



3M™ Scotchlite™ Reflective Material - Fabrics

Description

3M™ Scotchlite™ Reflective Material - Fabrics are designed for use on safety, athletic and casual garments. They are composed of wide-angle, exposed, retroreflective lenses bonded to a durable fabric backing. When properly used, these materials 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 eyes.

Summary of Product Details							
3M™ Scotchlite™ Reflective Material	Initial Typical Brightness (R _A) ^d	Minimum Initial Brightness (R _A) ^d	Wash ^a			Flame Resistance	Fabric Backing
			Home ^b Cycles	Dry-clean ^c Cycles	Industrial Washable		
8906 Silver Fabric Trim	500	>330	30				95% polyester / 5% cotton printed with 3M trademarks
8910 Silver Fabric ^e	500	>330	60	30			65% polyester / 35% cotton printed with 3M trademarks
8925 Silver Fabric	500	>330	75	25			65% polyester / 35% cotton
8932 Silver Flame Resistant Fabric	500	>330	50	15		Yes	100% FR treated cotton
8935 Silver Industrial Wash Flame Resistant Fabric	500	>330	50	30	Yes	Yes	100% FR treated cotton
8986 Fluorescent red-orange Flame Resistant Fabric	175	None				Yes	94% polyester / 6% nylon tricot knit
8987 Fluorescent lime-yellow Flame Resistant Fabric	175	None				Yes	94% polyester / 6% nylon tricot knit
8986NFPA Fluorescent red-orange Flame Resistant Fabric	175	>100	Not Applicable	Not Applicable		Yes	100% FR treated cotton
8987NFPA Fluorescent lime-yellow Flame Resistant Fabric	175	>100	Not Applicable	Not Applicable		Yes	100% FR treated cotton
9910 Silver Industrial Wash Fabric	500	>330	100	50	Yes		100% polyester printed with 3M trademarks and product number
9925 Silver Industrial Wash Fabric	500	>330	100	50	Yes		100% polyester printed with 3M trademarks and product number
9945 Silver Industrial Wash Flame Resistant Fabric	500	>330	100	50	Yes	Yes	100% Aramid printed with 3M trademarks and product number

a. See Care Instructions section for Home Wash and Industrial Wash.

b. ISO 6330 Method 6N at 60°C (140°F) and R_A ≥ 100 (Home Wash).

c. ISO 3175-2 and R_A ≥ 100 (Dry Cleaning with Perchloroethylene).

d. Measured by 3M on new product at +5.0° entrance and 0.2° observation angles. Results are measured in R_A (cd/lux/m²).

e. 3M™ Scotchlite™ Reflective Material- 8910 Silver Fabric is available with or without "3M" imaged surface.

Product Certification

The following 3M™ Scotchlite™ Reflective Material, as listed in the table below, meet the requirements of the listed standards. Current certificates are available at [3M.com/Scotchlite](https://www.3m.com/Scotchlite) or by request. Some products have OEKO-TEX® certification as well.

Certifications								
Product Number	Visibility Standards		NFPA					CGSB
	ANSI/ISEA 107	CSA Z96	1970 (1971)	1970 (1975)	1950 (1951)	1950 (1977)	2112	155.22
Edition Year	2020	2022	2025	2025	2025	2025	2023	2014 (R2024)
8906	x	x						
8910	x	x						
8925	x	x						
8932	x	x		x			x	
8935	x	x	x	x	x	x	x	x
8986 ^a								
8987 ^a								
8986NFPA			x		x	x		
8987NFPA			x		x	x		
9910	x	x						
9925	x	x						
9945	x	x	x		x	x	x	x

^a 8987 and 8986 are not certified to a standard but meet the fluorescent requirement per NFPA 1970 9.8.1.4.2

Official name of standards listed above:

- ANSI/ISEA 107-2020 American National Standard for High-Visibility Safety Apparel
- CSA Z96:2022 High-Visibility Safety Apparel
- NFPA 1970-2025 Standard on Protective Ensembles for Structural and Proximity Firefighting, Work Apparel, Open-Circuit Self-Contained Breathing Apparatus (SCBA) for Emergency Services, and Personal Alert Safety Systems (PASS)
- NFPA 1950-2025 Standard on Personal Protective Equipment for Technical Rescue Incidents, Emergency Medical Operations, and Wildland and Urban Interface Firefighting
- NFPA 2112-2023 Standard on Flame-Resistant Garments for Protection of Industrial Personnel Against Flash Fire
- CAN/CGSB 155.22-2014 (Reconfirmed 2024) Fireline Workwear for Wildland Firefighter

3M™ Scotchlite™ Reflective Material products are used globally. Please contact your local 3M representative for more information on certification to other high-visibility apparel and flame resistance standards.

