



Technical Data Sheet November 2015

3M™ Scotchlite™ Reflective Material Transfer Films

Description

3M™ Scotchlite™ Reflective Material – Transfer Films are designed for use on safety garments and in athletic and casual wear. When properly used, Scotchlite reflective material – transfer films help enhance the visibility of the wearer in nighttime or low-light conditions when illuminated by a light source such as headlights, by returning the light back toward the original source and reaching the automobile driver’s eye. Scotchlite reflective material – transfer films are composed of wide angle, exposed retroreflective lenses bonded to a heat activated adhesive. Some products contain a plastic liner to protect the adhesive side that must be removed before lamination and a paper liner to protect the retroreflective side during handling. Scotchlite reflective material – transfer films are available in home wash and industrial wash constructions.

3M™ Scotchlite™ Reflective Material					
Product Number	Adhesive (Heat Activated)	Home Wash ¹	Industrial Wash ¹	Flame Resistant	Recommended for Occupational Apparel ²
5510 Segmented Home Wash Trim 5510M Segmented Home Wash Trim	Polyester	X			X
5530 Segmented Industrial Wash Trim	Polyester	X	X		X
5535 Segmented Flame Resistant Trim	Polyester	X		X	X
5807 Custom Cuttable Transfer Film	Polyester	X			X
8711 Silver Graphic-Ready Transfer Film	Polyurethane	X			X
8712 Silver Transfer Film³	Polyurethane	X			X
8725 Silver Transfer Film and 8725LL Linerless Silver Transfer Film^{3,4}	Polyester	X			X
8726 Silver Transfer Film and 8726LL Linerless Silver Transfer Film⁴	Polyester	X			X
8735 Flame Resistant Transfer Film	Polyester	X		X	X
8786 Fluorescent red-orange Transfer Film	Polyester				
8787 Fluorescent lime-yellow Transfer Film	Polyester				
9720 Silver Industrial Wash Transfer Film	Polyester	X	X		X
9740 Industrial Wash Flame Resistant Transfer Film	Polyester	X	X	X	X

3M™ Scotchlite™ Reflective Material – 8710 Silver Transfer Film has been terminated. Please contact your local 3M Representative for the best replacement product for your application.

¹See Care and Maintenance Instructions section for Home Wash and Industrial Wash conditions

²Certified to an occupational or industrial clothing standard such as ANSI/ISEA 107-2010 American National Standard for High Visibility Safety Apparel and Headwear or CAN/CSA Z96-09 High Visibility Safety Apparel. Customers should contact 3M Technical Service regarding certifications to specific standards.

³3M™ Scotchlite™ Reflective Material – 8712 Silver Transfer Film and 3M™ Scotchlite™ Reflective Material – 8725 Silver Transfer Film have “3M” imaged on their silver surface.

⁴“LL” denotes that transfer film is sold without a liner on the reflective or adhesive surfaces

Retroreflective Performance

The coefficient of retroreflection (R_A , in cd/lux/m^2) of 3M™ Scotchlite™ Reflective Material is measured by methods based on either of the following retroreflective intensity testing procedures:

ASTM E809-02 and E810-03 (R_A)

CIE 54.2:2001 (R')

Reflected color of Scotchlite reflective material – transfer films is white.

Retroreflective performance data were generated by 3M and are based on testing new product. The R_A values listed in the following tables were measured at $+5.0^\circ$ entrance and 0.2° observation angles.

It is important to note that use, wear, laundering, and environmental conditions will affect performance. Please contact your 3M representative for proposed product specifications.

Product Certification

ANSI/ISEA 107-2010 and CAN/CSA Z96-09

The following 3M™ Scotchlite™ Reflective Material – Transfer Films have certificates available for the ANSI/ISEA 107-2010 American National Standard for High-Visibility Safety Apparel and Headwear for Level 2 retroreflective performance and meet the requirements for CAN/CSA Z96-09 High Visibility Safety Apparel. 3M™ Scotchlite™ Reflective Material that is certified to ANSI/ISEA 107-2010 will also meet the requirements for retroreflective material in ANSI/ISEA 207-2010 American National Standard for High-Visibility Public Safety Vests.

