to 6 months while protecting the glass and other surfaces from abrasion and scratching.

Product	Tape Structure (Backing/Adhesive)	Total Thickness mils (mm)	Adhesion to Steel oz./in. width	Tack Level	Elongation at Break %	Application Ideas
Based on ASTM Test Method:		D-3652	D-3330		D-3759	
		Nominal Results				
Co-Extruded "A" Tapes (continued)						
2A26	Co-Extruded/Acrylic	2 (0.05)	9	Moderate	600	Painted, embossed, metal building panels, canopies and molded fiberglass.
2A87	Co-Extruded/Acrylic	2 (0.05)	14	High	600	Matte decorative and vinyl laminates.
2A88	Co-Extruded/Acrylic	2 (0.05)	15	High	600	Matte decorative and vinyl laminates. Matte, plastic screen-printed nameplates.
2A89	Co-Extruded/Acrylic	2 (0.05)	15	High	600	Matte decorative and vinyl laminates. Matte, plastic screen-printed nameplates.
25A10	Co-Extruded/Acrylic	3 (0.08)	2	Very low	600	Specular anodized aluminum. Bright annealed or polished stainless.
25A12	Co-Extruded/Acrylic	3 (0.08)	3	Low	600	Smooth, gloss painted building panels. Premask for vinyl pinstriping, decals and emblems.
25A25	Co-Extruded/Acrylic	3 (0.08)	7	Moderate	600	Semi-gloss painted metals and plastic surfaces. Automotive moldings.
25A26	Co-Extruded/Acrylic	3 (0.08)	9	Moderate	600	Embossed, painted metal building panels. Molded fiberglass.
25A29	Co-Extruded/Acrylic	3 (0.08)	9	Moderate	600	Satin or bronzed painted aluminum and brushed finished steel and aluminum, textured plastics.
25A87	Co-Extruded/Acrylic	3 (0.08)	13	High	600	Brushed aluminum and stainless. Hand applied to cultured marble (typically dusty surface).
25A88	Co-Extruded/Acrylic	3 (0.08)	15	High	600	Matte high-pressure laminates. For matte finished automotive plastic parts.
25A89	Co-Extruded/Acrylic	3 (0.08)	15	High	600	Matte high-pressure laminates. For matte finished automotive plastic parts.
2A29	Co-Extruded/Acrylic	2 (0.05)	10	Moderate	600	Brushed aluminum. Textured, plastic automotive moldings. Offers superior protection for mill finished aluminum and steel surfaces.
5A29	Co-Extruded/Acrylic	5 (0.13)	10	Moderate	600	Offers superior protection for mill finished aluminum and steel surfaces.
Co-Extruded Black/white Tapes						
25M26X	Co-Extruded/Acrylic	3 (0.08)	8	Moderate	600	For mill finished steel and aluminum, dull painted surfaces.
3W25X	Co-Extruded/Acrylic	3 (0.08)	5	Moderate	450	For mill finished steel and aluminum, semi-gloss painted surfaces.
3W26X	Co-Extruded/Acrylic	3 (0.08)	7	Moderate	450	For mill finished aluminum and 2B finished steel sheets and coil.
3W29X	Co-Extruded/Acrylic	3 (0.08)	8	Moderate	450	For brushed aluminum and steel sheets and coil, satin or bronzed painted metals.
3W55X	Co-Extruded/Acrylic	3 (0.08)	9	Moderate	450	Painted metal sandwich panels, painted semi-gloss aluminum and steel finishes.
Polyester Tapes						
1614	Polyester/Acrylic	1 (0.03)	2	Very low	88	High-pressure laminates, name plates, instrument panels, clock faces and cell phone windows.
1675	Polyester/Acrylic	1 (0.03)	2	Very low	88	High-pressure laminates, name plates and instrument panels.
Polypropylene Tapes						
24S56W	Polypropylene/Acrylic	3 (0.08)	9	Moderate	700	White tape for painted metals, plastic surfaces and automotive clearcoat paint finishes.
44S56W	Polypropylene/Acrylic	4 (0.10)	9	Moderate	800	White tape for painted metals, plastic surfaces and automotive clearcoat paint finishes.
64S58W	Polypropylene/Acrylic	6 (0.15)	9	Moderate	630	Use on base, clearcoat and high gloss painted surfaces. Ideal for mutilation protection.
Other Protective Tapes						
335/Pink	Polyester/Rubber	2 (0.05)	2	Very low	125	Low tack protective tape.
336/Clear	Polyester/Rubber	1.5 (0.04)	1	Very low	115	Transparent, low tack protective tape, good attachment to smooth surface
346/Tan	Flat Paper Stock/Rubber	17 (0.42)	22	Very high	4	Heavy-duty protective tape.
9343/Black	Nonwoven/Acrylic	17 (0.43)	27	Very high	400	Conformable for irregular shaped parts.

Selected tapes are available in transparent, blue, white and black/white. For information regarding available colors, contact customer service at 1-800-241-2031.

** Value measured as a cohesive bond strength in units. Note:This technical information and data should be considered representative or typical only and should not be used for specification purposes.

3M™ Sandblast Stencil Products and Impact Stripping Tapes

Thick, durable rubber backing for demanding surface protection

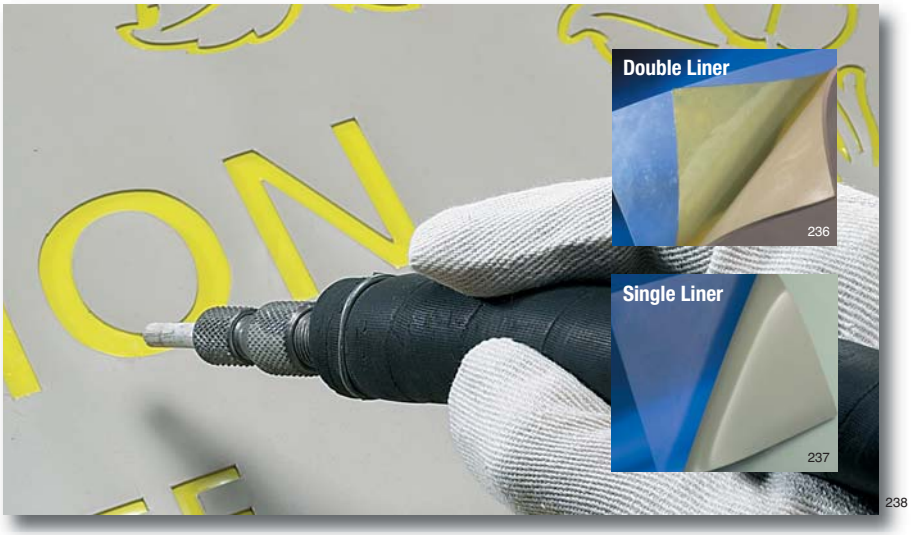
Combining 32-80 mil thick rubber backing with aggressive pressure sensitive adhesive, these products meet the rigors of two tough masking applications:

3M™ Sandblast Stencil Products

- Rubber thicknesses ranging from 32-40 mils withstand the heavy blasting used to create crisper, deeper images in stone, wood, and other surfaces
- Uniform backing thickness helps ensure efficient plotter cutting
- Clean, visible cut marks reduce picking and weeding time
- Adhesive adheres to numerous surfaces and removes cleanly
- Advanced rubber backing formulation prevents stretching and design distortion

3M™ Impact Stripping Tapes

- Choice of 32 or 80 mil rubber backing for surface protection during media stripping processes



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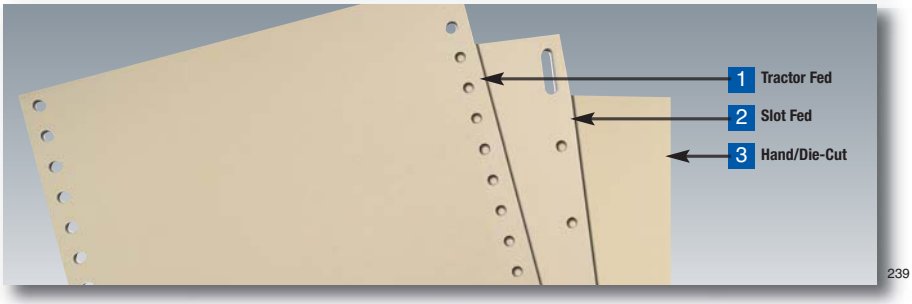

239

For cost-effective production and consistent professional results, 3M™ Sandblast Stencils are available with single or double liners for friction, slot and tractor fed plotters as well as hand and die-cutting. Single liners maintain design integrity with either computer or stencil press equipment. Double liners provide support for "islands" eliminating the need for application tape.

240

For blasting wood and foam signs, the balanced adhesive system of 3M™ Sandblast Stencil Tapes removes cleanly without staining or residue.

241

3M™ Sandblast Stencil Tapes offer the durability and consistent thickness that is required when blasting marble or granite.


242

Uniform stencil thickness and quality hole punch allow smooth and productive design cutting.

243

3M™ Performance Plus Duct Tape 8979 is ideal for field blasting to help protect surrounding granite surface from blasting impact and rebound damage. Aggressive adhesive stays in place yet removes clean without residue.


244

For clean, intricate designs, cut marks on 3M™ Sandblast Stencil 519YP2 are clean and visible for easy and precise picking and weeding.


245

Abrasion-resistant rubber backing and acrylic adhesive of 3M™ Impact Stripping Tapes protect surfaces during plastic media blasting.

Product Information:

Product/ Color	Adhesive Type	Liner Material and Thickness mils (mm)	Total Thickness Backing/ Adhesive/Liner mils (mm)	Product Formats				Adhesion Level			Comments
				Gerber Compatible (Slot Fed)	IBM Compatible (Tractor Fed)	Friction Fed[1]	Hand-Cut and/or Die-Cut	Low	Medium	High	
Double Liner											
519Y/Tan[2]	Rubber	Polyester 1.5 Polypropylene 2.0	45				•		•		Yellow, translucent polyester inner liner. White, polypropylene outer liner.
519YS/Tan				•							
519YT/Tan					•						
519YP2/Tan[2]	Rubber	Polyester 1.5 Polyester 2.0	48				•			•	Yellow, translucent polyester inner liner. Extra thick, translucent polyester outer liner. Highest adhesion level for double linered products. Wide format available.
519YP2S/Tan				•							
519YP2T/Tan					•						
519YP/Tan	Rubber	Polyester 2.0 Polyester 4.0	50			•			•		Translucent polyester inner liner. Extra thick, translucent polyester. Wide format available.
519YPT/Tan					•						
Single Liner											
507/Green	Rubber	Polyethylene 2.0	43				•	•			Green, high release liner. Butter "cut". Ideal for letter press operations.
510/Green	Rubber	Polyester 4.0	42				•	•	•		Translucent, easy liner release. Use on wood and painted surfaces.
520/Tan	Gray Rubber	Polyester 2.0	45				•				Translucent, high liner release. Best blast resistance for single liner products.
520S/Tan				•					•	•	
520T/Tan					•						
520ETL/Tan[2]	Gray Rubber	Polyester 4.0	44				•			•	Extra thick, translucent liner.
1532/Green	Rubber	Polyester 4.0	32				•				Extra thick, translucent, high liner release. Highest adhesion for single liner products. Excellent for intricate designs. Conformable for use on irregular surfaces.
1532S/Green				•					•		
1532T/Green					•						

Temperature Range on all tapes is 50–120˚F, except 500 and 528, where range is -20 to 150°F (-29 to 66°C).

Product/ Color	Tape Structure (Backing/Adhesive) (Liner)	Backing Thickness mils (mm)	Total Thickness mils (mm)	Adhesion to Steel oz./in. (N/100 mm)	Adhesion to Glass oz./in. (N/100 mm)	Adhesion to Granite oz./in. (N/100 mm)	Tensile Strength lbs./in. (N/100 mm)	Elongation at Break %	Comments
ASTM Test Method:			D-3652	D-3652	D-3330	D-3759	D-3759		
Impact Stripping Tapes									
500/Green	Rubber/Acrylic (Paper)	32 (0.8)	33 (0.8)	25 (27)	N/A	N/A	25 (27)	85	Good for small lettering. Acrylic adhesive, ideal for use during plastic media blasting.
528/Tan	Rubber/Acrylic (Paper)	80 (2)	85 (2.2)	38 (41)	21	N/A	18 (313)	145	85 mil 500 backing.

Temperature Range on all tapes is 50–120˚F, except 500 and 528, where range is -20 to 150°F (-29 to 66°C).

Product	Coating Base	Color	Consistency	Available Size	Comments[3]
Fillers					
2	Rubber	Light Beige	Syrupy	Quarts, Gallons	Designed for smooth and polished surfaces. More aggressive than #3.
3	Rubber	Light Beige	5x more viscous than Filler #2	Gallon	Typically used on axed or frosted surfaces.

[1] Rubber is trimmed back to expose 1-1/4" of polyester liner for use with friction feed plotters.
[2] May be used with friction feed plotters.
[3] 3M™ Double Coated Tapes 463 and 465 can be used in place of fillers. Excellent for use with pavers, bricks and on-site blasting.

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

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247

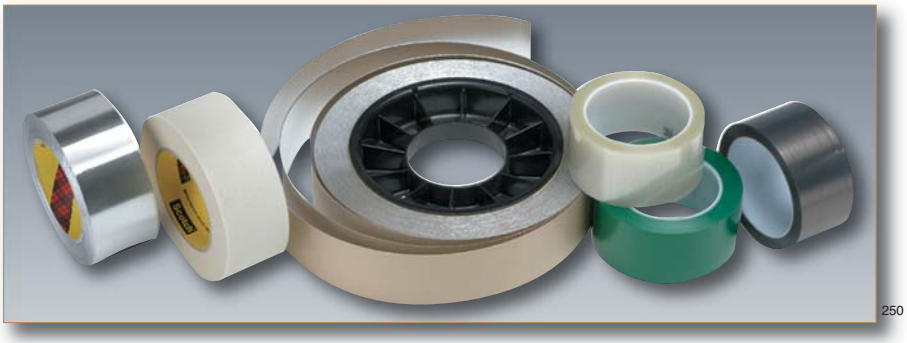

248

3M™ Sandblast Stencil 519YP2, with its easy-to-see yellow inner liner, enhances the monument process by providing more precise picking power for greater productivity, blasting accuracy and liner residue cleanup. The advantage of yellow versus a colorless liner is especially important when working with intricate details.