Physical Performance

These 3M™ Scotchlite™ Reflective Materials will meet or exceed the following performance specifications as noted. It is important to note that cleaning methods, use, wear conditions, maintenance and environmental conditions will affect performance. See product certificates on [3M.com/Scotchlite](https://www.3m.com/Scotchlite) for testing laboratory and test date information.

Physical Performance	Test Method
Retroreflectivity (initial): $R_A \geq$ requirement listed in ANSI 107-2020 or CSA Z96:2022	ASTM E808 and ASTM E809
Abrasion: $R_A \geq 100$	ISO 12947-2, 5000 cycles
Flexing: $R_A \geq 100$	ISO 7854 Method A, 7500 cycles
Cold Fold: $R_A \geq 100$	ISO 4675, -20°C (-4°F)

Physical Performance	Test Method
Temperature Cycle: $R_A \geq 100$	12 hours @ 50°C (122°F) 20 hours @ -30°C (-22°F)
Wash: $R_A \geq 100$	ISO 6330 Method 6N, @ 60°C (140°F) number of cycles listed on page 1
Dry-Clean: $R_A \geq 100$	ISO 3175-2 (number of cycles listed on page 1)
Wet Reflectivity: $R_A \geq 100$	ANSI/ISEA 107-2020 Clause 10.4.6; CSA Z96:2022 Clause 7.4.9 or NFPA1970 Section 9.8.1.4.3
Flame Resistance ^a : <100 mm (4") char length, <2 second after flame	ASTM D6413
Heat Resistance ^a : Cannot melt, drip, separate or ignite	ASTM F2894: 5 minutes @ 260°C (500°F)
Convective Heat ^a : $R_A \geq 100$	NFPA 1970 Section 9.1.5 After 10 minutes @ 140°C (285°F)

a. Only applies to the retroreflective products certified to NFPA 1970 (1971), NFPA 1950 (1951), 1950 (1977) or CAN/CGSB155.22 standards (listed under Certifications).

Application Instructions

Whenever two or more pieces of 3M™ Scotchlite™ Reflective Material are used together on a single surface or as a set, they should be matched to ensure uniform daytime color and nighttime retroreflectivity.

Cutting

The material can be cut in various ways including die-cut, hand-cut or guillotined.

Sewing

For the best results, sew in place using a lockstitch with no more than 12 stitches per inch (2.54 cm), and no less than 5/64 inch (2 mm) from the edge of the reflective fabric. Use appropriate thread for flame resistant applications.

Printing

Screen Printing – Images maybe printed on the surface of some 3M™ Scotchlite™ Reflective Material. 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.

Essential Information

While the use of 3M™ Scotchlite™ Reflective Material enhances visibility, no retroreflective material can guarantee absolute visibility, particularly in adverse weather conditions. Performance will vary depending upon actual use, exposure conditions, and maintenance. Exposure to contaminants (i.e. corrosive) may decrease the retroreflectivity. For optimal retroreflectivity, reflective apparel exposed to contaminants should be promptly clean and laundered in accordance with its care instructions. Customers should be aware that 3M presents a 3M™ Scotchlite™ Reflective Material product portfolio that offers a range of product attributes, and users should test the retroreflective material on their finished garments to satisfy conformance to their own requirements. All high visibility safety apparel items should be constructed in accordance with the appropriate standard(s).

3M™ Scotchlite™ Reflective Material can contain an aluminum layer as part of its construction. Blemishing of this aluminum layer can occur if the front surface of the product has direct contact from hands during application and is then exposed to hot and humid conditions for a period of weeks (greater than 26.7°C (80°F) and greater than 70% relative humidity). These blemishes do not affect performance. Please see the [3M Technical Bulletin - Care Guidelines to Reduce Staining of 3M™ Scotchlite™ Reflective Material](#) for more information.

3M recommends that all customers, in accordance with good manufacturing practices, establish an ongoing quality system which includes maintaining lot/roll identification, and implementing continuous testing that reflects their garment needs throughout their production process. Every substrate should be tested for overall compatibility to 3M™ Scotchlite™ Reflective Material products.

3M™ Scotchlite™ Reflective Material products are not certified for marine safety applications requiring IMO type approval.

