

## Technical Datasheet

### Description

REFLOMAX GLODIAN™ CALRO™-FB™ series is product of Micro-Prismatic Retro-Reflective Material. Micro-Prism Type Material is consisting of millions of durable micro-prisms formed on flexible, UV-stabilized glossy polymeric film.

GLODIAN™ CALRO™-FB™ series is a high-quality, digital printable, durable, good tensile strength, type of fabric backing and metalized Micro-Prism side for use on construction and maintenance, utility and incident management applications. It makes the object with GLODIAN™ CALRO™-FB™ series highly visible in foul weather and even in wet condition enhancing the safety of drivers in the road.

### Product Construction

REFLOMAX GLODIAN™ CALRO™-FB™ consists of a smooth surface, high gloss, abrasion and weather resistant UV-stabilized microprismatic retroreflective layer

### Front

1. Front : PVC
2. Backing : Fabric (FB)

### Reflective

The Retroreflective performance is measured in accordance with the procedure defined in CIE 54:1982. Measures values are averages taken from 90° orientation, apart unless stated differently. The 0° orientation is to be taken as downweb of REFLOMAX supplied rolls.

The values are stated as coefficients of Retroreflection, RA and the unit is cd/lux/m2

### Daytime Color

REFLOMAX GLODIAN™ CALRO™-FB™ to the daytime color requirements in Table 2 when tested in accordance with ASTM D 4956 and available in silver.

### Weatherability

REFLOMAX GLODIAN™ CALRO™-FB™ series has a 1 year warranty under vertical outdoor exposure (color fastness).

GLODIAN™ GLODIAN™ CALRO™-FB™ series is warranted to be free of defects in materials and manufacture at the time of shipment and to meet the specifications stated in this Product Guidance. If Flexible High intensity Sheeting is proven not to have met the Warranty on its shipment date, then a buyer's exclusive remedy, and REFLOMAX's sole obligation at REFLOMAX's option, will be refund or replacement of the sheeting.

The failure to meet the REFLOMAX Warranty must be solely the result of the Product, manufacturing defects.

REFLOMAX has no obligation under the warranty if a failure is caused by the following.

- Improper fabrication, handling, maintenance or installation
- Non-vertical applications where the sign face is more than ±10% from vertical.
- Failure of substrate.
- Loss of adhesion due to incompatible or improperly prepared substrate.
- Exposure to chemicals, abrasion and other mechanical damage.
- Collisions, vandalism or malicious mischief.

REFLOMAX reserves the right to determine the method of replacement, and any replacement Product will have the remainder of the original Product's unexpired REFLOMAX Warranty. Claims made under this warranty will be honored only if

- The Sign was dated upon completion of fabrication(date) using a permanent method (sticker, permanent marker or crayon, metal stamp, etc.).
- REFLOMAX is notified of a REFLOMAX warranty claim during any applicable warranty period and the owner or fabricator provides the information reasonably required by REFLOMAX to verify if a REFLOMAX Warranty is applicable.

GLODIAN™ CALRO™-FB™ meets the requirements of ASTM D4956, Section 6.4. The material is weather resistant and shows no appreciable cracking, scaling, pitting, blistering, edge lifting, or curling, or more than 0.8 mm (1/32") shrinkage or expansion. Retroreflectivity measurements are conducted after outdoor weathering with an observation angle of 0.20° and entrance angles of -4° and +30°. The minimum coefficient of retroreflection (R<sub>A</sub>) after weathering is 80% of the values specified in Table 1.

When tested in a xenon-arc weatherometer in accordance with ASTM D 4956, REFLOMAX GLODIAN™ CALRO™-FB™ will

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meet or exceed the weathering requirements.

## Solvent Resistance

GLODIAN™ CALRO™-FB™ will not dissolve, blister, or pucker when wiped with a soft cloth wet with kerosene, mineral spirits, turpentine, VM&P Naphtha, 5% HCL NaOH, or methanol.

## Shrinkage

A 9" x 9" (229 mm x 229 mm) specimen of the sheeting with liner is conditioned a minimum of one hour at 23°C (73°F) ± 2°C (3°F) and 50% relative humidity. The liner is then removed and the specimen is placed on a flat surface with the adhesive side up. Ten minutes after the liner is removed and again after 24 hours, the specimen is measured to determine the amount of dimensional change. The specimen will not shrink in any dimension more than 0.8 mm (1/32") in 10 minutes and 3.2 mm (1/8") in 24 hours.

## Application / Processing

GLODIAN™ CALRO™-FB™ was especially developed for traffic control applications. Surfaces to which the material will be applied must be thoroughly cleaned from dust, grease or any contamination which could affect the adhesion of the material. Freshly lacquered or painted surfaces must be completely cured. Plastic surfaces need to be free of any emission. The compatibility of selected substrate should be tested by the user, prior to application of the material. For other applications the user is fully responsible for evaluating the suitability of the product, and for any risks associated with that use.