3M™ Specialty Tapes

Selection simplicity for a wide variety of applications

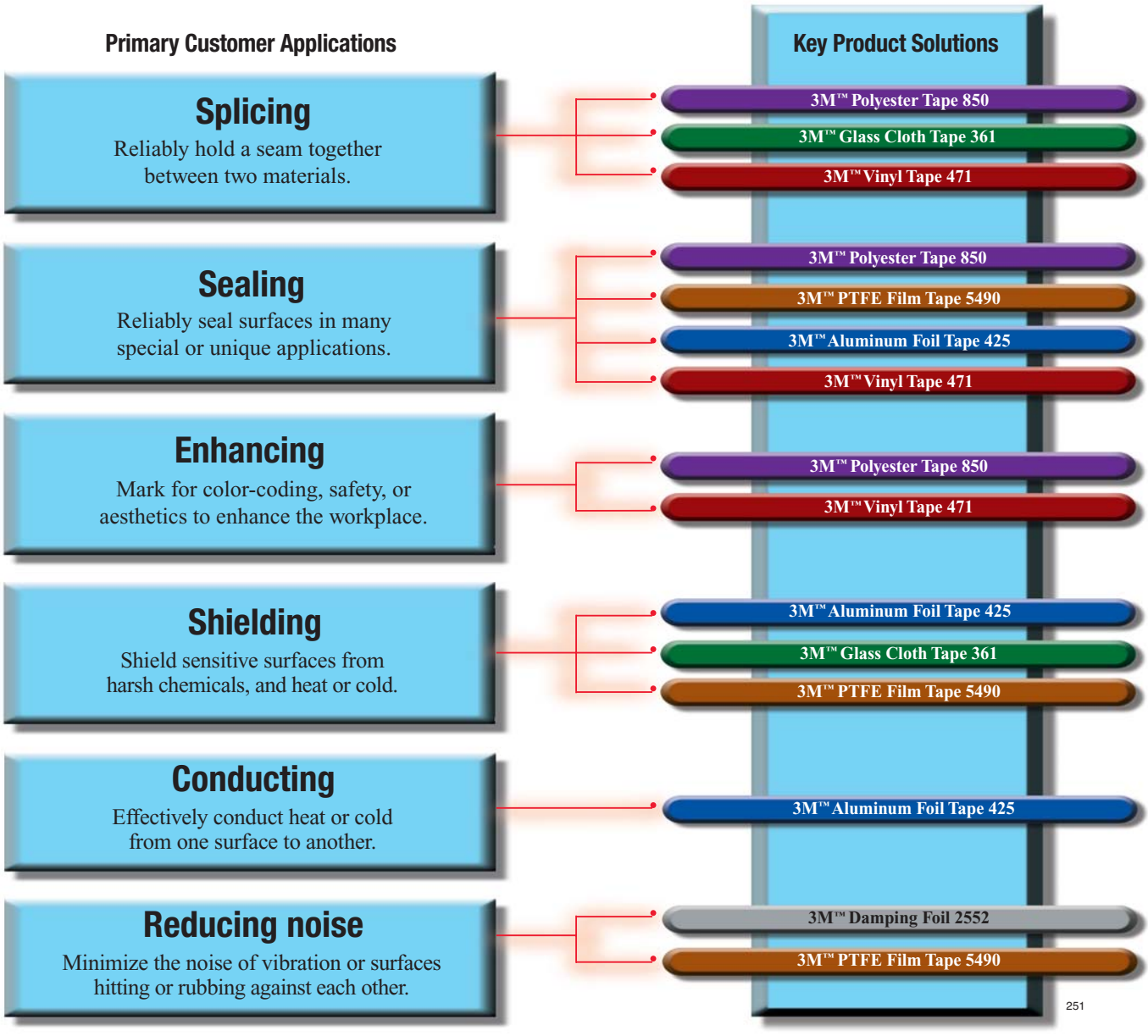
249



250

With more than 120 product solutions, the portfolio of 3M™ Specialty Tapes presents customers with numerous characteristics to evaluate in making the optimum choice for an application.

To help simplify and streamline the selection process, six products have been highlighted for their versatility. These Specialty Six solve 80% of customer application needs. The six represent the key backings that comprise much of the 3M™ Specialty Tapes line: glass cloth, metal foil, polyester, slick surface (PTFE), and vinyl.



251

Six Products for 80% of Customer Applications:

Vinyl Tapes

1

3M™ Vinyl Tape 471

252

- Easily apply color-coding, markings, and identification to aisles, lanes, hazard areas, tools, and equipment
- "Color throughout" construction resists scrapes, wear, and chemicals
- Fine line paint masking
- Protect surfaces against abrasion and chemicals

- Add decorative trim that also reinforces and seals
- Splice with high visibility
- Seal riveted seams

See pages 70-71 for additional solutions

Aluminum Foil Tapes

2

3M™ Aluminum Foil Tape 425

253

- High thermal conductivity enhances efficiency of heating or cooling
- High heat reflectivity to protect temperature-sensitive materials against heat damage and hot spots
- Protect parts from flame damage

- Seal and protect from dust and moisture
- Solvent resistant to seal and protect sensitive surfaces
- Resist UV degradation for long-term performance

See pages 62-63 for additional solutions

Polyester Tapes

3

3M™ Polyester Film Tape 850

254

- Make butt and other splices that require high tensile strength and thin caliper
- Seal, protect, and reinforce in a wide variety of applications
- Color-code or decorate with long-term holding

- Transparency with clean removal and long-term clarity
- Broad temperature range

See pages 64-65 for additional solutions

Slick Surface Tapes

4

3M™ PTFE Film Tape 5490

255

- Low coefficient of friction for a slippery, self-lubricating surface
- Wrap web rollers with a slippery, low energy surface for smoother material movement
- Cover web former edges to minimize friction during folding

- Antistick for ready release and clean up of hot plastic; prevent plastic film from sticking to heat bar
- Protect surfaces against heat, chemicals, and friction

See page 68 for additional solutions

Damping Foils

5

3M™ Damping Foil 2552

256

- Reduce structure-borne noise in metal and composite panels and support structures
- Reduce vibrational fatigue to decrease wear and tear on parts and lower the risk of part loosening and displacement
- Converts vibrational energy to negligible heat that readily dissipates

- Pressure sensitive for easy application
- Eliminate stiffeners in some designs
- Effectively damp with as little as 10% surface coverage

See page 69 for additional solutions

Glass Cloth Tapes

6

3M™ Glass Cloth Tape 361

257

- Tensile strength 7x higher than typical polyester tapes
- Protect surfaces against abrasion and high temperatures
- Thermal spray masking

- Splice fabric and other textured surfaces when high tensile strength is necessary
- Protect against high temperature to pass FAA flame resistance regulations

See page 61 for additional solutions

3M™ Application Specific Tapes

Variety for many process and design solutions

With a choice of unique backing and adhesive combinations, this engineered line meets demanding applications for aerospace, graphic arts, electronics, metal finishing, automotive, and more.

Product/ Color	Tape Structure (Backing/ Adhesive)	Backing Thickness mils (mm)	Total Thickness mils (mm)	Adhesion to Steel oz./in. (N/100 mm)	Tensile Strength lbs./in. (N/100mm)	Elongation at Break %	Temperature Range °F (°C)	Comments
ASTM Test Method:		D-3652	D-3652	D-3330	D-3759	D-3759		
Graphic Arts Tapes								
235/Black	Paper/Rubber	5.0 (0.13)	7.0 (0.18)	23 (25)	22 (385)	9	Up to 200°F (Up to 93°C)	Photographic masking.
256/White/Red/ Green	Paper/Rubber	5.0 (0.13)	6.7 (0.17)	25 (27)	20 (350)	5	Up to 200°F (Up to 93°C)	Write-on label tape. Color-coding, holding.
616/Ruby Red	UPVC*/Rubber	1.6 (0.04)	2.4 (0.06)	36 (39)	29 (508)	60	Up to 120°F (Up to 49°C)	Lithographers tape.[1]
850/Transparent	Polyester/Acrylic	0.9 (0.02)	1.9 (0.05)	30 (33)	28 (491)	120	-60 to 300°F (-50 to 150°C)	Prepress stripping.
856/Transparent	Polyester/Acrylic	1.0 (0.03)	2.0 (0.05)	20 (22)	25 (438)	90	-60 to 300°F (-50 to 150°C)	Econ.edge and hole reinforcing.
914/Blue	Paper/Acrylic	3.0 (0.08)	4.0 (0.10)	N/A	30 (525)	2	Up to 400°F (Up to 204°C)	Repulpable business forms, splicing.
2185/White	Polypropylene/ Rubber	2.7 (0.07)	3.4 (0.08)	41 (45)	15 (263)	25	Up to 250°F (Up to 121°C)	Photo album edging.
3051/White	Paper/Acrylic	3.3 (0.08)	3.6 (0.09)	4 (4)	39 (680)	2	Up to 150°F (Up to 66°C)	Very low tack.
8411/Transparent	Polyester/Acrylic	1.0 (0.03)	1.5 (0.04)	30 (33)	26 (455)	120	-60 to 300°F (-50 to 150°C)	Edge and hole reinforcing.
8412/Transparent	Polyester/Acrylic	4.6 (0.12)	6.3 (0.16)	42 (46)	120 (2100)	130	-60 to 300°F (-50 to 150°C)	Heavy-duty edge and hole reinforcing.
High Temperature Tapes								
5413/Amber	Polyimide/Silicone	1.0 (0.03)	2.7 (0.07)	20 (22)	33 (578)	60	-100 to 500°F (-73 to 260°C)	High temperature film tape.[4]
5414/Transparent	PVA/Synthetic	1.3 (0.03)	2.5 (0.06)	7 (8)	6.2 (116)	98	Up to 500°F (-18 to 260°C)	Water-soluble tape.
5419/Amber	Polyimide/Silicone	1.0 (0.03)	2.7 (0.07)	20 (22)	33 (578)	60	-100 to 500°F (-73 to 260°C)	Low static wave solder.[4]
5433/Amber	Polyimide/Silicone	1.0 (0.03)	2.7 (0.07)	20 (22)	33 (578)	60	-100 to 500°F (-73 to 260°C)	Linered 5419 tape.[4]
5563/Amber	Polyimide/Acrylic	1.0 (0.03)	1.65 (0.04)	4 (4.4)	33 (578)	60	Up to 500°F (260°C)	Non-silicone, low static.
Riveting Tapes								
685/Transparent/ Green	Polyester/Rubber	1.0 (0.03)	1.7 (0.04)	30 (33)	19 (330)	28	-20 to 150°F (-29 to 66°C)	Transparent film, green adhesive.
695/Yellow/White	Polyethylene/Acrylic	2.0 (0.05)	3.0 (0.08)	15 (16)	8 (140)	120	-20 to 120°F (-29 to 49°C)	Yellow film, white adhesive.
Venting Tapes								
394/White	Nonwoven/Acrylic	4.1 (0.10)	4.0 (0.10)	12 (13)	6 (100)	18	N/A	Air-permeable backing.
3294/Pink	Nonwoven/Acrylic	4.0 (0.10)	5.0 (0.13)	16 (18)	15 (260)	13	N/A	Most permeable venting tape.
3394/Pink	Nonwoven/Acrylic	4.0 (0.10)	4.1 (0.10)	10 (11)	9 (160)	13	N/A	Air-permeable backing.
Nylon Tapes								
855/Cream	Nylon/Rubber	2.0 (0.05)	3.2 (0.08)	55 (60)	31 (540)	470	80 to 400°F (27 to 204°C)	Composite bonding tape.
8555/Cream	Nylon/Rubber	5.0 (0.13)	6.0 (0.15)	60 (66)	69 (1208)	540	80 to 400°F (27 to 204°C)	Thick version 855 tape.
Other Specialty Tapes								
253/Tan	Paper/Silicone (Polyester)	N/A	7.5 (0.19)	49 (5.4)	N/A	N/A	Up to 200°F (93°C)	Silicone butt splicing tape. Unique silicone treated backing.
346/Tan	Flat paper stock/ Rubber	15 (0.38)	16.7 (0.42)	22 (24)	28 (490)	4	Up to 250°F (121°C)	Heavy-duty abrasion, moisture, UV protection.
838/White	Tedlar® Film/Acrylic	2.1 (0.05)	3.4 (0.09)	47 (51)	24 (420)	170	-100 to 225°F (-73 to 107°C)	Weather resistant film tape.[2,3]
5401/Tan	Fiberglass Reinforced Silicone/Silicone	8 (0.2)	9.3 (0.24)	12 (13)	220 (3853)	7	Up to 300°F	Non-stick traction surface. (150°C)
5461/White	Silicone Rubber/ Rubber	7.8 (0.19)	9.1 (0.23)	30 (33)	85 (1500)	165	Up to 200°F (93°C)	High friction roller tape.
5557/White	Polyester/ Paper/Acrylic	N/A	10.2 (0.26)	82 (90)	N/A	N/A	7 days @ 55°C, 95% RH	Water contact indicator. UL-969.
5558/White	Polyester/ Paper/Acrylic	N/A	6.0 (0.15)	28 (31)	N/A	N/A	7 days @ 55°C, 95% RH	Ultrathin water contact indicator.
5559/White	Paper/Acrylic	N/A	5.0 (0.13)	28 (31)	N/A	N/A	7 days @ 55°C, 95% RH	Ultrathin water contact indicator.
8067/Tan	Film/Acrylic	5 (0.13)	9.9 (0.25)	N/A	N/A	N/A	-40 to 176°F (-40 to 80°C)	Window and door sealing.
8087/Blue	Polypropylene/ Acrylic	N/A	2.9 (0.07)	24 (26)	31 (543)	150	-40 to 220°F (-40 to 105°C)	Construction seaming.
9343/Black	Nonwoven/Acrylic	6.0 (0.15)	17 (0.43)	27 (30)	5 (88)	400	-30 to 250°F (-34 to 121°C)	Conformable for irregular parts.
9968/White	Paper/Acrylic	3.2 (0.08)	4.0 (0.10)	N/A	25 (438)	N/A	Up to 400°F (204°C)	Repulpable casting paper splicing.

[1] MIL-T-40620A [2] MIL-T-22085 Amend 3,Type IV [3] F.A.R.25.853 (a) [4] Meets U.L. 510 for flame retardancy * UPVC is an unplasticized polyvinylchloride backing.

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

3M™ Glass Cloth Tapes

High tensile strength with choice of other properties

With a choice of high tensile strength glass cloth and silicone, acrylic, or rubber adhesives, this line meets demanding applications for Aerospace, Automotive, Commercial Vehicle, Construction, Marine, and more.