3M™ Scotchlite™ Reflective Material					
Product Number	Daytime Color	Initial Average R_A^5	Minimum R_A^6	Washing Cycles ⁷	Dry-Cleaning Cycles ⁸
5510 Segmented Home Wash Trim 5510M Segmented Home Wash Trim	Silver	>330	330	75	30
5530 Segmented Industrial Wash Trim	Silver	>330	330	100	50
5535 Segmented Flame Resistant Trim	Silver	>330	330	65	30
5807 Custom Cuttable Transfer Film	Silver	500	330	50	30
8711 Silver Graphic-Ready Transfer Film	Silver	500	330	25	25
8712 Silver Transfer Film	Silver	500	330	25	25
8725 Silver Transfer Film and 8725LL Linerless Silver Transfer Film	Silver	500	330	50	30
8726 Silver Transfer Film and 8726LL Linerless Silver Transfer Film	Silver	450	330	50	30
8735 Flame Resistant Transfer Film	Silver	500	330	50	50
9720 Silver Industrial Wash Transfer Film	Silver	500	330	50	50
9740 Industrial Wash Flame Resistant Transfer Film	Silver	500	330	50	0

⁵Measured by 3M on new product at $+5.0^\circ$ entrance and 0.2° observation angles

⁶ANSI/ISEA 107-2010 minimum coefficient of retroreflection for Level 2 retroreflective material

⁷ISO 6330 Method 2A at 60°C (140°F) and $R_A \geq 100 \text{ cd/lux/m}^2$ (home wash)

⁸ISO 3175-2 Method 9.1 and $R_A \geq 100 \text{ cd/lux/m}^2$

NFPA and CAN/CGSB

The following Scotchlite reflective material – transfer films are flame resistant and certified to NFPA and CAN/CGSB standards as components for fire fighting and technical rescue clothing and equipment, when applied to compliant fabrics such as certain aramids, modacrylics, and FR treated cottons. These standards include: NFPA 1971 Standard on Protective Clothing and Equipment for Structural Fire Fighting and Proximity Fire Fighting, 2007 edition; NFPA 1977 Standard on Protective Clothing and Equipment for Wildland Fire Fighting, 2005 Edition; NFPA 1951 Standard on Protective Ensembles for Technical Rescue Incidents, 2007 Edition, NFPA 2112-2007: Standard on Flame-Resistant Garments for Protection of Industrial Personnel Against Flash Fire, CAN/CGSB 155.22-97 Fireline Workwear for Forest Firefighters. See the Physical Performance section for specific test methods used to evaluate heat and flame resistance.

3M™ Scotchlite™ Reflective Material				
Product Number	Daytime Color	Initial Average R _A ⁵	NFPA 1971 Minimum R _A	Fluorescent NFPA 1971 Sec. 8.46.4.2
5535 Segmented Flame Resistant Trim	Silver	>330	100	No
8735 Flame Resistant Transfer Film	Silver	500	100	No
9740 Industrial Wash Flame Resistant Transfer Film	Silver	500	100	No

⁵Measured by 3M on new product at +5.0° entrance and 0.2° observation angles

Not Certified for Occupational Use in the U.S.

The following 3M™ Scotchlite™ Reflective Material products are not certified to a specific standard for occupational workwear in the United States. The products may be regulated or conform to standards in other parts of the world. The products offer other features such as fluorescence for daytime visibility and printing. Test methods listed in the standards are used to evaluate the performance of these products. Please consult the website in the country of interest through 3M.com for more information on regional standards or contact Technical Service for additional assistance with product selection.

3M™ Scotchlite™ Reflective Material		
Product Number	Daytime Color	Initial Average R _A ⁵
8786 Fluorescent red-orange Transfer Film	Fluorescent red-orange	175
8787 Fluorescent lime-yellow Transfer Film	Fluorescent lime-yellow	175

⁵Measured by 3M on new product at +5.0° entrance and 0.2° observation angles

Other Standards

Scotchlite reflective material products are used globally. Please contact your local 3M representative for more information on certification to other high visibility standards such as ISO20471 and AS/NZS 1906.

