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Specifications

Introduction

REFLOMAX GLODIAN™ TAC™ is a Type III & V high performance metalized flexible micro prismatic reflective sheeting designed to use for flexible delineator post, barrier mounted delineators and guardrail delineators.
REFLOMAX GLODIAN™ TAC™ complies with the requirements in the ASTM D4956 for Type III & V sheeting and meets the minimum coefficient of retroreflection as shown in Table 1, when tested in accordance with ASTM E810, "Standard Test Method for Coefficient of Retroreflection of Retroreflective Sheeting Utilizing the coplanar Geometry".

Daytime Color

Daytime color requirements are as listed in Table 2 are when tested in accordance with ASTM D 4956 and available color is silver.

Nighttime Color

Nighttime color requirements are as listed in in Table 3 when tested in accordance with ASTM D 4956 and ASTM E811. The sheeting shall be measured using CIE illuminant A. an observation angle of 0.33° and an entrance angle of +5°.

Impact Resistance

Ambient Temperature: After conditioning a sample for 24 hours at 23°C (73°F) ± 2°C (3°F) and 50% relative humidity, with the sheeting applied by an impact of a 1.82 kg (4 lb) weight with a 16 mm (5/8") rounded tip dropped from a 100 in-lb (11.3 N-m) setting on a Gardner variable impact tester, IG-1120, as per ASTM D4956, section S2.2.1. The sheeting shall show no cracking or delamination outside the actual area of impact.

Weatherability

REFLOMAX GLODIAN™ TAC™ meets the requirements specified in the ASTM D4956, Section 6.4. The material is weather resistant and shows no significant cracking, scaling, pitting, blistering, edge lifting, or curling, or more than 0.8 mm (1/32") shrinkage or expansion. Retro-reflectivity shall be measured after outdoor weathering with an observation angle of 0.20° and entrance angles of -4° and +30°. The minimum coefficients of retroreflection (RA) after weathering shall be 80% of the values as listed in Table 1.
When tested in a xenon-arc weatherometer in accordance with the ASTM D 4956, REFLOMAX GLODIAN™ TAC™ fully meets the weathering requirements.

Composition

REFLOMAX GLODIAN™ TAC™ is composed of a smooth surface, high gloss, abrasion and weather resistant UV-stabilized micro-prismatic retroreflective layer

Front Material

PVC

Release Liner

Paper, silicone coated one side, 0.075mm

Adhesive

The adhesive is protected by a release liner which can be removed just by peeling, without soaking in water or other solvents. The adhesive guarantees such a bonding power that a 50 mm (1") strip shall support a 0.79 kg (1 3/4 pound) weight for 5 minutes without the strip peeling for a distance of 50 mm (2") or more, as specified in the ASTM D4956, section 7.5 adhesion test.

Reflective

REFLOMAX GLODIAN™ TAC™ complies with the requirements in the ASTM D4956 for Type III & V sheeting and meets the minimum coefficient of retroreflection as shown in Table 1, when tested in accordance with ASTM E810, "Standard Test Method for Coefficient of Retroreflection of Retroreflective Sheeting Utilizing the coplanar Geometry".

Flexibility

REFLOMAX GLODIAN™ TAC™ meets the flexibility requirements of the ASTM D4956, section 6.7 and S2.2.2. The sheeting is so flexible enough to show no cracking when bent in one second time around a 3.2 mm (1/8") diameter mandrel.

Solvent Resistance

REFLOMAX GLODIAN™ TAC™ does 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) sample of the sheeting with liner is conditioned for at least one hour at 23°C (73°F) ± 2°C (3°F) and 50% R.H. The liner is then released, and the sample is placed on a flat surface with the adhesive side up. Ten minutes after the liner is removed and again after 24 hours, the sample is measured to determine the amount of dimensional change. The sample 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.

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Application | Processing

Ensure to apply the sheeting onto 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 (R_A)*

Observation Angles	Entrance Angles	Silver / White
0.20°	-4°	700
0.20°	30°	400
0.50°	-4°	160
0.50°	30°	75

*Unit of all values is expressed in cd/fc/ft² (cd/lx/m²)

Table 2 Color Specification Limits (Daytime)

COLOR	Chromaticity Coordinates*								Luminance Factor (Y%)	
	1		2		3		4			
	x	y	x	y	x	y	x	y	Min	Max
Silver / White	0.303	0.300	0.368	0.366	0.340	0.393	0.274	0.329	15	--

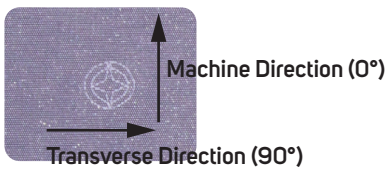
The four pairs of chromaticity coordinates determine the acceptable color in respect of the CIE 1931 Standard Colorimetric System measured with Standard Illuminant D65.