Depending on the specific tape, you have a choice of characteristics:

- Pass FAA flame resistance regulations
- Protect surfaces against abrasion
- Temperature resistance up to more than 450°F (232°C) for one hour – even higher for intermittent exposures

258 259

For seaming and sealing panels in aircraft cargo bays, 3M™ Glass Cloth Tape 398FR exceeds flame retardant standards F.A.R. 25.853 (a) and F.A.R. 25.855 (d). Pressure sensitive acrylic adhesive bonds on contact to many surfaces. High adhesion is secure for extended periods. Rugged cloth surface resists wear from heavy bags.


260

3M™ Traction Tape 5401 enhances friction on web rollers to help maintain constant traction and tension for the web material from start-up through wind-up.


261

With high tensile strength and rubber adhesive, 3M™ Glass Cloth Tape 365 reliably splices fabrics and other textured surfaces.


262

For thermal spray and plasma spray masking, 3M™ Glass Cloth Tape 361 with silicone adhesive performs reliably at up to 450°F (232°C). Passes FAA flame resistance regulations.

Product Information:

Product/ Color	Tape Structure (Backing/Adhesive)	Backing Thickness mils (mm)	Total Thickness mils (mm)	Adhesion to Steel oz./in. (N/100 mm)	Tensile Strength lbs./in. (N/100 mm)	Elongation at Break %	Temperature Range °F (°C)	Comments
ASTM Test Method:		D-3652	D-3652	D-3330	D-3759	D-3759		
Glass Cloth Tapes								
361/White	Glass Cloth/Silicone	5.4 (0.14)	7.5 (0.19)	38 (42)	182 (3190)	10	-65 to 450°F (-54 to 232°C)	General purpose glass cloth tape.[1]
362/Tan	Glass Cloth/Silicone	3.5 (0.09)	9.3 (0.24)	40 (28)	200 (2260)	7	-65 to 600°F (-54 to 315°C)	Protects surface from flame/ plasma spraying.
3615/3615L/White	Glass Cloth/Silicone (Film Liner)	3.5 (0.09)	6.5 (0.17)	35 (38)	190 (3327)	7	-65 to 450°F (-54 to 232°C)	High temperature resistance.
365/White	Glass Cloth/Rubber	4.8 (0.12)	8.3 (0.20)	52 (57)	139 (2430)	7	40 to 250°F (4 to 121°C)	Splicing textured surfaces. Thermosetting adhesive.
3650/White	Glass Cloth/Rubber (Film Liner)	4.8 (0.12)	8.3 (0.20)	52 (57)	139 (2430)	7	40 to 250°F (4 to 121°C)	Linered 365 tape. Thermosetting adhesive.
398FR/White	Glass Cloth/Acrylic (Film Liner)	5.0 (0.13)	7.0 (0.18)	38 (52)	130 (2452)	7	-20 to 250°F (-29 to 121°C)	Meets F.A.A. burn requirements.[1,2] Skip-slit liner for case at application.
398FRP/White	Glass Cloth/Acrylic (Film Liner)	5.0 (0.13)	7.0 (0.18)	38 (52)	130 (2452)	7	-20 to 250°F (-29 to 121°C)	Printed backing version of 398FR tape.[1,2]

[1] F.A.R. 25.853(a) [2] F.A.R. 25.855(d) Note: This technical information and data should be considered representative or typical only and should not be used for specification purposes.

3M™ Metal Foil Tapes

Choice of high performance foil tapes

With a choice of conformable backings and adhesives, this line of tapes meets demanding applications in Aerospace, Appliance, Transportation, Construction, Automotive, and MRO (Maintenance and Repair) segments.

3M™Aluminum Foil Tapes

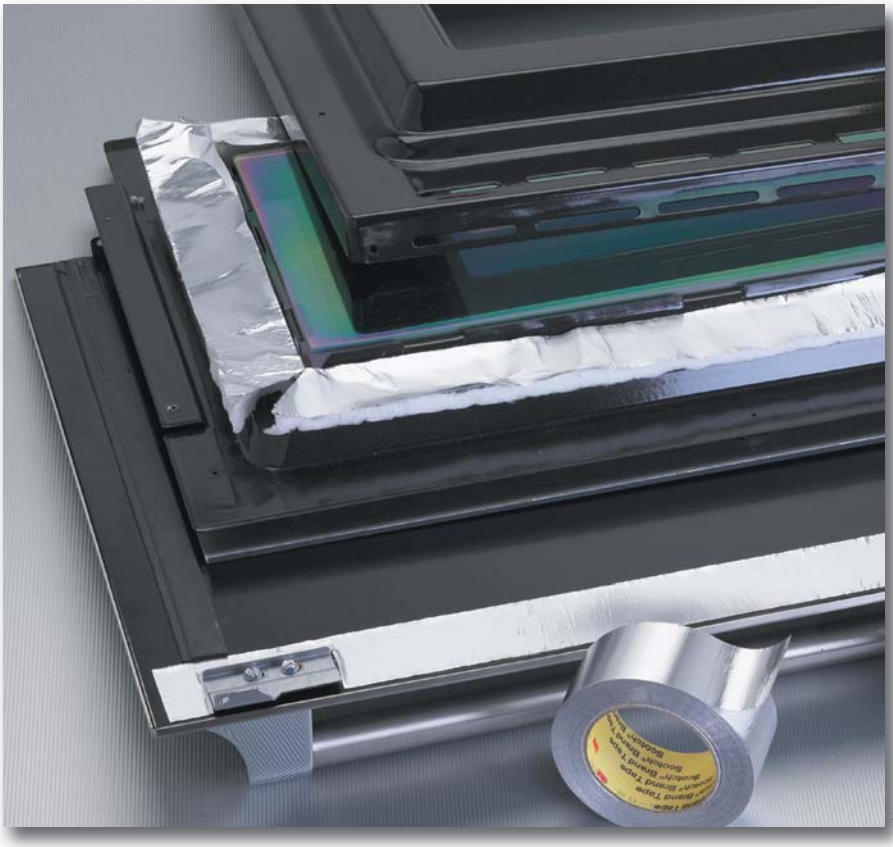
- Resist flame, moisture, weather, UV degradation, and most chemicals
- Thermally conductive for heating/cooling efficiency
- Heat and light reflective

3M™Aluminum Foil Reinforced Tapes

- Flexible flame-resistant wrap for wires and hoses
- Long wearing, tear and puncture resistant
- Flame and heat resistant

3M™Lead Foil Tapes

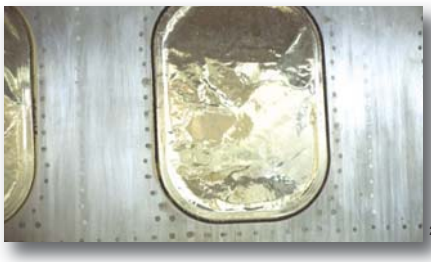
- Electrically conductive
- Acid resistant for plating masking
- Radiopaque for X-ray markers


263

3M™ Aluminum Foil Tape bonds on contact as heat shielding inside an oven door. Helps keep the exterior cool to the touch behind the handle and around the window perimeter.


266

With aggressive adhesive and dead soft aluminum, Scotch® Foil Tape 3311 seals and secures seams and joints for long-term durability. UL 723 Listed for duct sealing and general repairs.


264

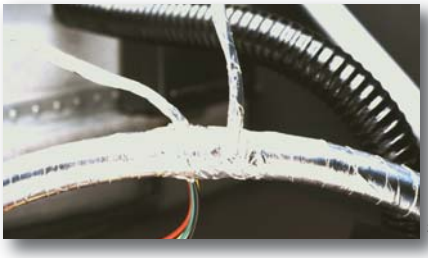
With conformability and chemical resistance, 3M™ Aluminum Foil Tapes protect aircraft windows during harsh chemical paint stripping.


265

With high heat reflectivity and thermal conductivity, 3M™ Aluminum Foil Tapes protect heat-sensitive components near lights in a garage door opener housing.


267

3M™FSK Facing Tape 3320 is engineered specifically as a vapor retardant tape to seal mineral wool foil-faced insulation, bare sheet metal ducts, and blanket style fiberglass duct insulation.


268

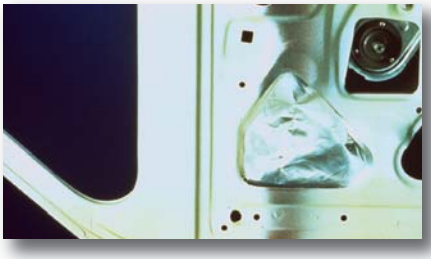
Tear-resistant 3M™ Reinforced Aluminum Foil Tape 363 bundles wire harnesses and helps protect wires, cables, and other flexible parts from heat.

269

Conformable 3M™ Aluminum Foil Tape securely holds copper cooling tubes to refrigerator panels. Thermal conductivity helps maximize cooling efficiency.

270

To seal fiberglass duct board and flexible duct systems, Scotch® Foil Tape 3326 meets the performance requirements for UL 181A-P and UL 181B-FX.



271

Applied over holes and cavities in the interior of a car or truck door panel, 3M™ Aluminum Foil Tape seals out moisture and dust.

Product Information:

Product	Tape Structure (Backing/Adhesive)	Backing Thickness mils (mm)	Total Thickness mils (mm)	Adhesion to Steel oz./in. (N/100 mm)	Tensile Strength lbs./in. (N/100 mm)	Elongation at Break %	Temperature Range °F (°C)	Comments
ASTM Test	Method:	D-3652	D-3652	D-3330	D-3759	D-3759		
Premium Performance Aluminum Foil Tapes								
425	Aluminum/Acrylic	2.8 (0.07)	4.6 (0.12)	47 (51)	30 (525)	8	-65 to 300°F (-54 to 149°C)	Most versatile aluminum tape.[1,2,3,4]
427	Aluminum/Acrylic	2.8 (0.07)	4.6 (0.12)	50 (55)	30 (525)	8	-65 to 300°F (-54 to 149°C)	Lineredversion 425 tape.[2,3,4]
431	Aluminum/Acrylic	1.9 (0.05)	3.1 (0.08)	41 (45)	19 (338)	5	-65 to 300°F (-54 to 149°C)	Conformable aluminum tape.[3]
433	Aluminum/Silicone	2.0 (0.05)	3.6 (0.09)	40 (43.8)	20 (350)	3.5	-65 to 600°F (-54 to 316°C)	MIL-T-47014.[3]
433L	Aluminum/Silicone	2.0 (0.05)	3.5 (0.09)	38 (42)	20 (350)	3.5	-65 to 600°F (-54 to 316°C)	Linered 433 tape.[3]
438	Aluminum/Acrylic	5.0 (0.13)	7.2 (0.18)	43 (47)	59 (1033)	10	-65 to 300°F (-54 to 149°C)	Thickest aluminum tape.[3]
439	Aluminum/Acrylic	1.9 (0.05)	3.1 (0.08)	41 (45)	18 (315)	3	-65 to 300°F (-54 to 149°C)	Linered version 431 tape.[3]
HVAC & Refrigeration Aluminum Foil Tapes								
3311	Aluminum/Rubber	2.0 (0.05)	3.6 (0.09)	90 (98)	17 (298)	3	-10 to 180°F (-23 to 82°C)	UL 723 listed, linered.
3326	Aluminum/Acrylic	2.3 (0.06)	4.4 (0.11)	70 (77)	25 (438)	4	-20 to 250°F (-29 to 121°C)	UL 181A-P & 181B-FX listed, printed backing, linered.
General Purpose Aluminum Foil Tapes								
1449	Aluminum/Acrylic	1.4 (0.04)	2.6 (0.07)	37 (40)	19 (333)	11	-25 to 250°F (-32 to 121°C)	Thinnest aluminum tape for added conformability.
1450	Aluminum/Rubber	1.9 (0.05)	3.1 (0.08)	114 (125)	19 (333)	6	-40 to 200°F (-40 to 93°C)	High initial tack on low energy surfaces.
FSK (Foil Scrim Kraft) Tape								
3320	Foil/Scrim/Acrylic	6.0 (0.16)	6.1 (0.16)	81 (89)	40 (712)	2	-20 to175°F (-29 to 79°C)	Vapor-retardant for sealing wool insulation, duct liner, sheet metal ducts and more.
Aluminum Foil Reinforced Tapes								
363	Aluminum/Glass Cloth/Silicone	3.4 (0.09)	7.3 (0.19)	67 (73)	135 (2364)	7	-65 to 600°F (-54 to 316°C)	Highest temperature metal tape.[3]
1430	Aluminum/Nonwoven/Acrylic	5.0 (0.13)	5.5 (0.14)	22 (24)	19 (333)	12	-65 to 300°F (-54 to 149°C)	Flexible wrapping tape.
Lead Foil Tapes								
420	Lead/Rubber	4.7 (0.12)	6.8 (0.17)	45 (49)	20 (350)	12	-60 to 225°F (-54 to 106°C)	Linered plating tape.
421	Lead/Rubber	4.0 (0.10)	6.3 (0.16)	31 (34)	15 (263)	14	-60 to 225°F (-54 to 106°C)	Unlinered plating tape.

[1] Can be qualified to L-T-80B, SAE-AMS-T-23397 [2] Meets U.L.723,Class L File R 7311 [3] F.A.R.25.853 (a) [4] Meets U.L.746C File E122798

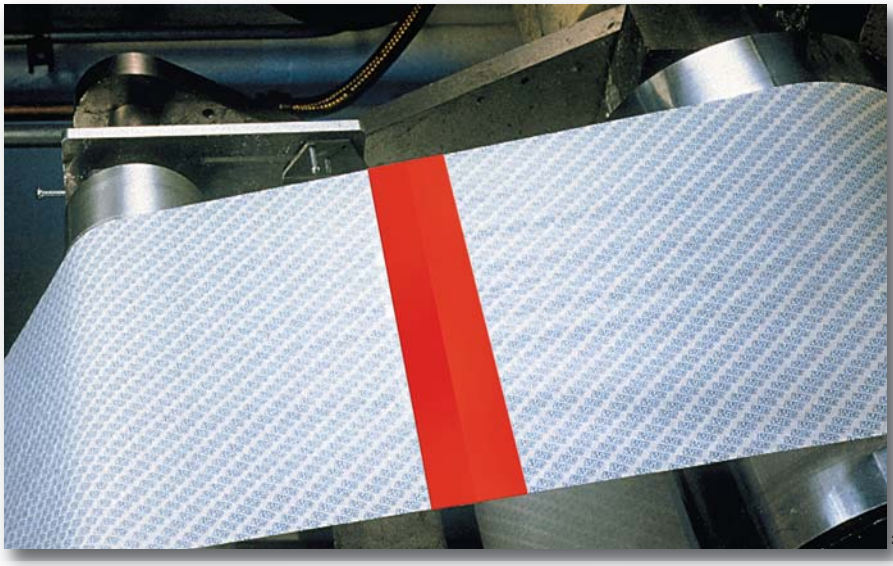
Note: This technical information and data should be considered representative or typical only and should not be used for specification purposes.