3M™ Scotchlite™ Reflective Material – Transfer Films are not certified for marine safety applications requiring IMO type approval. 3M™ Scotchlite™ Reflective Materials – SOLAS Grade Products have this type of certificate.

Physical Performance

Scotchlite reflective material – transfer films will meet or exceed the following specifications as noted. All R_A values are at +5.0° entrance angle and 0.2° observation angle. (See product certificates on website for testing laboratory and test date.)

3M™ Scotchlite™ Reflective Material		
Physical Performance	Test Method	Approved Products
Retroreflectivity: (Initial)	ANSI/ISEA 107-2010, Level 2 (Table 5)	Listed under Product Certification–ANSI/ISEA 107-2010
Abrasion: $R_A \geq 100$	EN 530 Method 2, 5000 cycles	Listed under Product Certification–ANSI/ISEA 107-2010
Flexing: $R_A \geq 100$	ISO 7854 Method A, 7500 cycles	Listed under Product Certification–ANSI/ISEA 107-2010
Cold Fold: $R_A \geq 100$	ISO 4675, -20 °C (-4 °F)	Listed under Product Certification–ANSI/ISEA 107-2010
Temperature Cycle: $R_A \geq 100$	12 hours @ 50 °C (122 °F); 20 hours @ -30 °C (-22 °F)	Listed under Product Certification–ANSI/ISEA 107-2010
Wash: $R_A \geq 100$	ISO 6330 Method 2A, @ 60 °C (140 °F) number of cycles listed	Listed under Product Certification–ANSI/ISEA 107-2010
Dry-Clean: $R_A \geq 100$	ISO 3175-2 Method 9.1, number of cycles listed	Listed under Product Certification–ANSI/ISEA 107-2010
Wet Reflectivity: $R_A \geq 100$	ANSI/ISEA 107-2010, Appendix A; NFPA 1971; NFPA 1977; NFPA 1951	Listed under Product Certification–ANSI/ISEA 107-2010 Listed under Product Certification–NFPA
Flame Resistance ⁹ :	ASTM D6413 char length \leq 4 inches after flame < 2 seconds	Listed under Product Certification–NFPA
Heat Resistance ⁹ : cannot melt, drip, separate or ignite after 5 minutes @ 260 °C (500 °F)	NFPA 2112; NFPA 1971; NFPA 1977; NFPA 1951; CGSB 155.20; CGSB 155.22	Listed under Product Certification–NFPA
Convective Heat ⁹ : $R_A \geq 100$	10 minutes @ 140 °C (285 °F)	Listed under Product Certification–NFPA
Arc Thermal Performance Value ⁹ :	ATPV \geq 5 cal/cm ²	Listed under Product Certification–NFPA

⁹Only when applied to compliant fabrics such as certain aramids, modacrylics, and FR treated cottons

Performance

While use of 3M™ Scotchlite™ Reflective Material enhances visibility, no reflective material can guarantee absolute visibility, particularly in adverse weather conditions. Performance will vary depending upon actual use, exposure conditions and maintenance. Customers should be aware that 3M presents a Scotchlite reflective material product portfolio that offers a range of product attributes, and users should test the reflective material on their finished garments to satisfy conformance to their own requirements.

3M recommends that all customers, in accordance with good manufacturing practices, establish an ongoing quality system which includes maintaining lot/roll identification throughout the garment production process. Customers should implement continuous testing throughout their production and on their finished garments that reflects their garment needs.

Please visit our website, Scotchlite.com for new or updated technical literature as well as contacting your local 3M Personal Safety Division Technical Service.

Application Instructions

Whenever two or more pieces of 3M™ Scotchlite™ Reflective Material – Transfer Films are used together on a single surface or as a set, they should be matched to ensure uniform daytime color and nighttime retroreflectivity. All high visibility safety garments should be constructed in accordance with the appropriate standard(s).

