



Gerber High Performance Series 280i Reflective

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DESCRIPTION

Gerber HP Series 280i is a high performance reflective film made exclusively for Gerber by 3M. Series 280i is a durable, dimensionally stable film with a clear, pressure-sensitive adhesive designed to withstand a variety of severe weather and handling conditions. It is available in white only on a 78lb. double-sided poly coated liner.

Series 280i is an EDGE READY™ material that has been optimized for printing on the Gerber EDGE®, EDGE 2, and EDGE FX™.

INTENDED APPLICATIONS

Series 280i is suitable for a wide range of commercial and industrial applications including vehicles, exterior and interior signage, window markings, etc. It can be used on flat surfaces with or without rivets, or moderate curved surfaces.

PERFORMANCE LIFE – (UNPRINTED)

The exterior performance life of Series 280i is based upon field experience and exposure tests conducted throughout the United States. When the graphics are processed and used according to Gerber recommendations, they should have the performance life shown in the charts below. The actual performance depends on the following conditions:

- ◆ Selection and preparation of substrate
- ◆ Application methods
- ◆ Exposure conditions
- ◆ Cleaning methods

Vertical Exposure (<i>face of graphic is vertical 90° +/- 10°</i>)		
Series 280i	U.S. ¹ years	Desert SW ² Years
Signs Only		
Unprinted, applied to first surface	5	3
Vehicles Only		
Unprinted, applied to first surface	7	5

1. For exterior performance life statements outside of the United States, contact Gerber Scientific Products, Inc.

2. The United States Desert Southwest area includes Arizona, New Mexico, and the desert areas of California, Nevada, Utah, and Texas.

SHELF LIFE AND STORAGE

Apply film within one year of receipt. Printed graphics should also be applied within one year. Film and printed graphics (with or without premask) should be kept in a clean area free from excessive moisture and direct sunlight. Maintain temperature at less than 100°F (38°C).

Use a paper interleaf between layers of stacked or rolled printed materials. Do not stack printed graphics face to face.

MAINTENANCE

To clean printed graphics, use a mild, non-abrasive soap with a soft cloth or sponge. Avoid using alcohol-based cleansers or soaps containing grit or abrasives. Automated vehicle washing systems that use rotary cleaning brushes should also be avoided.

PRODUCT CONSTRUCTION

Property	Description
Thickness (film and adhesive)	7 to 8 mils (0.18 to 0.20mm)
Film color	White
Adhesive	clear, pressure sensitive
Liner	78 pound, white kraft paper
Application substrates	For flat surfaces with or without rivets, or moderate curved surfaces
Application surfaces	Flexible signage, glass, metal, acrylic, polycarbonates, fiberglass, painted surfaces
Removability	Permanent

PRINTING

Series 280i has been optimized for use with the EDGE and EDGE 2 and can be used with GerberColor Finishing (GCF), GerberColor Spot (GCS), GerberColor Process (GCP) and GerberColor Transparent (GCT) foils. **GerberColor Process and Transparent foils are especially ideal for use with Series 280i because the transparent characteristic of these foils allows the retroreflectivity of the film to show through.**

Gerber standard tack application tape is required to be used as the transfer carrier for all printed graphics.

PROTECTING GRAPHICS

Gerber Scientific Products, Inc. offers several products that are designed to protect vinyl and printed graphics.

Abrasion Guard™ is a clear, top-coat GerberColor foil designed to protect graphics from moderate contact or handling. Matte Clear is a matte-finish, top-coat GerberColor foil designed to reduce glare and protect graphics with a matte finish.

Gerber UVGuard G5 is a high gloss graffiti-resistant 1 mil, clear, polyester laminating film designed to further expand the resistance to weathering of graphics printed (or cut) on Gerber Series 280i with Gerber Digital Color Printing Systems and GerberColor™ Foils. Graphics printed and applied under normal conditions may not require the additional application of Gerber UVGuard G5.

Gerber UVGuard 9 is a glossy 1 mil, clear, polyvinylfluoride laminating film designed to further expand the resistance to weathering of graphics printed (or cut) on Gerber Series 280i films with Gerber Digital Color Printing Systems and GerberColor™ Foils. Gerber UVGuard 9 has the highest protection from UV fade. Graphics printed and applied under normal conditions may not require the additional application of Gerber UVGuard 9.

CUTTING

Series 280i can be cut on any 15" Gerber plotter using a 30° blade. When using a GS15 plus™ plotter, a 45° tangential blade is recommended. See FF# 5252.

Excess film should be weeded within 24 hours of cutting to minimize the effect of adhesive flow.

SUBSTRATE PREPARATION

Before applying your graphic, wash the surface of your substrate with warm water and detergent. Do not use soaps or other cleaners with lotions or creams as they will leave a residue. Thoroughly rinse the surface and allow it to dry completely.

Saturate a clean paper towel with a solvent-based cleaner and wipe the substrate surface. Be certain to follow all manufacturer safety guidelines when using any solvent. Dry the surface with a lint-free paper towel before the solvent evaporates.

If applying to glass, wipe the surface with a 2-to-1 mixture of water and isopropyl alcohol. Glass temperatures can vary across the surface. These temperature variations can produce stresses, which may cause the glass to break. Use caution when applying to glass.

Some polycarbonate substrates may weaken when certain vinyl films are applied to them. Because of this possibility, the user will need to determine if safety items such as helmets, safety shields, and some windshields are compatible with their vinyl's adhesive.

Many paint systems (e.g. two-part urethane) and some plastic substrates will outgas if they are not fully cured. Outgassing can cause permanent bubbling in most films; substrates should be tested for outgassing prior to final application. Plastics should be dried at 150°F (66°C) for 24 hours prior to application to help avoid outgassing.

APPLICATION TECHNIQUES

Only dry application method should be used with Series 280i and panels should be overlapped by 0.1 inches. Gerber standard tack application tape is recommended for all GERBER EDGE printed applications.

PHYSICAL PROPERTIES

Property	English Units	Metric Units
Dimensional Stability	0.015in	0.4mm
Service temperature range	-30° to +200°F	-34° to +93°C
Tensile Strength	11 lbs/in at 73°F	2.0 kg/cm at 23°C
Minimum Application Temperature	55°F(Flat w/o rivets) 60°F(Flat w/ rivets)	13°C(Flat w/o rivets) 16°C(Flat w/ rivets)

ADHESION CHARACTERISTICS (24 HOURS AFTER APPLICATION)

Substrate	English Units	Metric Units
Aluminum, anodized	5 lbs/in	0.09 kg/cm
Aluminum, etched	5 lbs/in	.09kg/cm
FRP	3.9 lbs/in	0.7kg/cm
Fruehauf prepainted panels	4.5 lbs/in	.08 kg/cm

RETRO REFLECTION

At a -4° entrance angle and a 0.2° observation angle, unprinted film series 280I has the following typical coefficient of retro reflection. It is expressed in candlepower per foot-candle per square foot (candela/lux/square meter) per ASTM E 810.

The entrance angle is formed by a light beam striking the surface at a point and at a line that is perpendicular to the surface at the same point.

An observation angle is formed by the light beam striking the reflective surface and returning to the observer. From 800 feet (249 meters), a motorist normally views a graphic at 0.2° angle.

Typical Coefficient of Retro reflection	100
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CHEMICAL RESISTANCE

Series 280i Reflective film is resistant to mild acids, mild alkalis and salts. Material has excellent water resistance.

CONTACT INFORMATION

For help with questions concerning Gerber products, please call your distributor or Gerber Customer Service at 1-800-222-7446 or (860) 643-1515. Or visit us on the web at www.gspinc.com

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