3M™ Polyester Tapes

Thin caliper with long-term high dimensional strength

With a choice of thin backing calipers and adhesives, this line of tapes meets demanding applications for Graphic Arts, Photography, Metal Finishing, and Electronics. Applications range from splicing silicone-treated paper to low profile decorative trim.

- Backing calipers from as thin as 0.9 mil up to 5 mils, all with very high dimensional strength
- Tensile strengths ranging from 20 lbs./in. (0.9 mil) to 150 lbs./in. (5 mils) – some of the strongest backings available
- Pressure sensitive acrylic, rubber, silicone, and S/R blend adhesives to meet specific requirements. For example, acrylic with transparent backing for clarity and long-term holding; silicone for high temperatures and clean removal; rubber for plating chemical resistance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275

For marking splice location, 3M™ Polyester Tape 850 is available in red, black, white, silver, and gold. Transparent is also available to blend with the web stock. Pressure sensitive acrylic adhesive grabs on contact and holds butt splices securely. High tensile strength backing resists web handling stresses.

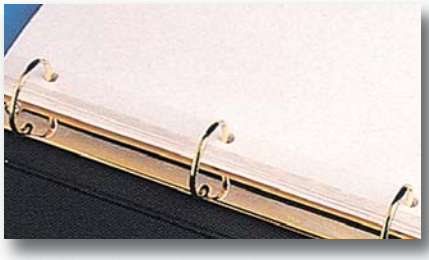

278

For butt splices on many low surface energy materials such as polyethylene. 3M™ Super Bond Film Tape 396 provides the thin caliper, and tensile strength of polyester and high immediate adhesion and holding strength of rubber adhesive.


276


277

For powder coat paint masking, 3M™ Polyester Tape series 8900 provides popular choices with clean removing high temperature silicone adhesives and different backing thicknesses of tough non-slivering polyester.


279

With thin caliper and tear resistance, 3M™ Polyester Tape provides tough low-profile reinforcement for punch holes in card stock. Acrylic adhesive resists yellowing in long-term use.


280

With thin caliper, high tensile strength polyester backing and the excellent shear strength of silicone adhesive, 3M™ Polyester Tape 8402 works well for butt splicing silicone-treated papers.

Product Information:

Product/ Color	Tape Structure (Backing/Adhesive)	Backing Thickness mils (mm)	Total Thickness mils (mm)	Adhesion to Steel oz./in. (N/100 mm)	Tensile Strength lbs./in. (N/100 mm)	Elongation at Break %	Temperature Range °F (°C)	Comments
ASTM Test Method:		D-3652	D-3652	D-3330	D-3759	D-3759		
General Industrial Tapes								
396/Transparent	Polyester/Rubber	1.4 (0.04)	4.1 (0.10)	170 (190)	43 (753)	140	40 to 200°F (4 to 93°C)	Adhesion to low energy surfaces.
850/Transparent	Polyester/Acrylic	0.9 (0.02)	1.9 (0.05)	30 (33)	25 (440)	120	-60 to 300°F (-50 to 150°C)	Splicing, holding, sealing, highly transparent.[3]
850/White/Red/Blk	Polyester/Acrylic	0.9 (0.02)	1.9 (0.05)	30 (33)	28 (491)	120	-60 to 300°F (-50 to 150°C)	Splicing, holding, decorating, color-coding, sealing.
853/Transparent	Polyester/Acrylic	0.9 (0.02)	1.9 (0.05)	48 (52)	24 (421)	102	-60 to 300°F (-50 to 150°C)	Solvent resistant adhesive.[1, 2, 3]
Protective Tapes								
335/Pink	Polyester Film/Rubber	0.9 (0.02)	1.5 (0.04)	0.4 (.5)	26 (455)	115	-60 to 150°F (-50 to 66°C)	Low tack protective tape.
336/Transparent	Polyester Film/Rubber	0.9 (0.02)	1.5 (0.04)	0.4 (.5)	26 (455)	115	-60 to 150°F (-50 to 66°C)	Low tack protective tape.
Release Surface and Liner Splicing Tapes								
8401/Translucent Cream	Polyester/Silicone with Rubber	1.0 (0.03)	1.9 (0.05)	22 (24)	34 (595)	100	-60 to 300°F (-50 to 150°C)	Splicing many release coated papers.
8402/Green	Polyester/Silicone	0.9 (0.02)	1.8 (0.05)	24 (26)	33 (578)	120	-60 to 425°F (-50 to 218°C)	Adheres well to silicone.
8403/Green	Polyester/Silicone	1.5 (0.04)	2.3 (0.06)	27 (30)	44 (772)	150	-60 to 425°F (-50 to 218°C)	Adheres well to silicone.
8901/Blue	Polyester/Silicone	0.9 (0.02)	2.6 (0.06)	32 (35)	28 (490)	115	-60 to 400°F (-50 to 204°C)	High temperature coating.
8902/Blue	Polyester/Silicone	2.0 (0.05)	3.4 (0.09)	40 (44)	53 (928)	130	-60 to 400°F (-50 to 204°C)	High temperature coating.
8905/Blue	Polyester/Silicone	5.0 (0.13)	6.5 (0.17)	43 (47)	150 (2627)	130	-60 to 400°F (-50 to 204°C)	High temperature coating.
8911/Transparent	Polyester/Silicone	1.0 (0.03)	2.7 (0.07)	30 (33)	30 (525)	100	-60 to 400°F (-50 to 204°C)	High temperature label protection.
8951/Blue	Polyester/Silicone	1.0 (0.03)	2.7 (0.07)	30 (33)	30 (525)	100	-60 to 425°F (-50 to 218°C)	High temperature applications.
8952/8952L/Blue	Polyester/Silicone	2.0 (0.05)	3.5 (0.09)	40 (44)	55 (963)	110	-60 to 425°F (-50 to 218°C)	High temperature applications.
8992/8992L/Green	Polyester/Silicone	2.0 (0.05)	3.3 (0.08)	33 (36)	48 (840)	83	-60 to 400°F (-50 to 204°C)	Powder coat masking, economical high temperature applications.
Photo Film Splicing Tapes								
8421/White	Polyester/Rubber	1.4 (0.04)	2.5 (0.06)	50 (55)	43 (753)	140	-60 to 300°F (-50 to 150°C)	Photo film splicing.
8422/Black	Polyester/Rubber	1.4 (0.04)	2.5 (0.06)	50 (55)	43 (753)	140	-60 to 300°F (-50 to 150°C)	Photo film splicing.
8429/Yellow	Polyester/Rubber	2.0 (0.05)	3.2 (0.08)	69 (76)	54 (945)	130	-60 to 300°F (-50 to 150°C)	Photo film splicing.
Reflective Tapes								
630/Silver	Metallic Polyester/ Rubber	1.0 (0.03)	3.7 (0.09)	145 (160)	29 (508)	120	40 to 200°F (4 to 93°C)	High tack splicing.
850/Silver/Gold	Metallic Polyester/ Acrylic	0.9 (0.02)	1.9 (0.05)	42 (46)	28 (491)	120	-60 to 300°F (50 to 150°C)	Splicing, holding, sealing, decorating, color-coding.
8437/Silver	Metallic Polyester/ Acrylic	0.9 (0.02)	2.0 (0.05)	40 (44)	20 (350)	70	40 to 200°F (4 to 93°C)	Low emissivity.

[1]L-T-100B [2]A-A-59298 [3]F.A.R. 25.853 (a) Note: This technical information and data should be considered representative or typical only and should not be used for specification purposes.

3M™ Repulpable Splicing Tapes

Fully repulpable for paper mills, converters, newspapers, and web printers

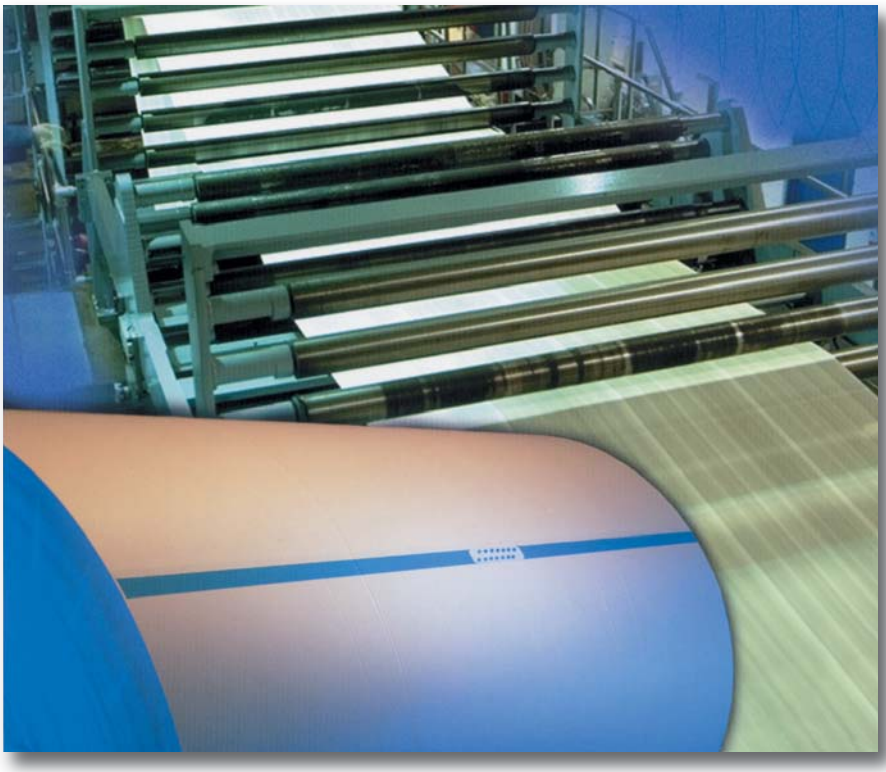
From core starting to roll closing/tabbing and all the splices in-between, this totally repulpable line offers choices for the dependability you need to keep production at full speed. Backings and adhesives are engineered for optimum strength on every type of splice: flying, overlap, butt, and general purpose.

Temporary Tapes

- Good shear strength, high tack, and reliable heat resistance

Permanent Tapes

- High shear strength to stay with paper through sheeting, printing, slitting, and perforating



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3M™ Repulpable Splicing System R9993 eliminates the time and work of "V" and "W" patterns with a straight across flying splice. Advanced coating provides a smooth and consistent opening force. Strong, ultra-thin profile reduces bounce and potential blanket damage at running speeds.

284

High tack 3M™ Temporary Single Coated Repulpable Tapes are available in white, blue, and kraft for dependable core starting, roll closing, and butt splicing.

282

For easy, precise application, 3M™ Repulpable Butt Splicing Tape 9114 is initially repositionable then bonds with paper-delaminating strength.

283

For finished mill overlap splicing, 3M™ Repulpable Permanent Tape provides high shear strength without adhesive oozing or bleed through.

285

One simple splice with 3M™ Repulpable Tape R9993 replaces complex patterns.

286

3M™ Repulpable Double Coated Paster Tape 913 has been an industry standard for flying splices by providing high initial wet grab and excellent shear strength.

Product Information:

Type	Product	Color	Comments	Tape Thickness mils(mm)	Tape Structure Backing/Adhesive	Liner		Heat Resistance (F/C)	FDA Approved
						Type	Thickness mils/(mm)		
Permanent Double Coated	405	Lt. Green	Excellent for raw and starch-treated papers.	3.0 (0.08)	Tissue/Repulpable	UPVC	1.7 (0.04)	400 (200)	
	900	Blue	Recommended for LWC papers.	2.5 (0.06)	Tissue/Repulpable	Paper	3.2 (0.08)	400 (200)	•
	900B	Blue	Recommended for supercalendered papers.	2.5 (0.06)	Tissue/Repulpable	Paper	3.2 (0.08)	400 (200)	•
Permanent Single Coated	901	Lt. Green	Excellent for raw and starch-treated papers.	4.0 (0.10)	Paper/Repulpable	UPVC	1.7 (0.04)	400 (200)	
	910	Blue	Recommended for coated and uncoated papers and paperboard.	4.0 (0.10)	Paper/Repulpable	—	—	400 (200)	•
	9103	Blue	Printable, coatable backing.	4.5 (0.11)	Paper/Repulpable	Paper	2.9 (0.07)	400 (200)	•
	9114	Blue	The easiest way to make a butt splice. Printable.	4.5 (0.11)	Paper/Repulpable	Paper	2.9 (0.07)	400 (200)	•
	9960	Blue	Thinnest butt splicing tape for lightweight uncoated and coated and supercalendered papers.	2.2 (0.06)	Paper/Repulpable	Paper	2.9 (0.07)	350 (180)	•
	9969	Blue/White	Very thin butt splicing/cover tape for uncoated, newsprint and most coated papers.	2.2 (0.06)	Paper/Repulpable	Paper	2.9 (0.07)	350 (180)	•
Temporary Double Coated	905	Clear	Thinnest, fiber reinforced adhesive transfer tape.	2.0 (0.05)	None/Repulpable	Paper	3.3 (0.08)	250 (120)	•
	906	Blue/White	Flying splice at the Off-Machine Coater (OMC).	3.0 (0.08)	Tissue/Repulpable	Paper	3.2 (0.08)	400 (200)	•
	913	Blue	Paster tape for splices at newspaper printers.	3.5 (0.09)	Tissue/Repulpable	Paper	3.2 (0.08)	400 (200)	
	9038	Blue/White	General purpose plus flying splice for the commercial printers and corrugators.	3.5 (0.09)	Tissue/Repulpable	Paper	3.2 (0.08)	350 (180)	•
	9069	Blue	Excellent for newsprint or directory stock.	3.5 (0.09)	Tissue/Repulpable	Paper	3.2 (0.08)	400 (200)	
	R3227	Blue/White	Core starting, roll closing and general purpose temporary splicing.	3.5 (0.09)	Tissue/Repulpable	Paper	3.2 (0.08)	400 (200)	•
	R3287	White	Heavy tissue, very high tack for core starting.	5.5 (0.14)	Tissue/Repulpable	Paper	3.2 (0.08)	400 (200)	•
Temporary Single Coated	R3127	Blue/White Kraft/Red	General purpose, excellent holding power.	4.5 (0.11)	Paper/Repulpable	—	—	400 (200)	•
	R3187	Blue/White/ Kraft/Black	General purpose, strong repulpable backing.	7.0 (0.18)	Paper/Repulpable	—	—	400 (200)	•
Splittable Flying Splice(SFS)	R9990	Blue	Splittable flying splice (SFS) system with metalized layer for autosensing and splice detection applications.	3.5 (0.09)*	Aluminized Paper/Repulpable	Paper	2.9 (0.07)	400 (200)	
	R9993	Blue	All in one tabbing and splicing tape for newspaper, rotogravure and non-heatset printing applications.	2.5 (0.06)*	Paper/Repulpable	Paper	2.9 (0.07)	400 (200)	
	R9996	Blue	Thinnest SFS tape for splicing applications in papermill and paper converting coating operations.	2.5 (0.06)*	Paper/Repulpable	Paper	2.9 (0.07)	400 (200)	
	R9999	Blue	Heavy duty SFS tape for flying splices on heavy papers and high tension web processing applications.	4.5 (0.12)*	Paper/Repulpable	Paper	2.9 (0.07)	400 (200)	

* Reported tape thickness is the caliper of the splice as it passes through coating and printing operations.
Note: This technical information and data should be considered representative or typical only and should not be used for specification purposes.