Cutting – Die-cutting is recommended, although it can also be hand-cut or guillotined. For Scotchlite reflective material – transfer films with a white paper liner, the protective white paper liner should not be used as the carrier when applying (laminating) plotter cut and weeded images; the exposed liner may adhere to certain fabrics at recommended lamination temperatures. For these applications 3M™ Scotchlite™ Reflective Material – 5807 Custom Cuttable Transfer Film is recommended.

Heat Lamination

1. Work on a flat surface where uniform heat and pressure can be applied. Avoid applying film over seams and stitches.
2. Remove adhesive side liner (if that product has one), exposing dry adhesive. Do not remove reflective side liner. See Table below to determine which liner is adhesive side liner.
3. Place Scotchlite reflective material – transfer film on substrate with the adhesive side down and apply heat and pressure as described in the table below. Place a non-stick slip sheet between the platen and laminating surface to prevent any excess adhesive transfer contamination.
4. Allow application to cool to room temperature before removing the liner covering the reflective side (if that product has one). Place application on a flat surface and remove the paper liner by lifting one corner and pulling (about 45° angle) in a continuous, smooth manner. Some products may not have a reflective side liner; see Table on following page for information.

Additional Precautions for Heat Lamination

1. Do not exceed lamination temperatures listed below as the paper liner may become difficult to remove. If high temperatures are required for bond durability, follow lamination steps 1-3 using recommended temperature, remove paper liner, and then laminate again at the higher temperature (using a non-stick slip sheet to protect reflective surface).
2. The lamination temperature, time and pressure listed below should be used as a guide. Each substrate and reflective film combination should be tested to determine the best set of conditions that will meet customer requirements.
3. Other lamination methods, such as roll to roll, heat fusing and HF welding can also be used. The proper temperature, time and pressure conditions must be tested for each fabric to assure adequate adhesion and physical performance.
4. Many fabrics can be used as lamination substrates; however, some substrates such as nylons and fabrics treated with a durable water repellent (DWR) finish are difficult to adhere to. 3M™ Scotchlite™ Reflective Material – Fabric is recommended for the best adhesion. If Scotchlite reflective material – transfer film is desired, then continuous testing should be done to ensure acceptable adhesion is maintained as input materials may vary. For specific application assistance, contact 3M Technical Service.
5. 3M™ Scotchlite™ Reflective Material – 8711 Silver Transfer Film and 3M™ Scotchlite™ Reflective Material – 8712 Silver Transfer Film perform best when laminated to woven polyester and polyester blend fabrics. They should not be used on knitted T-shirts or 100% cotton fabrics where good adhesion is required for extended use.
6. The reflective surface of 3M™ Scotchlite™ Reflective Material can be difficult to adhere to and caution is required when applying other materials to it. If you are laminating a 3M™ Scotchlite™ Reflective Material – Transfer Film to the surface of Scotchlite reflective material, then testing is recommended to ensure the adhesion meets the customer's specifications. It is also recommended that continuous testing should be done to ensure acceptable adhesion is maintained throughout the manufacturing process. If acceptable adhesion cannot be achieved, then contact your local Technical Service for assistance.

