



# Double Coated Tape with Adhesive 420

94210 • 94215 • 94220

Technical Data

January, 2011

**Product Description** 3M™ Double Coated Tapes with 3M™ Adhesive 420 are high tack film tapes that feature a polyester film carrier for dimensional stability and improved handling with ease of die cutting and laminating. The high tack acrylic 3M adhesive 420 provides both high performance at a wide temperature range and excellent adhesion to many plastics.

Construction Information	Product Number	Faceside <sup>1</sup> Adhesive Type Thickness	Carrier Type Thickness	Backside <sup>2</sup> Adhesive Type Thickness	Liner Color, Type, Caliper <sup>3</sup>	Total Thickness (w/o liner)
	3M™ Double Coated Tape 94210	420	Clear Polyester 0.044 mm (1.7 mil)	0.012 mm (0.5 mil)	420 0.044 mm (1.7 mil)	Tan, 58# Polycoated Kraft 0.11 mm (4.2 mil)
3M™ Double Coated Tape 94215	420	Clear Polyester 0.069 mm (2.7 mil)	0.012 mm (0.5 mil)	420 0.069 mm (2.7 mil)	Tan, 58# Polycoated Kraft 0.11 mm (4.2 mil)	0.15 mm (5.9 mil)
3M™ Double Coated Tape 94220	420	Clear Polyester 0.095 mm (3.7 mil)	0.012 mm (0.5 mil)	420 0.095 mm (3.7 mil)	Tan, 58# Polycoated Kraft 0.11 mm (4.2 mil)	0.20 mm (7.9 mil)

**Note 1:** Faceside (FS) adhesive is on the interior of the roll, exposed when unwound.

**Note 2:** Backside (BS) adhesive is on the exterior of the roll, exposed when liner is removed.

**Note 3:** The caliper listed is based on a calculation from manufacturing controlled adhesive coat weights using a density of 1.012 g/cc.

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## Typical Physical Properties and Performance Characteristics

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

3M™ Double Coated Tape												
Product Number	94210			94215			94220					
Adhesive	420			420			420					
Tape Thickness	0.10 mm			0.15 mm			0.20 mm					
Breakdown Voltage				5500 volts			7400 volts					
Dielectric Strength				900 volts/mil			900 volts/mil					
Adhesion 15 min dwell @ RT Modified ASTM D-3330 180 degree peel 2 mil Al foil backing		<u>oz/in</u>	<u>N/cm</u>	<u>kg/25.4mm</u>		<u>oz/in</u>	<u>N/cm</u>	<u>kg/25.4mm</u>		<u>oz/in</u>	<u>N/cm</u>	<u>kg/25.4mm</u>
	SS	40	4.4	1.1	SS	44	4.9	1.3	SS	65	7.1	1.8
	PC	45	4.9	1.3	PC	55	6.0	1.6	PC	75	8.2	2.1
	ABS	40	4.4	1.1	ABS	50	5.5	1.4	ABS	65	7.1	1.8
	PP	25	2.7	0.7	PP	30	3.3	0.9	PP	45	4.9	1.3
Adhesion 72 hr dwell @ RT Modified ASTM D-3330 180 degree peel 2 mil Al foil backing		<u>oz/in</u>	<u>N/cm</u>	<u>kg/25.4mm</u>		<u>oz/in</u>	<u>N/cm</u>	<u>kg/25.4mm</u>		<u>oz/in</u>	<u>N/cm</u>	<u>kg/25.4mm</u>
	SS	50	5.5	1.4	SS	70	7.7	2.0	SS	85	9.4	2.4
	PC	60	6.6	1.7	PC	70	7.7	2.0	PC	80	8.8	2.3
	ABS	50	5.5	1.4	ABS	65	7.1	1.8	ABS	75	8.2	2.1
	PP	30	3.3	0.9	PP	40	4.4	1.1	PP	45	4.9	1.3
Shear Strength at RT Modified ASTM D-3654 1 inch <sup>2</sup> sample size 1000 grams	10,000 Minutes			10,000 Minutes			10,000 Minutes					
Shear Strength at 158°F (70°C) Modified ASTM D-3654 1 inch <sup>2</sup> sample size 500 grams	10,000 Minutes			10,000 Minutes			10,000 Minutes					

## Features

- A polyester carrier in the products provides dimensional stability and improved handling with ease of die cutting and lamination compared to adhesive transfer tapes.
- 3M™ Adhesive 420 provides good temperature and chemical resistance and withstands tough application environments.
- 3M™ Adhesive 420 provides good shock resistance when dropped at various temperatures.
- 3M™ Adhesive 420 provides good adhesion to both HSE and LSE substrates.