3M™ Slick Surface Tapes

Low coefficients of friction with choice of other characteristics

3M™ Slick Surface Tapes meet many application requirements for Printing, Aerospace, Automotive, and MRO (Maintenance and Repair).

3M™ PTFE Tapes

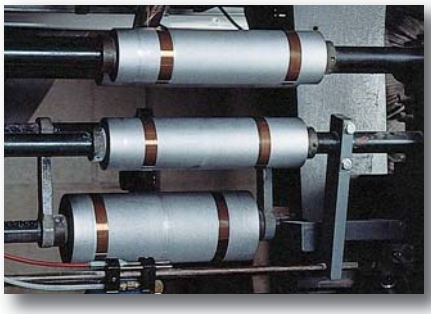
- Self-lubricating with low coefficient of friction to help improve web processing
- Resists up to 400°F (204°C) for long performance on heat sealing machines
- Anti-stick for easy cleanup of hot plastic
- Chemical-resistant barrier
- Silicone-free adhesive available

3M™ UHMW-PE Tapes

- Abrasion resistant to protect chutes, guide rails, and containers from wear
- Low coefficient of friction for "slip plane" effect between surfaces to reduce noise
- Anti-stick for ready release of many inks and adhesives

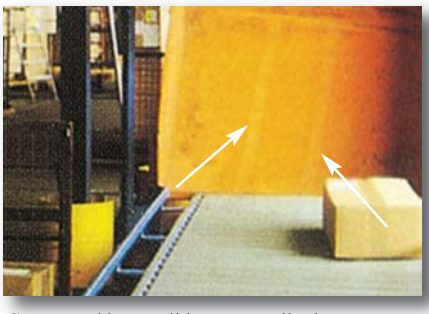
287

For automotive noise reduction, 3M™ UHMW-PE Tape 5425 provides a "slip plane" effect between incompatible surfaces to help reduce squeaks and rattles.



288

Conformable, self-lubricating 3M™ PTFE Tape 5480 helps the movement of web materials in many types of roller wrapping applications.



289

Corrugated boxes slide more easily down a chute lined with abrasion-resistant 3M™ UHMW-PE Tapes.

290

In shrink wrapping operation, 3M™ PTFE Glass Cloth Tape 5451 helps protect the bar underneath where the hot wire seals the plastic film.

Product Information:

Product/ Color	Tape Structure (Backing/ Adhesive)	Backing Thickness mils(mm)	Total Thickness mils(mm)	Adhesion to Steel oz./in. (N/100 mm)	Tensile Strength lbs./in.width (N/100 mm)	Elongation at Break %	Temperature Range °F (°C)	Comments
ASTM Test Method:		D-3652	D-3652	D-3330	D-3759	D-3759		
PTFE Tapes (Polytetrafluoroethylene)								
Glass Cloth								
5151/Lt.Brown	PTFE GC/Silicone	3.0 (0.08)	4.5 (0.11)	30 (33)	100 (1760)	5	-100 to 400°F (-73 to 204°C)	General purpose.
5153/Lt.Brown	PTFE GC/Silicone	5.3 (0.13)	6.8 (0.17)	35 (38)	150 (2600)	5	-100 to 400°F (-73 to 204°C)	General purpose.
5451/Brown	PTFE GC/Silicone	3.2 (0.08)	5.6 (0.14)	28 (30.6)	100 (1760)	5	-100 to 400°F (-73 to 204°C)	Heat seal tape.
5453/Brown	PTFE GC/Silicone	6.0 (0.15)	8.2 (0.21)	55 (56)	175 (3065)	5	-100 to 400°F (-73 to 204°C)	Heat seal tape.
Skived Film								
5180/Gray	PTFE/Silicone	2.0 (0.05)	3.5 (0.09)	25 (28)	30 (525)	100	-65 to 400°F (-54 to 204°C)	General purpose.
5181/Gray	PTFE/Silicone	5.0 (0.13)	6.5 (0.17)	35 (39)	75 (1300)	100	-65 to 400°F (-54 to 204°C)	General purpose.
5480/Gray	PTFE/Silicone	2.0 (0.05)	3.7 (0.09)	20 (22)	27 (473)	140	-65 to 400°F (-54 to 204°C)	Roller wrapping tape.
5481/Gray	PTFE/Silicone	5.0 (0.13)	6.8 (0.17)	32 (35)	49 (858)	335	-65 to 400°F (-54 to 204°C)	Heavy-duty roller wrapping tape.
Extruded Film								
5490/Gray	PTFE/Silicone	2.0 (0.05)	3.7 (0.09)	27 (29)	22 (385)	150	-65 to 400°F (-54 to 204°C)	Lay-flat backing.
5491/Gray	PTFE/Silicone	5.0 (0.13)	6.7 (0.17)	35 (38)	40 (700)	200	-65 to 400°F (-54 to 204°C)	Lay-flat backing.
5498/Brown	PTFE/Rubber	2.0 (0.05)	4.0 (0.10)	48 (53)	19 (332)	105	40 to 300°F (4 to 149°C)	Silicone-free adhesive.
UHMW-PE Tapes (Ultra High Molecular Weight — Polyethylene)								
Film								
5421/Transparent	UHMW-PE/Rubber	5.0 (0.13)	6.7 (0.17)	26 (28)	30 (526)	275	-30 to 225°F (-34 to 107°C)	General purpose tape.
5423/Translucent	UHMW-PE/Rubber	10.0 (0.25)	11.7 (0.30)	26 (28)	55 (963)	300	-30 to 225°F (-34 to 107°C)	Excellent abrasion resistance.
5425/Transparent	UHMW-PE/Acrylic	3.0 (0.08)	4.5 (0.11)	30 (33)	45 (788)	100	-30 to 225°F (-34 to 107°C)	Solvent resistant adhesive.
5430/Transparent	UHMW-PE/Acrylic	5.0 (0.13)	7.0 (0.18)	75 (82)	40 (696)	175	-30 to 225°F (-34 to 107°C)	High tack adhesive.
9324/Black	UHMW-PE/Acrylic	5.0 (0.13)	6.5 (0.17)	75 (82)	40 (696)	175	-30 to 225°F (-34 to 107°C)	Black version 5430 tape.
9325/Transparent	UHMW-PE/Acrylic	3.0 (0.08)	5.0 (0.13)	50 (55)	40 (696)	175	-30 to 225°F (-34 to 107°C)	Thin version 5430 tape.

Note: All UHMW-PE tapes come on a paper liner. Note:This technical information and data should be considered representative or typical only and should not be used for specification purposes.

3M™ Sound Damping Foils

Reduce noise and vibration in many applications

With pressure sensitive viscoelastic acrylic polymer on dead soft aluminum foil, 3M™ Sound Damping Foils quiet noise and reduce vibration in many areas for Aerospace, Automotive, Appliances, Construction, and MRO (Maintenance and Repair).

- Reduce structure-borne noise in metal and composite panels and support structures
- Optimized acrylic converts vibrational energy to negligible heat that readily dissipates
- Reduce vibrational fatigue to decrease wear and tear on parts and lower the risk of part loosening and displacement
- Effective damping with as little as 10% surface coverage
- Pressure sensitive for easy self-fixturing application
- Long aging performance
- Good performance over a wide temperature range
- Linered construction provides ability to die-cut product


291

Applied with a 3M™ PA-1 Wiper to the inside of a car door, 3M™ Damping Foil 2552 effectively damps noise and vibration with as little as 10% surface coverage. Optimized acrylic on a dead soft aluminum constraining layer converts vibrational energy to negligible heat that readily dissipates.


292

3M™ Damping Foil 435 between the ribs and stringers of an aircraft fuselage helps reduce vibrational fatigue and noise inside the passenger cabin.


293

3M™ Damping Foil 2552 on the inside of a washing machine reduces structure-borne noise and reduces vibrational fatigue to decrease the risk of part loosening and displacement.

Product Information:

Product/ Color	Tape Structure (Backing/Adhesive)	Backing Thickness mils (mm)	Total Thickness mils (mm)	Adhesion to Steel oz./in. (N/100 mm)	Tensile Strength lbs./in. (N/100 mm)	Elongation at Break %	Temperature Range °F (°C)	Comments
ASTM Test	Method:	D-3652	D-3652	D-3330	D-3759	D-3759		
Damping Foils								
434/Silver	Aluminum/VEP[1]	5.5 (0.14)	7.5 (0.19)	65 (72)	53 (928)	12	-76 to 68°F (-60 to 20°C)[2]	Low temperature vibration damping.[3]
435/Silver	Aluminum/VEP[1]	8.0 (0.20)	13.5 (0.34)	65 (72)	84 (1470)	12	-76 to 68°F (-60 to 20°C)[2]	Low temperature vibration damping.[3]
436/Silver	Aluminum/VEP[1]	12.0 (0.31)	17.5 (0.45)	65 (72)	126 (2205)	12	-76 to 68°F (-60 to 20°C)[2]	Low temperature vibration damping.[3]
2552/Silver	Aluminum/VEP[1]	10.0 (0.25)	15 (0.38)	65 (72)	80 (1400)	15	-25 to 175°F (-32 to 80°C)[2]	General purpose vibration damping.[3]
4014/Silver	Aluminum-Urethane/Acrylic	3.0 (0.076)	250 (6.35)	N/A	N/A	N/A	-94 to 86°F (-70 to 30°C)[2]	Foil/foam sheet laminate.[3]

[1] Viscoelastic polymer [2] Optimum damping temperature [3] The specimen passed the requirements of FAR 25.853 (a)(1)(ii) per AMDT.25-83 tested in composite on aluminum backer.
Note: This technical information and data should be considered representative or typical only and should not be used for specification purposes.

3M™ Vinyl and Polyethylene Tapes

Mark, identify, color-code, seal seams, and more

These rugged tapes adhere aggressively and remove cleanly from most surfaces for a wide variety of applications in Automotive, MRO (Maintenance and Repair), Construction, Marine, Commercial Vehicle, and other industries.

Applications include marking hazards and aisles, color-code piping, fine line paint masking, decorative trim, high visibility splicing, and more.

- "Color throughout" construction resists scrapes, wear, weathering, and chemicals
- Wide variety of colors plus transparent
- Flexible backing with aggressive adhesive bonds, conforms, and seals even with irregular surfaces
- Removes cleanly without leaving adhesive behind to clean up
- Stretches to mold to contours


294

3M™ Vinyl Tapes clearly mark lanes, corridors and hazardous or no-go areas in factories, warehouses, and hospitals. Durable vinyl backing resists abrasion, scuffing, moisture, weathering, acids, and alkaline chemicals for long service life.


297

Red 3M™ Vinyl Tape immediately identifies fire protection equipment and apparatus, including fire extinguishers, alarm boxes, and blanket boxes.


295

For color-coding pipes with 3M™ Vinyl Tapes, select from either nine vivid colors or transparent to let underlying color show through. Backing is colored throughout to help maintain ready visibility.


296

For fine line paint masking, 3M™ Vinyl Tape 471 provides sharp paint lines and the clean removal of a firm rubber adhesive.


298

To highlight low hanging objects, protruding equipment, or steps, 3M™ Vinyl Tape 5702 combines yellow and black for a striped combination that calls for attention.


299

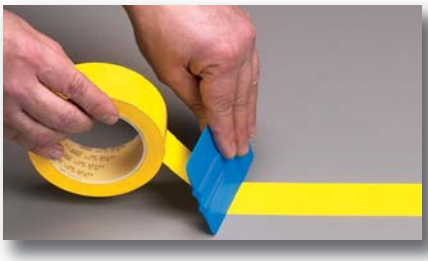
Orange 3M™ Vinyl Tape identifies dangerous machine parts that may cause injury when enclosure doors are open or guards removed.

300

3M™ Polyethylene Tape 483 (Black) provides conformability, UV resistance, and clean removal for sealing end caps on metal pipes stored outdoors at a nuclear power facility.

301

3M™ Vinyl Tape 471 conforms to seal riveted seams. The flexible backing shapes itself to the bumps and edges, and the rubber adhesive holds securely to the metal.



302

With only the pressure of a 3M™ PA-1 Wiper, 3M™ Vinyl Tapes stick on contact to just about any surface for fast application with no dripping, drying, or cleanup.