3M™ Scotchlite™ Reflective Material – Transfer Films					
Product Number	Adhesive Side Liner	Reflective Side Liner	Temperature	Dwell Time (seconds)	Line Pressure
5510	None	Blue polyester	175-190 °C (350-375 °F)	10-20	Firm (30-40 psi)
5510M	None	Blue polyester	175-190 °C (350-375 °F)	10-20	Firm (30-40 psi)
5530	None	Green polyester	175-190 °C (350-375 °F)	10-20	Firm (30-40 psi)
5535	None	Blue polyester	175-190 °C (350-375 °F)	20	Firm (30-40 psi)
5807	None	Polyester	165-177 °C (325-350 °F)	10-20	Firm (30-40 psi)
8711	Paper	None	165-190 °C (325-375 °F)	10-20	Firm (30-40 psi)
8712	Rose polyethylene	Paper	165-190 °C (325-375 °F)	10-20	Firm (30-40 psi)
8725	None	Paper	165-177 °C (325-350 °F)	10-20	Firm (30-40 psi)
8725LL	None	None	165-177 °C (325-350 °F)	10-20	Firm (30-40 psi)
8726	None	Paper	165-177 °C (325-350 °F)	10-20	Firm (30-40 psi)
8726LL	None	None	165-177 °C (325-350 °F)	10-20	Firm (30-40 psi)
8735	None	None	175-190 °C (350-375 °F)	20	Firm (30-40 psi)
8786	None	Paper	165-177 °C (325-350 °F)	10-20	Firm (30-40 psi)
8787	None	Paper	165-177 °C (325-350 °F)	10-20	Firm (30-40 psi)
9720	None	None	165-177 °C (325-350 °F)	10-20	Firm (30-40 psi)
9740	None	None	175-190 °C (350-375 °F)	20	Firm (30-40 psi)

Printing

Screen Printing – Images may be printed on the surface of some Scotchlite reflective material – transfer films. All inks should be continuously tested to ensure acceptable adhesion in the event of changes occurring in the manufacturing process or composition of the ink. Prior to printing, wiping the surface with a soft cloth lightly dampened with isopropyl alcohol may help ink adhesion. Printed areas will not be retroreflective. Please refer to 3M Technical Bulletin “Recommendations for Screen Printing Inks for 3M™ Scotchlite™ Reflective Material – Transfer Films, Pressure Sensitive Adhesive Films, Fabrics and Trims” for ink and application recommendations.

Handling Precautions

1. Most Scotchlite reflective material – transfer films contain an aluminum layer as part of their construction. Blemishing of this aluminum layer can occur if the paper carrier is removed and the front surface of the product has direct contact from hands during application and is then exposed to hot and humid conditions, greater than 26.7 °C (80 °F) and greater than 70% relative humidity, for a period of weeks. These blemishes do not affect performance of the product. Please refer to 3M Technical Bulletin “Care Guidelines to Reduce Staining on 3M™ Scotchlite™ Reflective Material.”
2. 3M™ Scotchlite™ Reflective Material – Transfer Films may not be compatible with some polyvinyl chloride (PVC, vinyl) films, especially those containing phosphate plasticizers. It is possible that some plasticizers might be able to migrate into the reflective material, making the reflective surface soft and sticky. We recommend that substrates always be tested prior to production to ensure that they meet your specific needs. For alternate products and additional information, please refer to 3M Technical Bulletin “Plasticizer Migration in 3M™ Scotchlite™ Reflective Material – 8712 Silver Transfer Film and Related Products.”
3. Fabrics finished with dyes containing sulfur compounds should not be used with 3M™ Scotchlite™ Reflective Material – 9720 Silver Industrial Wash Transfer Film, 3M™ Scotchlite™ Reflective Material – 9740 Industrial Wash Flame Resistant Transfer Film and 3M™ Scotchlite™ Reflective Material – 5530 Segmented Industrial Wash Trim. Exposure to sulfur compounds in dyes or in the environment will darken the retroreflective material and may affect retroreflectivity.

Care and Maintenance Instructions

Important: Test each application according to appropriate care instructions required for the finished product. Actual life of 3M™ Scotchlite™ Reflective Material depends on cleaning methods and wear conditions.









Home Wash Guidelines

Home laundering means using a top or front loading consumer type home washing machine with a consumer detergent at moderate water temperatures (up to 60 °C, 140 °F). Garment finishing such as tumble drying at high temperatures can limit garment life and should be considered as part of the cleaning process.

If bleach is needed, only non-chlorine bleach should be used. High alkaline treatments such as stain removal products should not be used. Garment care label guidelines need to consider the garment fabric as well as the recommendations for garment components such as retroreflective trim. 3M™ Scotchlite™ Reflective Material – 8786 Fluorescent red-orange Transfer Film and 3M™ Scotchlite™ Reflective Material – 8787 Fluorescent lime-yellow Transfer Film should not be machine wash or dry cleaned, as this may result in a significant decrease in reflective performance.