Most substrates are suitable for the application of reflective materials. There are designs that should be avoided to prevent premature abrasion. For example, when using seam sealing tapes on reflective trim, disproportionate flexing will occur on the reflective material located between the sealing tapes. This may result in increased abrasion of the unsupported center section. Adding a stiffer fabric to re-enforce the center section will reduce this abrasion.

Care Instructions

- IMPORTANT NOTE**
- Test each application according to appropriate care instructions required for the finished product. Actual life of 3M™ Scotchlite™ Reflective Material will depend on cleaning methods, use, wear conditions, maintenance and environmental 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). Drying methods 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.

Care Label Recommendations										
Product	Wash		Dry		Iron		Dry-Cleaning		Bleach	
8906		Machine wash warm, 40°C (105°F)		Tumble dry low		Cool iron, 110°C (230°F)		Do not dry-clean		Non-chlorine bleach when needed
8910		Machine wash warm, 40°C (105°F)		Tumble dry low		Medium iron, 150°C (300°F)		Dry-clean, normal cycle		Non-chlorine bleach when needed
8925 8932 8932 8935 9910 9925 9945		Machine wash hot, 60°C (140°F)		Tumble dry low		Medium iron, 150°C (300°F)		Dry-clean, normal cycle		Non-chlorine bleach when needed
8986NFPA 8987NFPA		Machine wash warm, 40°C (105°F)		Tumble dry low		Cool iron, 110°C (230°F)		Do not dry-clean		Non-chlorine bleach when needed
8986 8987		Do not wash								

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). Drying methods (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. Refer to the table on page one for the retroreflective materials suitable for applications that will be exposed to industrial laundering.

Industrial Wash Guidelines	
Washing	
Special instructions:	Stain treatment wash processing may reduce life of 3M™ Scotchlite™ Reflective Material
Wash chemistry:	Lower pH (nearer to neutral) and lower active alkalinity may increase the lifetime performance of the retroreflective material. Actual lifetime will be dependent upon the detergent system and dosage level. Do not use solvated 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/Pressing	
Tunnel dry:	• Inlet temperature should not exceed 160°C (320°F). • Do not overdry. The drying time should not exceed 7 minutes. • Reflective material temperature should not exceed 135°C (275°F) at any time during drying. • The distance between the garments during the finishing process should be in a range of 70 – 100mm (2.75 in. – 4 in.).
Tumble dry:	Maximum exhaust temperature 90°C (195°F)
Pressing:	Do not exceed 150°C (300°F)

Product Availability

3M™ Scotchlite™ Reflective Material – Fabrics are available in rolls of various widths and lengths. Check with your distributor for availability or on [3M.com/Scotchlite](https://www.3M.com/Scotchlite). Availability may vary by region.

Storage and Shelf Life

Store in a cool (4 to 27°C, 40 to 80°F), dry area (less than 70% relative humidity) and use within two years of date of receipt from 3M. Store rolls in original shipping cartons. Return partially used rolls to the carton or suspend horizontally through the core. Cut pieces should be stored flat. Ensure that the lot/roll identification remains with product rolls and cut pieces.

Contact Us

For current technical literature and technical support, go to [3M.com/Scotchlite](https://www.3M.com/Scotchlite), or call Customer Service at 1-800-328-1667. To purchase, go to [3M.com/Scotchlite](https://www.3M.com/Scotchlite) and click on Support for a list of our distributors.

Important Notice

Technical Information: The technical information, guidance, and other statements contained in this document or otherwise provided by 3M are based upon records, tests, or experience that 3M believes to be reliable, but the accuracy, completeness, and representative nature of such information is not guaranteed. Such information is intended for people with knowledge and technical skills sufficient to assess and apply their own informed judgment to the information. No license under any 3M or third party intellectual property rights is granted or implied with this information.

Product Selection and Use: Many factors beyond 3M's control and uniquely within user's knowledge and control can affect the use and performance of reflective material in a particular application. As a result, customer is solely responsible for evaluating the product and determining whether it is appropriate and suitable for customer's application, including conducting a workplace hazard assessment and reviewing all applicable regulations and standards (e.g., OSHA, ANSI, etc.), as well as determining the proper amount and placement of reflective material. While reflective material can enhance visibility, no reflective product can ensure visibility or safety under all possible conditions. Failure to properly evaluate, select, and use a 3M product in accordance with all applicable instructions and with appropriate safety equipment, or to meet all applicable safety regulations, may result in injury, sickness, death, and/or harm to property. 3M may change the product, specification, and availability; therefore, customer should contact 3M for latest information before specifying the product.

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