Product Information:

Product/ Color	Tape Structure (Backing/ Adhesive)	Backing Thickness mils (mm)	Total Thickness mils (mm)	Adhesion to Steel oz./in. (N/100 mm)	Tensile Strength lbs./in. (N/100 mm)	Elongation at Break %	Temperature Range °F (°C)	Comments
ASTM Test Method: D-3652		**D-3652**	**D-3330**	**D-3759**	**D-3759**			
Premium Performance Vinyl Tapes								
471/Various	Vinyl/Rubber	4.1 (0.10)	5.2 (0.13)	23 (25)	16 (280)	130	40 to 170°F (4 to 77°C)	Conformable and clean removal. Black, Blue, Brown, Green, Orange, Purple, Red, Transparent, White, Yellow.
471+/Indigo	Vinyl/Rubber	4.1 (0.10)	5.3 (0.13)	35 (38)	14 (243)	191	Up to 250°F (121°C)	Superior conformability, sharp paint line, clean removal.
4712/Various	Vinyl/Rubber	4.1 (0.10)	5.2 (0.13)	34 (37)	16 (280)	190	40 to 170°F (4 to 77°C)	Linered version of 471. 42# premium paper liner.
472/Black	Vinyl/Rubber	9.0 (0.23)	10.4 (0.26)	23 (25)	32 (560)	270	Up to 225°F (107°C)	Abrasion resistant. High temperature resistant.
477/ Transparent	Vinyl/Rubber	6.0 (0.15)	7.2 (0.18)	24 (26)	24 (420)	230	40 to 170°F (4 to 77°C)	Abrasion resistant.
4731/Various	Vinyl/Rubber	6.0 (0.15)	7.0 (0.18)	20 (22)	18 (315)	245	40 to 170°F (4 to 77°C)	Electroplating.
General Purpose Vinyl Tapes								
764/Various	Vinyl/Rubber	4.0 (0.10)	5.0 (0.125)	18 (21)	13 (228)	180	60 to 85°F (15 to 27°C)	Non-critical applications. Black, Blue, Brown, Gray, Green, Orange, Purple, Red, Transparent, White, Yellow.
Hazard Identification Tapes — Premium Performance Permanent								
5700/Black and White Stripes	Vinyl/Rubber	4.2 (0.11)	5.5 (0.14)	19 (21)	15 (260)	170	40 to 170°F (4 to 77°C)	Adhesive side printing. Critical applications.
5702/Black and Yellow Stripes	Vinyl/Rubber	4.2 (0.11)	5.4 (0.14)	19 (21)	15 (260)	170	40 to 170°F (4 to 77°C)	Adhesive side printing. Critical applications.
Hazard Identification Tapes — General Performance Temporary								
766/Black and Yellow Stripes	Vinyl/Rubber	4.0 (0.10)	5.0 (0.125)	18 (21)	13 (228)	180	60 to 85°F (15 to 27°C)	Non-critical applications.
767/Red and White Stripes	Vinyl/Rubber	4.0 (0.10)	5.0 (0.125)	18 (21)	13 (228)	180	60 to 85°F (15 to 27°C)	Non-critical applications.
Electroplating and Anodizing								
470/Tan	Vinyl/Rubber	6.3 (0.16)	7.1 (0.18)	26 (28)	20 (350)	180	Up to 170°F (77°C)	Chemical resistance.[1]
484/Tan	Vinyl/Rubber	5.7 (0.14)	7.2 (0.18)	20 (22)	20 (350)	220	Up to 170°F (77°C)	Lower adhesion than 470 Tape.
Polyethylene Tapes								
480/Transparent	Polyethylene/ Acrylic	3.8 (0.10)	5.1 (0.13)	22 (24)	10 (180)	277	20 to 170°F (-7 to 77°C)	Acrylic adhesive.
481/Black	Polyethylene/ Rubber	7.7 (0.20)	9.8 (0.25)	32 (35)	15 (260)	510	20 to 170°F (-7 to 77°C)	Preservation sealing tape.[2]
4811/White	Polyethylene/ Rubber	7.5 (0.18)	9.5 (0.24)	30 (36)	15 (260)	490	Up to 170°F (77°C)	Preservation sealing tape.
483/Various	Polyethylene/ Rubber	3.9 (0.10)	5.3 (0.13)	12 (13)	11 (190)	240	Up to 170°F (77°C)	Black, Blue, Green, Red, Transparent, White, Yellow

[1] HH-T-0025, Amend 2 [2] MIL-T-22085 Amend 3, Type IV

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

Technical Appendix

3M™ Bumpon™ Protective Products

Adhesives and Application Matrix

Application Comments	Adhesive Selection		
	R-25 Synthetic Rubber	**R-30 Natural Rubber**	**A-20 Acrylic**
Lead Standard Product Families (molded)	SJ6500 series (Quiet Clear) or SJ6100 (opaque)	SJ5000, SJ5500, SJ5700 Series (opaque)	SJ5300 Series (standard clear) or SJ5400 Series
Initial Adhesion	Excellent	Good	Fair
Long-Term Adhesion (buildup)	Good	Good	Excellent
Recommended Surface Energy Range	Low to Medium	Medium to High	High
Typical Application Surface (substrates)	Polypropylene, powder coated paints, coated wood	Acrylic, PVC, polycarbonate, smooth painted surfaces	Unpainted or plated metal, glass, ABS, nylon
Application Surface Versatility/Range	Good	Excellent	Fair
Customer Value Statement resists "knock-off" in production lines,	"Quick Stick" performance shapes available – versatile "start-to-finish"	Greatest number of standard color, match to application surfaces; adhesive works well on most surfaces	SJ5300 (clear urethane) is a universal SJ5400 (true white) for white appliances or painted
Two Key Application Examples	SJ6561 or SJ6553 (Quiet Clear) – cushioning stop for wood cabinetry, doors and drawers; SJ6115 or SJ6125 (Top Hat) – feet designed for small appliances with recessed molded into base made of polypropylene	SJ5012 – nonskid feet for light- to medium-sized countertop appliances; SJ5744 – nonskid feet for larger sized countertop appliances	SJ5312 (clear) or SJ5412 (white) – nonskid feet for glass or hard plastic cutting boards; SJ5302 (clear) – small size, low profile, nonskid foot for hand-held electronic devices or light desktop organizers
3M™ Bumpon™ Rollstock Families (by adhesive type)	SJ6200 (opaque solid), SJ5200 (opaque soft foam)	SJ5800 (opaque solid) SJ6000 (opaque solid)	SJ5600S (clear), SJ5900 (opaque, medium firm foam),

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

Shape Selection Guide

Point of contact

Flat Hemisphere

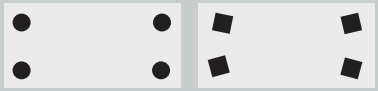
Select flat for increased load and wear resistance; hemisphere for increased sound damping and impact absorption.

Profile

Low High

Select low for increased load and shear resistance; high for better heat dissipation.

Alignment



Circle or hexagon Rectangle

Select circular or hexagonal shapes for easy alignment. Rectangular and square shapes are harder to align without recesses.

Technical Appendix

3M™ Protective Tapes

How to select 3M™ Protective Tapes

The 3M™ Protective Tape Products Selection Guide is a quick reference of standard 3M™ Protective Tape Products to help the user select appropriate tapes for consideration and evaluation in their applications. Products are color-coded by product family for easy reference.

Please remember that many factors can affect the use and performance of a 3M™ Protective Tape Product in a particular application:

- Surface texture of substrate
- Surface preparation of substrate (including use of solvents)
- Method and conditions of tape application
- Time and environmental conditions
- Storage conditions

It is essential that the user evaluate the 3M™ Protective Tape Product to determine whether it is suitable for a particular purpose to meet the user's expectation.

Protective Tape Product Families

Polyethylene Tapes

- Better transparency
- Good abrasion resistance
- Cost effective

UV Tapes – Clear and Blue

- Outdoor UV resistance for up to 5 months
- Available in transparent and blue

UV Tapes – Co-Extruded Black/White

- Enhanced outdoor UV resistance for up to 6 months

Carpet Tapes

- Good transparency
- Easy unwind

Fire Retardant Tapes

- Complies with many fire-retardant tests
- Stays in place during use
- Removes cleanly

Cold Seal® Films

- Clear film that seals to itself
- Ideal for packaging small parts
- Tamperproof packaging

Co-Extruded "A" Tapes

The best choice in a 3M™ Protective Tape

- Excellent conformability
- Enhanced abrasion and puncture resistance
- Good heat resistance

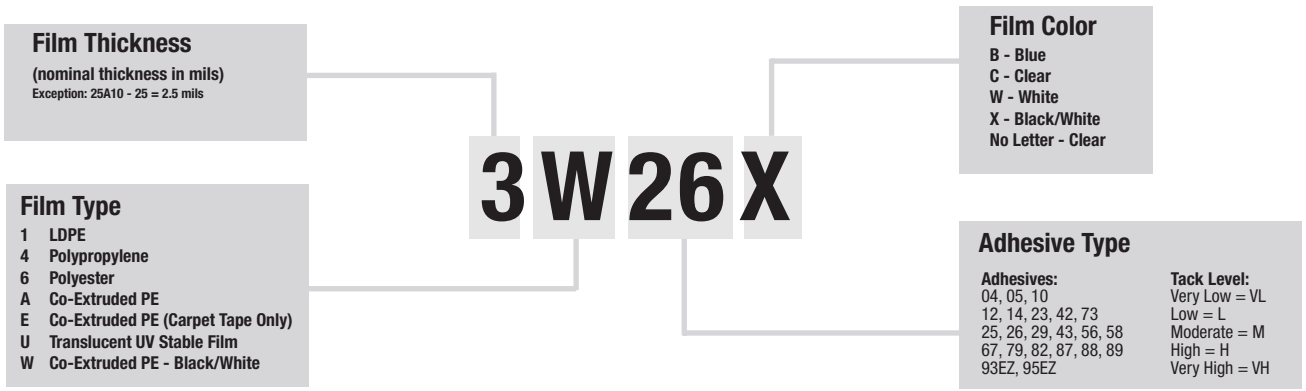
Polyester Tapes

- Best optical clarity
- Excellent heat resistance
- Excellent puncture resistance

Polypropylene Tapes

- Good abrasion resistance
- Good heat resistance
- Good short-term outdoor UV resistance

Protective Tape Number Identification Guide



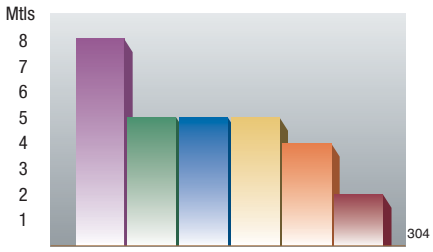
Technical Appendix

3M™ Specialty Tapes Backing and Adhesive Selection Guide

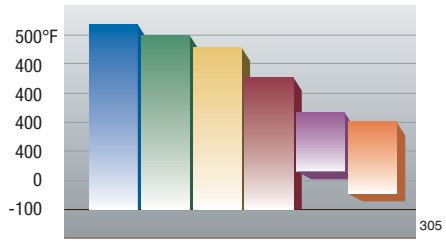
To help select the **tape backing** for your application, consult the following charts. Each backing is rated in eight critical categories.

Key to Application Charts

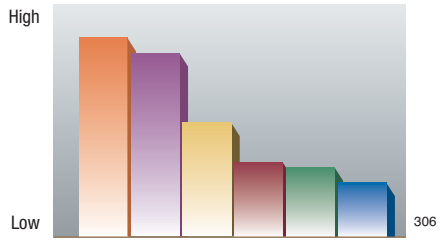
- Polyvinylchloride – PVC
- Polyethylene – PE
- Polyester – PET
- Metal Foil
- Polytetrafluoroethylene – PTFE
- Glass Cloth



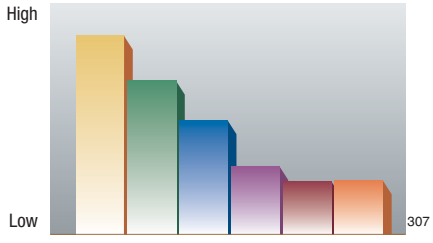
1. Backing Thickness (Caliper)



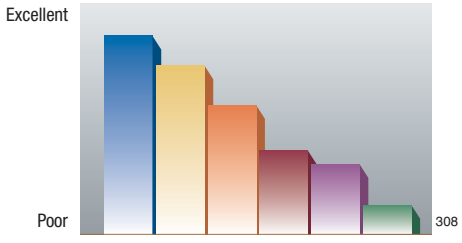
2. Temperature Range of Tape Backings



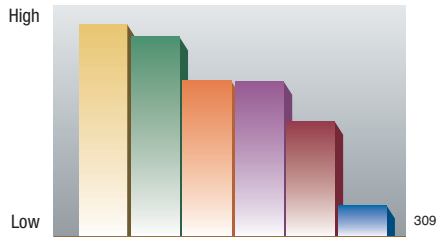
3. Conformability of Backings



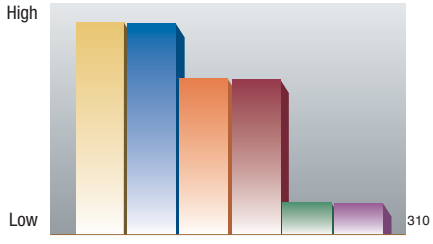
4. Backing Cost



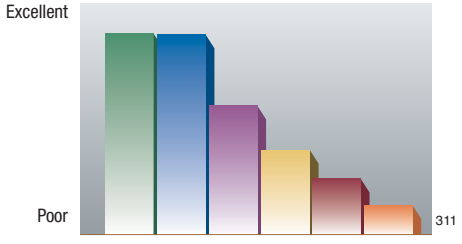
5. Backings as Moisture Barriers



6. Chemical Resistance of Backings



7. Solvent Resistance of Backings

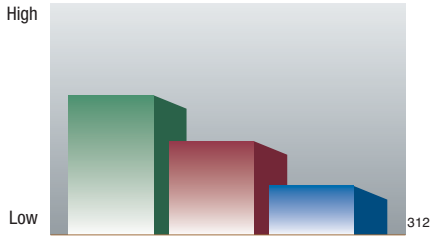


8. Resistance to Recovery (Dead Stretch)

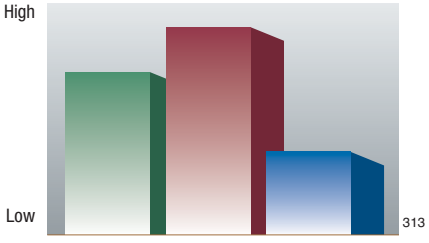
To help select the **adhesive** for your application, consult the following charts. Each adhesive is rated in five critical categories.