Care label recommendations for Scotchlite reflective material – transfer films are below unless noted otherwise:

 Dry-clean, normal cycle  Non-chlorine bleach when needed

3M™ Scotchlite™ Reflective Material			
Product	Wash	Dry	Iron
8711 Silver Graphic-Ready Transfer Film 8712 Silver Transfer Film	 Machine wash warm, 40 °C (105 °F)	 Tumble dry low	 Cool iron, 110 °C (230 °F)
8735 Flame Resistant Transfer Film 9740 Industrial Wash Flame Resistant Transfer Film 5510 Segmented Home Wash Trim 5510M Segmented Home Wash Trim 5530 Segmented Industrial Wash Trim 5535 Segmented Flame Resistant Trim 5807 Custom Cuttable Transfer Film 8725 Silver Transfer Film 8725LL Linerless Silver Transfer Film 8726 Silver Transfer Film 8726LL Linerless Silver Transfer Film 9720 Silver Industrial Wash Transfer Film	 Machine wash hot, 60 °C (140 °F)	 Tumble dry low	 Cool iron, 110 °C (230 °F)
8786 Fluorescent red-orange Transfer Film 8787 Fluorescent lime-yellow Transfer Film	 Do not wash  Do not dry-clean		

Industrial Wash Guidelines

Industrial laundering means regularly washing large amounts of clothing in a relatively short amount of time, with large machines (> 25 kg loads), aggressive detergent chemistry (pH 10.5 – 12), and high wash temperatures (up to 85 °C, 185 °F). Garment finishing (tumble dry or tunnel finish) can limit garment life and should be considered as part of the cleaning process. Using harsher cleaning conditions than those recommended may significantly reduce product performance. The following 3M™ Scotchlite™ Reflective Material – Transfer Films are suitable for applications that will be exposed to industrial laundering:

- 3M™ Scotchlite™ Reflective Material – 5530 Segmented Industrial Wash Trim**
- 3M™ Scotchlite™ Reflective Material – 9720 Silver Industrial Wash Transfer Film**
- 3M™ Scotchlite™ Reflective Material – 9740 Industrial Wash Flame Resistant Transfer Film**

Industrial wash guidelines for Scotchlite reflective material – transfer films are:

3M™ Scotchlite™ Reflective Material	
Washing	
Special instructions:	Stain treatment wash processing may reduce life of Scotchlite reflective material – transfer films.
Wash chemistry:	Lower pH (nearer to neutral) and lower active alkalinity will increase the lifetime performance of the retroreflective material. Actual lifetime will be dependent upon the detergent system and dosage level. Do not use solvenated surfactants. Do not use chlorine or perborate bleach. Low to medium alkaline, high surfactant detergents are preferred.
Maximum wash temperature:	75 °C (165 °F)
Break/suds cycles:	Less than 20 minutes total
Drying	
Tunnel dry:	Maximum inlet temperature of 160 °C (320 °F) Drying time not to exceed 7 minutes. Fabric temperature not to exceed 135 °C (275 °F)
Tumble dry:	Maximum exhaust temperature 90 °C (195 °F)
Pressing:	Do not exceed 150 °C (300 °F)

Product Availability

Scotchlite reflective material – transfer films are available in rolls with the following standard width and lengths:

