



Scotchlite™ Electronic Cuttable (E.C.) Film Series 1170

Description

3M™ Scotchlite™ E.C. Film Series 1170 is durable, transparent color film with a transparent, pressure sensitive adhesive.

Scotchlite E.C. film series 1170 is available as roll goods for use on friction feed and flatbed computer aided sign-making systems. This film has been specifically developed for optimal cutting, weeding, lifting and transfer features when used with computer aided signmakers. Film series 1170 is durable and dimensionally stable. It is intended for use over the following Scotchlite Reflective Sheetings: 3870, 3970G or 5870 and applied to non-mobile, FLAT ONLY SIGNS. This film series is not recommended or warranted for vehicle applications. This product cannot be screen printed. It may be used for "on premise" directional or advertising signs.

3M Commercial Graphics Division products are not tested against automotive manufacturers' specifications and are therefore not warranted for use in fabricating graphics for automotive OEM's.

Health and Safety

Refer to the container labels and Material Safety Data Sheets for health and safety information on the products referenced in this bulletin. If necessary, for 3M Products, you may contact the 3M Corporate Emergency telephone number, 612-733-1110, and ask for Operator 55.

Product Line

Film	1171 Yellow 1172 Red 1174 Orange 1175 Blue 1177 Green 1178 Black (opaque) 1179 Brown
Adhesive	Clear pressure sensitive
Application temperature:	
Maximum	100°F (38°C)
Minimum	50°F (10°C)
Liner	78# white kraft liner

Roll Sizes

E.C. film series 1170 is available in the following standard roll sizes:

- 36" x 50 yds
- 48" x 50 yds

Other roll widths and sizes available on special order.

Film Liner

This film has a paper liner designed to aid the cutting process and the removal of the film weed after cutting.

Effective Performance Life

When fabricated and applied in accordance with 3M recommended procedures, and exposed vertically or within ± 10° from vertical, the following performance may be expected:

Vertical Exposure

Reflective Sheetings		Yrs
3870, 5870	Hi-Intensity	10
3970G	Diamond Grade	7

Performance statements are based upon field experience and exposure tests conducted throughout the United States. Performance will be determined by substrate selection and preparation, exposure conditions and maintenance of the markings.

Fabrication - Cutting and Application Procedures

Important Note: It is recommended that inside radius corner fonts be used when cutting E.C. film series 1170. Read and follow the manufacturer's operating manual carefully for proper use of cutting equipment.

- Adjust knife pressure to cut clearly through the film without cutting into the liner. A 30 degree blade works best. Spacing between letters or numbers should be adjusted to the aesthetic preference of the user. Consult the operating manual for the cutting equipment instructions on how to regulate spacing. A clean cutting blade is required. To remove adhesive buildup from the knife blade, use a soft cloth dampened with mineral spirits, isopropyl alcohol or 3M Natural Cleaner.

Note: Do not cut at high speed on variable speed machines.

The minimum height recommended for text is two (2) inches to avoid overflow and achieve maximum aesthetic value. Maintain a sharp knife blade. Serrated edges on radius cuts indicates a dull blade.

2. Because of the unique construction of the film avoid folding or sharply bending the sheet when cutting and handling film. This may cause film to crack or release from the liner.
3. After cutting is completed, lay sheets flat, face to face, back to back. Always store sheets in this manner until the sheeting has been weeded and transfer tape has been applied to sheeting.
4. Use a stripping tool designed for weeding film that has a blunt (not a sharp) edge.
5. After weeding is completed, store sheets flat, face to face, back to back until transfer tape is applied.
6. SCPS-2 Prespacing Tape is recommended for all film. Other transfer tapes are not recommended.
7. Transfer tape can be applied either by hand using a plastic squeegee or through a hand squeeze roll laminator. If applying the transfer tape by hand, care must be taken to always squeegee from the center to the outside in both directions. If applying the transfer tape through a hand squeeze roll applicator, the "lead" edge must be cut square and fed into the nip very carefully to avoid wrinkles in the 3M™ Scotchlite™ E.C. Film Series 1170.

Note: Application temperature range of the product is 50 -100 degrees F (10-38 degrees C).

8. E.C. film series 1170 may be applied either before or after the reflective sheeting has been applied to the substrate. This film can be applied to any of the reflective sheetings listed in the description heading.

The use of a hand squeeze roll laminator is recommended for application, to ensure satisfactory results. When applying use the "split liner method" - start in the middle of the sheet and remove half the liner to ensure proper alignment.

The film can also be applied using the detergent and water method. This method is outlined in Instruction Bulletin 5.7 and is particularly recommended when assembling multi-color graphics utilizing E.C. film series 1170. It is also important to note that joints between pieces of the film of the same or different color should always be made using butt splices. Do not overlap. This is done to avoid color changes and bridging of film at the splice.

9. After E.C. film series 1170 and the sheeting have been applied, remove the transfer tape by carefully pulling the tape at an angle of approximately 180 degrees.
10. When the transfer tape has been removed, or reroll the sign by passing it through the laminator to ensure good adhesion.

Shelf Life

Store in a cool, dry area [65 to 75 degrees F (18 to 24 degrees C), 30-50% relative humidity] and use within one year from date of receipt.

Related 3M Literature

Listed below is related 3M Technical Literature that may be of interest.

Subject	Instruction Bulletins
Design of markings	2.1
Scoring and cutting	4.1
Surface preparation	5.1, 5.2
Application	5.7, 5.13
Storage, maintenance, and removal	6.5
Warranty of Products Bulletin	

Warranty and Limited Remedy

The following is made in lieu of all other express or implied warranties, including any implied warranty of merchantability or fitness for a particular purpose: These sheetings are warranted to be free of defects in materials and manufacture and to meet the specifications stated in 3M's Product Bulletin for the same warranty period as the reflective sheeting to which it is applied. 3M will replace or refund the price of any 3M materials that do not meet this warranty within the specified time periods. See 3M's Warranty of Products Bulletin, which explains the details of 3M's Matched Component System.

These remedies are exclusive. In no case shall 3M be liable for any other direct or indirect damages or loss, including without limitation any incidental, special, or consequential damages, or any labor charges incident to the removal or replacement of finished graphic or product.



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