Key to Adhesive Charts

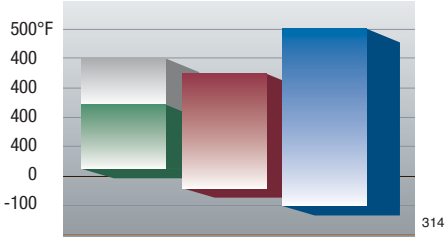
- Rubber Adhesive
- Acrylic Adhesive
- Silicone Adhesive



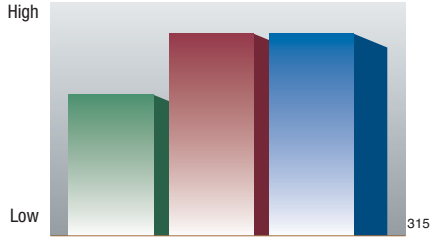
9. Initial Tack



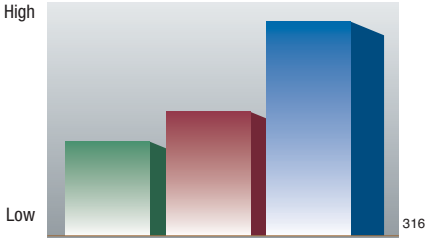
10. Ultimate Adhesion to Steel



11. Temperature Ranges of Adhesives



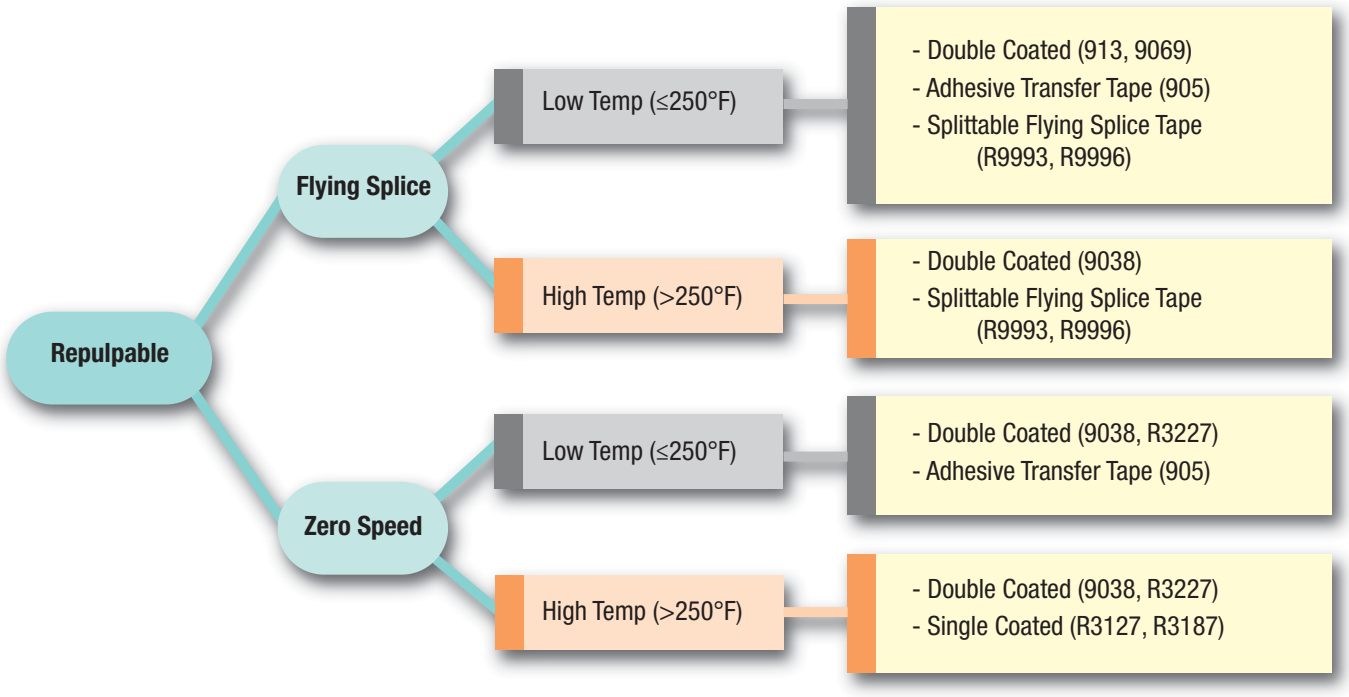
12. Long-Aging Capabilities



13. Cost of Adhesives

Technical Appendix

3M™ Splicing Tapes Selection Guide



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

3M™ Slick Surface Tapes

Performance Comparison

	Good	Better	Best
Heat Resistance	UHMW-PE Tape	PTFE Film Tape	PTFE Glass Cloth Tape
Wear Life	PTFE Film Tape	PTFE Glass Cloth Tape	UHMW-PE Tape
Conformability	PTFE Glass Cloth Tape	UHMW-PE Tape	PTFE Film Tape
Low Friction Coefficient	UHMW-PE Tape	PTFE Glass Cloth Tape	PTFE Film Tape
Anti-stick/Solvent Resistance	PTFE Glass Cloth Tape	UHMW-PE Tape	PTFE Film Tape

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

Glossary

This glossary is compiled by the Pressure Sensitive Tape Council (PSTC) and 3M (terms identified with an asterisk).

PSTC is the North American trade association for tape manufacturers and affiliate suppliers, dedicated to helping the industry produce quality pressure sensitive adhesive tape products in the global marketplace. Visit www.pstc.org for more information.

Abrasion resistance
The ability of a tape to withstand rubbing and still function satisfactorily.

Accelerated aging
A means whereby the deterioration of a tape encountered in natural aging may be accelerated and reproduced in the laboratory.

Accelerated weathering (weathering)
Exposure in a chamber to ultraviolet light, heat, and water whereby the effect of outdoor exposure on a tape can be approximated.

Acrylic adhesive*
A pressure sensitive, viscoelastic blend of acrylic-based materials which may be modified by tackifying additives. Acrylic adhesives are a very broad class of materials and come in many types to achieve different properties.

Adhesion to backing
The bond produced to the backing of the same tape or another tape backing.

Adhesive deposit or residue
Adhesive that is pulled away from the tape upon removal and remains on the surface to which it has been applied.

Adhesive transfer
When the adhesive on a tape either splits or transfers completely from the backing on to the surface it has been applied to either during unwind or removal, resulting in tacky areas on the surface.

Anchorage
The specific adhesion of a pressure sensitive adhesive to a face material or an anchor coat.

AOG*
Aircraft On Ground

Article letters*
Letters if a MSDS does not exist on a product.

Backing
A relatively thin flexible material to which the adhesive is applied. Theoretically, any material that is reasonably flat, thin and flexible can be used as a tape backing.

Backsize
An occlusive coating applied to the non-pressure sensitive side of a porous backing, such as paper, in order to provide a satisfactory surface that the pressure sensitive adhesive side can contact when the tape is wound into a roll.

Bleed through (bleeding)
Penetration through the tape of a coloring material (paint, etc.) onto the surface to which the tape is applied.

Blocking
Adhesion between the sheets of the plies of rolls of coated material, usually due to extreme conditions of pressure, temperature, or humidity.

BSR*
An acronym for Buzz, Squeak, and Rattle.

Bumpon™ Products*
A 3M trademark name for self-adhering shapes made of urethane rubber that when applied will help prevent slipping, mute noise and absorb impact. Not to be used outdoors, if exposed to UV, chalking will occur.

Bursting strength
The ability of a tape to resist damage when a force is applied evenly and perpendicularly to the surface of a tape.

Butt splice (butt joint)*
Splices made on certain converting equipment (especially in heavy basis weight paper, boards, etc.). The trimmed ends of the web do not overlap but are held together end-to-end with single-sided adhesive tape, or in some similar fashion. A strip of paper or tape may also be laminated on one or both sides to form a continuous web.

Caliper
The thickness (as of a sheet of paper) measured under specified conditions. See also THICKNESS.

Carrier
A webstock that holds a pressure sensitive adhesive, especially used to refer to double-faced or double coated tapes.

CID*
In relation to military specs = Commercial Item Description.

Clean removal*
When a tape is expected to remove cleanly from the substrate after a period of time.

Coating weight
The weight of a coating per unit area. In SI-units expressed as grams per square meter (g/m2).

Co-extruded*
Refers to film extruded in individual layers with the possibility of different raw materials in each layer providing unique combined film properties.

Cohesion (cohesive strength, internal bond)
The ability of the adhesive to resist shear stress and splitting. Good cohesion is necessary for clean removal.

Cold flow
The tendency of a pressure sensitive adhesive to act as a heavy viscous liquid over long periods of time. Such phenomena as oozing and increase in adhesion with time are the result of this characteristic.

Color stability
The ability of a tape to retain its original color, particularly when exposed to light.

Conformability*
The ability for a tape to make arcs, circles, go into depressions, go over protrusions and still stay in one piece without slivering, tape lifting, necking down.

Controlled unwind*
When a balance is achieved between too low of an unwind, allowing the tape to prematurely unwind from its own backing, or too high, causing premature slivering or breaking when unwinding from its roll.

**Compiled by 3M.*

Corona resistance
The ability of an elastomeric adhesive, coating, or sealer acting as an insulator to withstand the effects of high voltage discharge. Indications of failure appear as surface cracks.

Cratering*
A paint defect that when viewed under a microscope resembles a crater with a depression in the center and a raised rim around the perimeter. This usually is caused by a surface contaminant like a particle of dirt, gel particle or a surface tension change like from oil drop, silicone contamination.

Creep
The slow movement of the adhesive or backing under shear stress.

Crepe paper*
Paper with a crinkled or puckered texture. This allows the paper to stretch or elongate making it useful to curve and conform to irregular surfaces better than flat paper.

Cross-linking
Developing a three-dimensional molecular structure in an adhesive normally activated by heat or irradiation. An improvement in shear resistance, high temperature resistance, and oil or solvent resistance will normally result.

Cure
To alter the properties of an adhesive by chemical reaction, which may be condensation, polymerization, or vulcanization. Usually accomplished by the action of heat and catalysts, alone or in combination, with or without pressure.

Curl
The tendency of paper by itself or in a laminate to bend or partly wrap around the axis of one of its dimensions.

Dead soft aluminum*
Aluminum that has had no annealing or hardening.

Dead stretch*
The ability for a tape to be pressed into a depression and stay in place as if it were "dead" or without "memory/recovery."

Delamination
A separation or splitting of the tape such as separation of the backing into two distinct layers, separation between laminations of a tape consisting of more than one backing, separation between filaments and backing of a filament reinforced tape, or sepa.

Dewetting*
When a paint appears to bead up or not flow out on a surface, like water on a freshly waxed car.

Dielectric strength
The measure of the maximum voltage stress that a single layer of tape can withstand before dielectric failure occurs, the test being carried out under prescribed conditions.

Dimensional stability
That property of a material that relates to the constancy of its dimensions, particularly in relation to external influences such as moisture or temperature.

Double coated*
An adhesive applied to both sides of a carrier.

Double process*
A sandblasting procedure in which frosting is done first and sunk lines are done last. This requires frosted areas to be uncovered and recovered for the frosting process.

Edge curl
The peeling back or lifting of the outer edge of an applied tape in a curved manner.

Edge lift
The tendency for the edge of an adhesive label to lift from a surface to which it has been adhered.

Edge seepage*
When paint gets under the edge of a tape, often appearing as hairlines of paint perpendicular to the tape edge.

Elasticity
The extensible property of adhesive films or adhesive interfaces to contract and expand in such a manner as to overcome the differential contraction and expansion rates that the bonded adherents may exhibit.

Elastomer
An elastic, polymeric substance, such as natural or synthetic rubber.

Electrolytic corrosion factor
A measure of the tape's corrosive effect on an electrical conductor, particularly copper. This is particularly important in the selection of tapes for electrical insulation.

Elongation (stretch, ultimate elongation)
The distance a tape will stretch in the machine or cross direction before breaking under controlled conditions, expressed as a percentage of original length. Elongation is not necessarily an indication of conformability.

Emissivity*
All solid surfaces emit radiant energy. The emissivity of a material is a ratio of the actual energy emitted from that surface to the maximum possible, or "black body", radiant energy. The maximum possible emissivity is unity and it is unit-less parameter.

Enamel paint*
A broad classification of free-flowing pigmented finishing materials which dry to a smooth, hard finish and usually possess a gloss.

ESD*
ElectroStatic Discharge

Extruded*
A manufacturing process where material is forced through a nozzle (like extruded film or backing). Better for lay-flat than skived.

Face stock
Any paper, film, fabric, laminate, or foil material suitable for converting into pressure sensitive material stock. In the finished construction this web is bonded to the adhesive layer and becomes the functional part of the tape construction.

Fall-off
When a tape pulls completely from the surface to which it is applied and drops off.

FAR 25.853(a)*
Federal Aviation Regulation 12-second vertical burn test.

Fatigue
A weakness resulting from stress created by repeated flexing or impact force upon the adhesive-adherent interface.

**Compiled by 3M.*

Glossary – continued

Feet*
Bumpon™ Protective Products used as self-adhesive, anti slip bumpers that are applied to the underside of objects to prevent movement and for surface protection.

Filaments
Thin, longitudinal yarns or threads of glass, polyester, nylon, or other high strength materials.

Fine line*
Tapes that are used in the painting industry to give a very sharp paint line. Usually made with plastic type backings that are both smooth and conformable.

Flame resistance
The ability of a tape to withstand exposure to flame. Fireproof materials will not burn even when exposed to flame. Flame-resistant (fire-retardant, self-extinguishing) materials will burn when exposed to flame, but will not sustain the burn after the flame is removed.

Flame retardant*
Serving or tending to retard 1) slows flame propagation 2) meets industry regulations 3) is not flameproof 4) is not necessarily high temp performance.

Flatback paper*
Paper with a flat (not crinkled) texture. This allows the paper to retain it original shape making it useful for maintaining a straight line and smooth backing feel.

Fluting
Distortion of a roll of tape such that the layers no longer form a circle.

Frosting*
Lightly removing the polish from a monument by using abrasive to give texture and a white contrast to the engraving.

Gapping
Openings between layers of tape within a finished roll.

General paint masking*
Where the paint line is important, but not critical to function or appearance on the finished part.

General purpose holding*
Where a tape is expected to temporarily hold miscellaneous items, such as during an assembly process.

Gloss
A light reflection characteristic of tape backings, usually expressed by such terms as glossy, low gloss, matte, etc.

Gross masking*
Any material like paper or plastic that can be used to cover a large area, usually held in place with tape, that protects the area from paint overspray.

Hand-cut*
Process of cutting/carving design by hand to achieve desired pattern in sandblast stencil rubber.

Heat seal
An adhesive film intended to be reactivated by the application of physical or chemical changes caused by exposure to high temperatures.

High holding strength – masking*
Where a masking tape is expected to hold for long periods of time (several hours) to a surface to be painted or hold large areas of gross masking materials.

High temperature masking*
Where a masking tape is expected to withstand bake oven temperatures up to 300F° (149C°) for 30 minutes.

High unwind*
When a tape is very difficult to unwind from its own roll. Can result in slivering off the roll.

High-speed unwind
A term referring to the process of unwinding or dispensing of tapes at a relatively high rate of speed, usually over 15 meters per minute.

Holding power (shear adhesion, shear resistance)
The ability of a tape to resist static forces applied in the same plane as the backing. Usually expressed in a time required for a given weight and length of tape to shear free from a vertical panel.