## Available Sizes

Roll length, width, slitting tolerance, core size.

Product	3M™ Double Coated Tape 94210 • 94215 • 94220
Maximum Length in.:	
1/2" to 63/64"	180 yds. (164 m)
1" to 54"	360 yds. (329 m)
Available Widths:	
Minimum	1/2" (12.7 mm)
Maximum	54" (1372 mm)
Normal Slitting Tolerance:	± 1/32 in. (0.08 mm)
Core Size (ID):	3.0 in. (76.2 mm)

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<b>Temperature Resistance</b>	Long Term (days, weeks):	250°F (121°C)
	Short Term (minutes, hours):	300°F (149°C)

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**Humidity Resistance** No adverse effect on the bond after exposed to 100% relative humidity at 100°F (38°C).

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**U.V. Resistance** Adhesive is resistant to oxidation and ozone when exposed to air or ultraviolet light.

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**Application Techniques** Bond strength is dependent upon the amount of adhesive-to-surface contact developed. Firm application pressure helps develop better adhesive contact and improve bond strength. To obtain optimum adhesion, the bonding surfaces must be clean, dry and well unified. Some typical surface cleaning solvents are isopropyl alcohol or heptane.\*

**\*Note:** Carefully read and follow the manufacturer's precautions and directions for use when using solvents. Ideal tape application temperature range is 70°F to 100°F (21°C to 38°C). Initial tape application to surfaces at temperatures below 50°F (10°C) is not recommended because the adhesive becomes too firm to adhere readily. However, once properly applied, low temperature holding is generally satisfactory.

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**Environmental Performance**

**Humidity Resistance:** High humidity has minimal effect on adhesive performance. No significant reduction in bond strength is observed after exposure for 7 days at 90°F (32°C) and 90% relative humidity.

**UV Resistance:** When properly applied, nameplates and decorative trim parts are not adversely affected by exposure.

**Water Resistance:** Immersion in water has no appreciable effect on the bond strength. After 100 hours at room temperature, the high bond strength is maintained.

**Temperature Cycling Resistance:** High bond strength is maintained after cycling four times through:

- 4 hours at 158°F (70°C)
- 4 hours at -20°F (-29°C)
- 4 hours at 73°F (22°C)

**Chemical Resistance:** When properly applied, nameplate and decorative trim parts will hold securely after exposure to numerous chemicals including oil, mild acids, and alkalis.

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**Application Equipment** To apply adhesives in a wide web format, lamination equipment is required to ensure acceptable quality. To learn more about working with pressure-sensitive adhesives please refer to technical bulletin, Lamination Techniques for Converters of Laminating Adhesives (70-0704-1430-8).

For additional dispenser information, contact your local 3M sales representative, or the toll free 3M sales assistance number at 1-800-362-3550.

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## Storage

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

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## Shelf Life

If stored under proper conditions, these products retain their performance and properties for two years from date of manufacture.

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## Technical Information

The technical information, recommendations and other statements contained in this document are based upon tests or experience that 3M believes are reliable, but the accuracy or completeness of such information is not guaranteed.

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## Product Use

Many factors beyond 3M's control and uniquely within user's knowledge and control can affect the use and performance of a 3M product in a particular application. Given the variety of factors that can affect the use and performance of a 3M product, user is solely responsible for evaluating the 3M product and determining whether it is fit for a particular purpose and suitable for user's method of application.

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**ISO 9001:2008**

This Industrial Adhesives and Tapes Division product was manufactured under a 3M quality system registered to ISO 9001:2008 standards.

# 3M

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