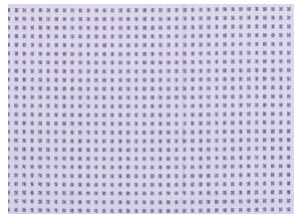
The sheeting should be applied to a smooth, clean, dry surface at temperatures ranging from 10°C (50°F) to 38°C (100°F). Materials must be applied according to Application Instruction.

Table 1, Minimum Coefficient of Retroreflection

| Item        | Observation Angles | Entrance Angles | Typical RA |
|-------------|--------------------|-----------------|------------|
| CLARO-FB-01 | 0.2°               | -4°             | 160        |

\*all values have units of cd/ft<sup>2</sup> (cd/lx/m<sup>2</sup>)

## Film Pattern



## Application Instruction

### Processing instructions for REFLOMAX GLODIAN™ CLARO™-FB™

The information within this document is based on our knowledge, experience and application tests. Its purpose is to provide suggestions and support to practitioners. GLODIAN™ CALRO™-FB™ is product of Micro-Prism type Retro-Reflective Material. Micro-Prism Type Material is consisting of millions of durable micro-prisms formed on flexible, UV-stabilized glossy polymeric film. GLODIAN™ CALRO™-FB™ is type of High Gloss Pressure Sensitive Adhesive (PSA) and Metallized Micro-Prism side. GLODIAN™ CALRO™-FB™ is producing in a various colors to meet the various needs from many different customers. It makes the objects with GLODIAN™ CALRO™-FB™ highly visible in daytime, nighttime, foul weather and even in wet condition enhancing the safety of drivers in the road. GLODIAN™ CALRO™-FB™ is supple, conformable and can be easily applied to the winding substrate like construction and maintenance, utility and incident management applications, short- middle term traffic signs, warning, construction/work zone information signs. Traffic Control Sign (Tripod Stand sign), etc.

### Size & Packing

|              |   |
|--------------|---|
| Roll Size    | 122cm x 50m (48" x 50yd)                      |
| Packing Size | 1,305mm x 230mm x 240mm (51.4" x 9.1" x 9.4") |
| Net Weight   | 33kg (72.7 lb) per roll                       |
| Gross Weight | 36kg (79.4 lb) per roll                       |

### Storage and Transportation

Store in a cool dry area, preferably at 18°C (64.4°F) -28°C(82.4°F), relative humidity and use within 1 year after date of receipt. Store rolls in their original shipping cartons. Partially used rolls should be returned to their shipping carton. Avoid banding, crating, or stacking signs. Package for shipment in accordance with commercially accepted standards to prevent movement and chafing. Store sign packages indoors on edges. Panels or finished signs must remain dry during shipment and storage. If packaged signs become wet, unpack immediately and allow signs to dry.

Rolled material should be stored in the original carton. The rolls have standard spacers (core plugs) that prevent contact between the roll surface and the carton and thus the formation of pressure marks and surface damage. Please make sure that partly processed rolls are never stored without spacers.

When making the rolls available for processing, it is advisable to use a horizontal suspension system. If the rolls are stored in a vertical, freestanding position, a negative influence on the film's characteristics is not expected. It is crucial to place the roll on the spacer so as to avoid breakage at the edges and contamination.

### Instruction

- 1) Technical data can be changed with product improvement. The above data are the average of test results at the normal test condition.
- 2) While the use of reflective material does greatly enhance visibility, no reflective material can assure absolute visibility, particularly in adverse weather conditions.
- 3) Performance will vary depending upon actual use, exposure conditions and maintenance. Users should test reflective material to satisfy conformance to their own requirement.
- 4) The acceptable temperature range to use GLODIAN™ CALRO™-FB™ application without any possible problem is -15~70 °C.

## IMPORTANT NOTICE

### Durability

The durability of GLODIAN™ CALRO™-FB™ series and finished product using them will depend upon substrate selection and preparation, compliance with recommended application procedures, geographic area, exposure conditions, and maintenance. Maximum durability of series GLODIAN™ CALRO™-FB™ can be expected in applications subject to vertical exposure on stationary objects when processed and applied to properly prepared aluminum according to REFLOMAX's recommendations. Periodic sign inspection and regular sign replacement are strongly recommended in order for sign owners to establish their own effective service life expectation beyond any durability warranty, if provided.

### Exposure

Exposure to severe or unusual conditions can shorten the performance of such applications. Signs in mountainous areas that are covered by snow for prolonged periods may also have reduced durability. Atmospheric conditions in certain geographic areas may result in reduced durability.

### **Splice**

There could be one splice per roll and additional meter will be provided in case of roll with splice.

### **Warranty**

No warranty is given for purposes other than those listed in the Technical Datasheet or which are not processed according to REFLOMAX's processing and handling instructions. The durability of the signs will depend on a variety of factors, including but not limited to substrate selection and preparation, compliance with recommended application guidelines, geographic area, exposure conditions and maintenance of the product and finished sign. Sign failures caused by the substrate or improper surface preparations are not the responsibility of Reflomap. Please refer to the full warranty document available at [www.reflomap.com](http://www.reflomap.com) for detailed information.

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