Table 3 Color Specification Limits (Nighttime)

COLOR	Chromaticity Coordinates*							
	1		2		3		4	
	x	y	x	y	x	y	x	y
Silver / White	0.475	0.452	0.360	0.415	0.392	0.370	0.515	0.409

The four pairs of chromaticity coordinates determine the acceptable color in respect of the CIE 1931 Standard Colorimetric System measured with Standard Illuminant A.

Film Logo Pattern



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Application Instruction

Processing instructions for REFLOMAX GLODIAN™ TAC™

The data herein are based upon our knowledge, experience and application tests. Its purpose is to provide the practitioners with suggestions and support. REFLOMAX GLODIAN™ TAC™ is a product from Micro-Prism type Retro-Reflective Material. Micro-Prism Type Material is composed of millions of durable micro-prisms formed on flexible, UV-stabilized glossy polymeric film.
GLODIAN™ TAC™ is type of High Gloss Pressure Sensitive Adhesive (PSA) and Metallized Micro-Prism side. GLODIAN™ TAC™ is available a wide variety of colors to meet the customers' needs. It makes the objects with GLODIAN™ TAC™ highly visible in daytime, nighttime, foul weather and even in wet condition, which enhances the safety of drivers in the road. REFLOMAX GLODIAN™ TAC™ is a supple and conformable product. It can be easily applied to the winding substrate like Traffic Cones and Lane Dividers (Delineator Post), and very durable and hardwearing.

Size & Package

- **Roll Size** 92cm x 50m (36.2" x 50yd)
- **Package** 1,020mm x 280mm x 280mm (40" x 11" x 11")
- **Net Weight** 23.12kg (50.9 lb) per roll
- **Gross Weight** 25.12kg (55.4 lb) per roll

Storage

Rolled material should be stored in the original carton. The rolls have standard spacers (core plugs) so that can prevent contact between the roll surface and the carton, which may result in 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, it can have a negative effect on the film's characteristics. It is crucial to place the roll on the spacer avoid breakage at the edges or contamination.
Store in a cool dry place, preferably at 18°C (64.4°F) -28°C(82.4°F), 30-60% R.H. and use within one (1) year after arrival date.
Store rolls in their original shipping cartons. Partially used rolls should be returned to their shipping carton.

Instructions

Application
- REFLOMAX GLODIAN™ TAC™ should be applied at room temperature ranging from 18°C (64.4°F) to 25°C(77°F).
- For the Delineator Post application, which is major application, REFLOMAX GLODIAN™ TAC™ should be stick on and finished in over-wrapping at least 2cm from the starter point in the correct position (no longer narrow and wider than its position).
- REFLOMAX GLODIAN™ TAC™ should be preserved at least 24hours aging after application of Delineator Post or others before its installation at site.

GLODIAN™ TAC™ is suitable to be attached onto aluminum, iron, stainless, polar polymer (PVC, TPU), but unfit for the non-polar polymer (PP, PE).
The recommendable outdoor temperature range is -15°C ~70°C.
- The suitability of the intended care process must be determined by the end user.

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Important

Durability

The durability of REFLOMAX GLODIAN™ TAC™ 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 REFLOMAX GLODIAN™ TAC™ series can be guaranteed in applications with vertical exposure on stationary objects when processed and applied to properly prepared aluminum in compliance with REFLOMAX's recommendations. Periodic sign inspection and regular sign replacement are strongly recommended for sign owners to ensure their own effective service life and warranted durability, if provided.

Substrate

The user must determine the suitability of any nonmetallic sign backing suiting its intended use. Applications to unprimed, excessively rough or non-weather resistant surfaces can deteriorate the performance of such applications.

Exposure

Exposure to severe or unusual conditions can deteriorate the performance of such applications. Signs in mountainous areas where are covered by snow for a long time may shorten the durability. Atmospheric conditions in certain geographic areas may result in reduced durability.

Splice

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

Warranty

No warranty is given for the purposes other than those listed in the Specifications Sheet or which are not processed according to REFLOMAX's processing and handling instructions. The durability of the signs will depend on many factors such as substrate selection and preparation, compliance with recommended application guidelines, geographic area, exposure conditions and maintenance of the product and finished sign. Imperfect sign caused by the substrate or improper surface preparations are not the responsibility of REFLOMAX.
For further information, please see the full warranty instrument available at www.reflomax.com.

GLODIAN™ is registered trademark of REFLOMAX Co., Ltd.