3M™ Scotchlite™ Reflective Material			
Product Number	Roll Width	Width Tolerance	Standard Roll Length
5510 Segmented Home Wash Trim	50.8 mm (2 in.)	± 0.5 mm (± 0.02 inch)	100 m (109 yd)
	60 mm (2.36 in.)		200 m (218 yd)
	70 mm (2.76 in.)		
5510M Segmented Home Wash Trim 5530 Segmented Industrial Wash Trim 5535 Segmented Flame Resistant Trim	50.8 mm (2 in.)	± 0.5 mm (± 0.02 inch)	100 m (109 yd)
			200 m (218 yd)
5807 Custom Cuttable Transfer Film	304.8 mm (12 in.)	± 0.5 mm (± 0.02 inch)	5 m (5.47 yd)
	482.6 mm (19 in.)		25 m (27.34 yd)
	609.6 mm (24 in.)		50 m (55 yd)
All others	< 150 mm (< 6 in.)	Standard ± 1 mm (± 0.04 in.) Special ± 0.5 mm (± 0.02 in.)	100 m (109 yd) 200 m (218 yd)
	150 mm ≤ w < 900 mm (6 in. ≤ w < 36 in.) ≥ 900 mm (≥ 36 in.)	0 mm to + 4 mm (0 in. to 0.16 in.)	50 m (55 yd) 100 m (109 yd)
		+ 3 mm to + 7 mm (+ 0.12 in. to + 0.28 in.)	50 m (55 yd) 100 m (109 yd)
5510 Segmented Home Wash Trim	50.8 mm (2 in.)	± 0.5 mm (± 0.02 inch)	100 m (109 yd)
	60 mm (2.36 in.)		200 m (218 yd)
	70 mm (2.76 in.)		
5510M Segmented Home Wash Trim 5530 Segmented Industrial Wash Trim 5535 Segmented Flame Resistant Trim	50.8 mm (2 in.)	± 0.5 mm (± 0.02 inch)	100 m (109 yd)
			200 m (218 yd)
5807 Custom Cuttable Transfer Film	304.8 mm (12 in.)	± 0.5 mm (± 0.02 inch)	5 m (5.47 yd)
	482.6 mm (19 in.)		25 m (27.34 yd)
	609.6 mm (24 in.)		50 m (55 yd)
All others	< 150 mm (< 6 in.)	Standard ± 1 mm (± 0.04 in.) Special ± 0.5 mm (± 0.02 in.)	100 m (109 yd) 200 m (218 yd)
	150 mm ≤ w < 900 mm (6 in. ≤ w < 36 in.) ≥ 900 mm (≥ 36 in.)	0 mm to + 4 mm (0 in. to 0.16 in.)	50 m (55 yd) 100 m (109 yd)
		+ 3 mm to + 7 mm (+ 0.12 in. to + 0.28 in.)	50 m (55 yd) 100 m (109 yd)

Order and Product Information

To order 3M™ Scotchlite™ Reflective Material Products contact 3M Personal Safety Division Customer Service at 800-328-7098.

Storage and Shelf Life

Store in a cool, dry area and use within one year after date of receipt. Store rolls in original shipping cartons. Ensure that the lot/roll identification remains with product rolls. Return partially used rolls to the carton or suspend horizontally through the core. Cut pieces should be stored flat.

Important Notice

WARRANTY, LIMITED REMEDY AND DISCLAIMER: 3M warrants that 3M™ Scotchlite™ Reflective Material that is stored, maintained and used in accordance with 3M's written instructions will meet the applicable 3M product specifications. 3M MAKES NO OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OR CONDITION OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY IMPLIED WARRANTY OR CONDITION ARISING OUT OF A COURSE OF DEALING, CUSTOM OR USAGE OF TRADE. If any Scotchlite reflective material does not conform to this warranty, then the sole and exclusive remedy is, at 3M's option, replacement of the 3M product or refund of the purchase price.

LIMITATION OF LIABILITY: Except where prohibited by law, 3M will not be liable for any loss or damage arising from the 3M product, whether direct, indirect, special, incidental or consequential, regardless of the legal theory asserted, including warranty, contract or strict liability.

PRODUCT USE: Because of the variety of factors that can affect the use and performance of Scotchlite reflective material, user is solely responsible for evaluating the product and determining whether it is fit for a particular purpose and suitable for user's method of application. User is solely responsible for determining the proper amount and placement of the product. While reflective products enhance visibility, no reflective product can ensure visibility or safety under all possible conditions. 3M may change the product, specification and availability of the product as improvements are made; therefore, user should contact 3M for latest information before specifying the product.



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