Hot melt (pressure sensitive adhesive)
A pressure sensitive adhesive, applied to the backing in hot liquid form, which then cools to form a conventional pressure sensitive adhesive.

Humidity
The moisture content of the air. Actual humidity is the number of grams of moisture in the air at any given time. Relative humidity is the percent of moisture relative to the maximum that air at any given temperature can retain without precipitation.

Hygroscopic
A tendency of some materials to readily absorb moisture from the atmosphere.

Impact resistance (shock resistance)
The ability of a tape to resist sudden impacts, pulls, or shocks as may sometimes be encountered by packages in transit.

Imprinting (ghosting)*
Can occur when a vapor barrier, such as plastic sheeting, is placed over a painted surface and exposed to heat and/or UV. Moisture trapped under the plastic can't evaporate so it is driven back into the paint, leaving an imprint.

Insulation resistance
The ability of tape to prevent the flow of electrical current across its surface, usually measured on the backing.

Kapton*
DuPont's brand name for polyimide.

Label stock
Pressure sensitive insulation materials furnished in roll or sheet form with liner, which can be later printed, frequently die-cut, and intended for use as labels.

Lacquer*
Various clear or colored synthetic organic coatings that typically dry to form a film by evaporation of a solvent, frequently a solution of cellulose derivative (as nitrocellulose).

Lap joint
A joint made by lapping one material over another to provide a mated area that can be joined with an adhesive.

Latent stain
A stain in a surface to which tape has been applied, which does not become noticeable until some time after the tape is removed, usually after the surface has been exposed to sunlight or heat.

**Compiled by 3M.*

Latex paint*
A water emulsion of plastic, obtained by polymerization, used especially in coatings that can recoalesce to form a thin film.

Leader tape*
Used to splice photographic film leaders together for film processing.

Lifting
A situation where a section of tape has pulled away from the surface to which it has been applied.

Low Adhesion Backsize (LAB)*
The surface treatment on the back (non-adhesive coated side) of a tape that allows the tape to unwind when in roll form. It also helps coatings like paint to stick to its surface to prevent paint flaking.

Low tack masking*
Where a very low removal force is desired, often for use on delicate surfaces.

Low temperature masking*
Where a masking tape is expected to withstand bake oven temperatures up to 200°F (93°C) for 30 minutes.

Medium temperature masking*
Where a masking tape is expected to withstand bake oven temperatures up to 250F° (121C°) for 30 minutes.

Metal foil
Thin, flexible sheets of metal, such as aluminum, copper and lead, used as tape backings because of their inherent properties such as weather resistance, electrical conductivity, reflectivity, etc.

Moisture vapor transmission rate
A measure of the rate of water vapor transmission through a pressure sensitive product usually measured in grams per square meter per 24 hours.

Necking down*
When a tape's width is reduced (usually due to stretching or elongating the tape) resembling the neck of a beverage bottle.

Nomograph*
A graphical means of representing properties of a material or system as a function of multiple parameters. A nomograph is used to describe the storage modulus and loss factor of viscoelastic damping materials as a function of temperature and frequency.

NPE*
An NPE number is used to designate an experimental product. NPE products are often provided to customers for evaluation purposes only, and may or may not be commercialized.

Off-core
A roll of tape in which the layers are in correct alignment, but the tape is displaced sideways on the core.

Off-site blasting*
Process where names and dates are blasted onto monument surface after installation of monument.

Oozing
A "squeezing out" of the adhesive from under the backing. Occurrence when a tape is in a roll form causes the edges of the roll to become tacky.

Opacity
The ability of a tape to prevent the transmission of light.

Opaque*
Cannot be seen through.

Outgassing
The release of volatile components under heat or vacuum.

Overspray*
Light coating of paint, usually from excess airborne paint, that can drift onto adjacent surfaces that should not be coated.

Overlap joint (overlap splice, lap splice, lap join, or lap joint)*
A type of adhesive joint, used normally on roll goods, in which the surface of one edge of the product extends over the edge of the product to be spliced normally at least one half inch, and is spliced with a single coated tape, adhesive or double coated tape.

Paint flaking*
The breaking of paint (that has been dried on the back of a tape) into small pieces such that when the tape is flexed, as during removal from a job, it falls off the back of the tape.

Pattern coated
A term that refers to the width and spacing arrangement of strips of adhesive laid down parallel to machine direction and across the width of pressure sensitive stock during its production.

PCB*
Printed Circuit Board

PE*
The abbreviation for polyethylene. Usually extruded in a single (mono) layer.

Peel adhesion
The force per unit width required to break the bond between a pressure sensitive adhesive tape and the surface to which it has been applied when the tape is peeled back at a controlled angle at a standard rate and condition.

Picking and weeding*
The process of removing the cut stencil pieces prior to sandblasting.

Plastic sheeting*
Large area plastic film used to cover or protect a surface or area from airborne particles.

Plasticization
The softening of an adhesive when exposed to migrating plasticizers or oils.

Plotters/Cutters*
Computerized machines that cut lettering and designs into sandblast stencil are called plotters. There are IBM compatible plotters that require a "T" punch, Gerber plotters that require a "S" punch and friction plotters that require no punch.

PP*
Abbreviation for polypropylene. Usually manufactured as a single (mono) layer via a casting process.

PPAP*
Production Part Approval Process – an automotive market requirement that can increase a product's chances of meeting specifications.

Pressure sensitive
A term commonly used to designate a distinct category of adhesive tapes and adhesives which in dry form (solvent/water free) are aggressively and permanently tacky at room temperature and that firmly adhere to a variety of dissimilar surfaces upon mere contact without the need of more than finger or hand pressure. These products require no activation by water, solvent, or heat in order to exert a strong adhesive holding force toward such materials as paper, plastic, glass, wood, cement, and metal. They have sufficient cohesive holding power and elastic nature so that, despite their aggressive tackiness, they can be handled with the fingers and removed from smooth surfaces without leaving a residue.

**Compiled by 3M.*

Glossary – continued

Priming
Application of a thin layer of adhesive-like material to a backing that serves as a bonding agent between the backing and the final adhesive coat.

PTFE*
Abbreviation for polytetrafluorethylene. Generic chemical name for Teflon®.

Quick stick (finger tack, initial adhesion, wet grab)
See TACK.

Release force
The measure of the force required to separate a unit width of pressure sensitive tape from a release coated surface at a controlled angle and speed.

Release liner
A web of sheet material used as a protective liner, which covers the adhesive side of the tape. It is removed prior to application. Most frequently found on double-sided tapes and label stocks.

Repulpable*
Paper tapes that can be recycled to the process without contamination of the broke pulp.

Resonant vibration*
A condition of oscillation caused when a small amplitude of periodic input has a frequency approaching one of the natural frequencies of the driven system. Resonant frequencies are determined by the physical parameters of the object or system. i.e. Marching troops "break step" when marching over a bridge such as to not to vibrate the bridge in resonance in the event the natural frequency of the bridge structure matches the frequency of the troops marching in step.

Rewinding
The operation of winding the webstock from the reel onto a core to produce rolls of the desired width, diameter and tension.

Rope stock
A smooth paper made wholly or largely of hemp fiber for tensile strength.

Ruban*
Ruban is French for "tape."

Rubber adhesive*
A pressure sensitive, viscoelastic blend of polymeric rubber-based materials and tackifying resin. The rubber materials may be natural or synthetic. Rubber adhesives are a very broad class of materials and come in many types to achieve different properties.

Sandblast filler*
Adhesive that is brushed on monuments to assure firm adhesion of stencil.

Saturation (impregnation)
Adding materials (saturant) to the backing for improvement of physical properties and resistance to various deleterious environments.

Self-seal
An adhesive joint that is accomplished by coating both adherent surfaces, and bringing them under pressure; an elastomeric adhesive (cohesive) used on envelope flaps, box closures, etc, whereby the adhesive film will bond only to itself.

Shear adhesion
The time required, under specified test conditions (surface area, weight load), to slide a standard area of pressure sensitive tape from a standard flat surface in a direction parallel to the surface.

Shear strength after solvent immersion
The force required to separate a bond by shear force after immersion in a typical varnish solvent under designated conditions.

Sheet resistivity*
A measure of electrical resistivity obtained by measuring the voltage drop across two opposite sides of a square planer area at known current. The geometry of this measurement allow a square of any size to be used. Sheet resistivity is commonly used to measure the electrical characteristics of thin films. Units are ohms or more commonly ohms/square.

Silicone adhesive*
A pressure sensitive, viscoelastic blend of polymeric silicone-based materials and a silicone tackifying resin. Silicone adhesives are typically higher temperature performing pressure sensitive adhesive materials.

Single faced (coated)
A tape to which a pressure sensitive adhesive is applied to only one side of the backing.

Single process*
A sandblasting procedure in which sunk lines are sandblasted first and frosting is done last.

Sinking/Blasting*
Blowing sandblast abrasive at areas where the rubber has been removed to create recessed lines one half inch deep.

Skived*
A manufacturing process where material is shaved (like shaving off a layer of soap). Usually better for wrapping than extruded material.

Slip sheet or interliner
See RELEASE LINER.

Slivering
When the tape tears or breaks into small pieces, either on unwind or on removal from a surface.

Slot feed*
A punched "S" pattern using several round holes and a long, oblong slot hole.

Solvent/chemical resistant*
The ability to resist common solvents or chemicals.

Solvent trap*
When a freshly painted surface is painted or taped over too quickly not allowing the solvent to evaporate. Can result in a haze, surface takes on the shape of what ever touches it, adhesive transfer due to solvents attacking the adhesive on the tape.

Spacers*
Bumpon™ Protective Products used as cushioning spacers to separate adjacent surfaces, preventing contact.

Splice*
A joint made in a continuous sheet of paper with a glue or adhesive-type tape when there is a break in the web caused by winding or rewinding into a roll.

**Compiled by 3M.*

Static charge*
Static (or sometimes electro-static) charge is electrical charge that has typically been generated by the tribocharging that results from the separation of two dissimilar materials. It may also occur as the result of previous direct contact with a power source. It is usually measured in volts.

Static dissipative*
A class of materials with sufficient electrical conductivity to dissipate or bleed static charge prior to an ESD "event" or rapid discharge of energy. Static dissipative materials have electrical resistivities in-between semi-conductors and insulators, typically between 1E09 ohms/sq and 1E12 ohms/sq.

Stencil press*
A machine that presses and cuts plastic letters into rubber stencil.

Stops*
Bumpon™ Protective Products used to regulate movement and prevent travel, as on cabinet doors and drawers to prevent slamming and to deaden sound.

Subsequent adhesion
The force required to remove a unit width of pressure sensitive tape from a standard panel after it has been in contact with a release liner for a given period of time. This must be compared with the adhesion of the same tape that has not been in contact.

Sunk lines*
Individual lines about 1/16" wide or larger that create lettering and designs.

Sunlight exposure – up to 7 days*
When exposure to direct sunlight is expected, even on a transparent surface like glass.

Surface energy (surface wetting ability)
The measure of surface tension in dynes. The lower the surface energy of a substrate, the more difficult it becomes for an adhesive or coating to wet out that surface.

Surface treating
Any method of treating a polyolefin so as to alter the surface and render it receptive to inks, paints, lacquers and adhesives such as chemical, flame and electronic oxidation.

Tack
The property of a pressure sensitive adhesive that allows it to adhere to a surface under very slight pressure. It is determined by the ability of the adhesive to wet quickly the surface it contacts.

Tape lifting*
When a tape prematurely releases from a surface after it has been firmly rubbed down to the surface.

Tear resistance
The force required to propagate a tear in a tape in a given direction after the tear has been initiated.

Telescoping
A sideways sliding of the tape layers, one over another, such that the roll looks like a funnel or a telescope, usually occurring over a period of time.

Tensile strength
The force required to break a unit width of tape by controlled pulling on opposite ends of the piece.

Thermal conductivity
The rate of thermal energy transfer through a material by conduction.

Thickness (caliper, gauge)
The perpendicular distance from one surface of either a tape, backing, or adhesive to the other, usually expressed in mils, thousandths of an inch, or millimeters. This is usually measured under controlled slight pressure with a special gauge.

Tractor feed*
A punched "T" pattern using round holes.

Transfer tape
A pressure sensitive adhesive unsupported applied to a two-side release coated liner.

TSCA*
Toxic Substances Control Act.

UHMW – film*
Ultra High Molecular Weight.

UL Listed*
Underwriter Laboratory certification of products for product compliance for public safety (i.e. electronics, heating and ventilation, etc.) as well as businesses for compliance to industry standards (i.e. ISO).

UL 181*
UL181A, UL181B, and UL181B-FX are different in that those must be UL Listed and that information must be printed on the tape surface. HVAC/R contractors often deal with UL 181A (maybe foils) and UL 181 F-FX.

UL 723*
UL 723 deals mainly with flammability.

Unwind or Unwind adhesion
The force required to remove tape from a roll under prescribed conditions.

Use on masking machines*
When tape and a gross masking material are automatically dispensed on a piece of equipment and applied to each other for large area protection from paint overspray.

Varnish*
A liquid preparation that when spread and allowed to dry on a surface forms a hard lustrous typically transparent coating.

Water Penetration Rate (WPR)
The weight of water transmitted through a controlled area of tape under a specified time and conditions.

Water Vapor Transmission (WVTR)
The weight of water vapor allowed through a controlled area of tape within a specified time period and under controlled conditions.

**Compiled by 3M.*

Glossary – Packaging

Adjustable Case Sealer – A case sealer that must be manually adjusted for box width and height. Accepts runs of one box size at a time.

Containment – To confine and hold in place.

C-clip (or U-clip) – Tape seal applied to an RSC carton with tape legs down both sides of the carton and across the center seam.

L-clip – Tape seal applied over the edge of non-RSCs with one leg down the side and the other on the top and/or bottom.

Pad – Pre-cut, tape strips stacked on a pad for easy one-at-a-time removal.

PLE – Packing List Envelope

Pouch Tape – Tape with adhesive -free area within a perimeter of pressures sensitive adhesive. When applied the adhesive-free area forms a containment pouch.

Random Case Sealer – A case sealer that automatically adjusts for case width and height. Typically used for runs of different box sizes.

Recouperage – To salvage goods within a container that has broken or opened during shipment.

Remote Sensing – The technique or process of obtaining data or images from a distance.

Retroreflective – Surface, material, or device that reflects light back to its source.

Numerical Index

Numerical Index – continued

Product Name Index

Product Name Index – continued

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