

Glodian™ HIP

High Intensity Prismatic Reflective Sheeting

Glodian™, HIP is a prismatic reflective sheeting with high level of retroreflectivity suitable for providing information to the drivers in various traffic situations.

This complies with the specification ASTM D 4956-11, Type III and Type IV.

Main application

Traffic signs, Delineation devices etc.

Feature

Long service life, screen printable, easy for computer cutting

Pressure sensitive adhesive type

10years durability for white and colors

3years durability for fluorescent colors

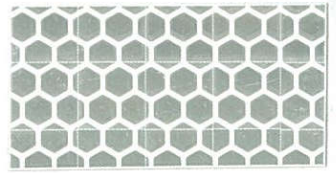
Size : 122cm x 50yd per 1roll

Packing : 1,295mm x 230mm x 240mm per 1box has 1roll

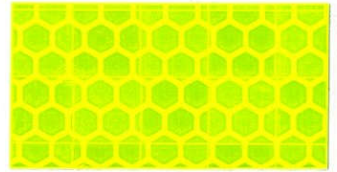
G.weight : 32kgs per 1box

For further information, visit www.reflomax.com or send an email.

01
White



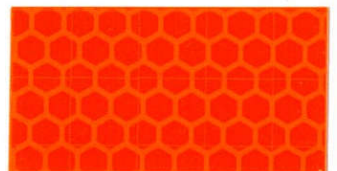
02
F.Yellow-Green



03
Yellow



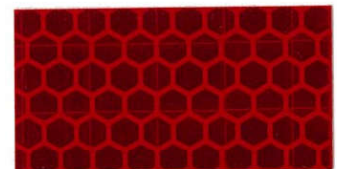
04
F.Orange



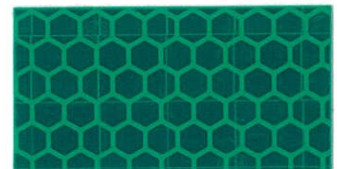
05
Orange



07
Red



09
Green



11
Blue



15
Brown



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Product Guidance

REFLOMAX GLODIANTM HIP Series is a non-metalized microprismatic reflective sheeting designed for production of reflective durable traffic control signs, work zone devices and delineators that are exposed vertically in service.

Since highly retroreflective microprisms are formed by hard polymer on flexible, UV-stabilized polymeric film REFLOMAX GLODIANTM HIP Series are very durable and hardwearing so that they keep the initial reflective performance for a long time.
It complies ASTM D4956-11, Type III and Type IV.

Colored backing film is sealed on the backside of GLODIANTM reflective film and GLODIANTM HIP Series is Pressure Sensitive Adhesive type.

1. Color

10 colors are available
(White, F.Yellow-Green, Yellow, F.Orange, Orange, Red, Green, Blue, Brown, F.Yellow)

2. Retroreflective Performance

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.

Item	Obs. Angles	Ent. Angles	Typical Ra	Standard Ra
HIP-01 White	0.2°	-4°	400	360
		30°	190	170
	0.5°	-4°	165	150
		30°	80	72
HIP-03 Yellow	0.2°	-4°	300	270
		30°	150	135
	0.5°	-4°	120	110
		30°	60	54
HIP-05 Orange	0.2°	-4°	160	145
		30°	75	68
	0.5°	-4°	70	60
		30°	31	28
HIP-07 Red	0.2°	-4°	72	65
		30°	33	30
	0.5°	-4°	30	27
		30°	15	13
HIP-09 Green	0.2°	-4°	55	50
		30°	27	25
	0.5°	-4°	23	21
		30°	11	10
HIP-11 Blue	0.2°	-4°	32	30
		30°	15	14
	0.5°	-4°	13.5	13
		30°	6.5	6

3. Size and Packing

Roll Size : 122cmx50yd
Packing : One roll per one carton box
SQ.M per Roll : 55.7 m²

4. Physical Properties (Test Method - ASTM D4956-11)

- ① Liner Removal : No Break, No Tear
- ② Adhesion : 33.2mm
- ③ Impact Resistance : No Crack
Note) Drop Weight : 1.0kg
- ④ Flexibility : No Crack
- ⑤ Shrinkage : 2.33mm / 1.83mm
Note) Length / Width

5. Adhesion


REFLOMAX GLODIANTM HIP Series has a pressure-sensitive adhesive that is recommended for room temperature application. Room temperature application is defined as 18°C~25°C

6. Storage

Store in a cool dry area 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

7. Note

Technical data can be changed with product improvement. The above data are the average of test results at the normal test condition.
While the use of reflective material does greatly enhance visibility, no reflective material can assure absolute visibility, particularly in adverse weather conditions.
Performance will vary depending upon actual use, exposure conditions and maintenance. Users should test reflective material to satisfy conformance to their own requirement.



INDUSTRIAL TESTING LABORATORY

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PRELIMINARY TEST REPORT II

Report Date: 09 December 2011

Project Name: Reflomax Glodian HIP Type IV Retroreflective Sheeting

Submitted by: Reflomax
Geumcheon-gu, Seoul, 153-772 Korea

Test Laboratory: Calcoast - ITL
Emeryville, CA 94608

Products Tested: Glodian White, Yellow, Orange (Workzone?), Green, Red, Blue, Brown, Fl. Yellow-Green (Workzone?), Fl. Org (Workzone?)
submitted in 48 in. x 2+ yard rolls each

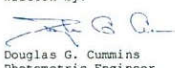
SUMMARY

Specification: ASTM D4956-11a
Sheeting Type IV, Class I Backing

6.2	Coefficient of Retroreflection	.....Passed
6.3	Daytime Color and Luminance	.....Passed
6.4	Outdoor Weathering	.....Not Tested
6.5	Colorfastness (Artificial Accelerated Weathering Based)	.....In progress
6.6	Shrinkage	.....Passed
6.7	Flexibility	.....Passed
6.8	Liner Removal	.....Passed
6.9	Adhesion	.....Passed
6.10	Impact Resistance	.....Passed
6.11	Nighttime Color	.....Passed
S3.	Specular Gloss	.....Passed
S3.	Artificial Accelerated Weathering	.....In progress


* - Dropped for -09 version, tested for backward compatibility to previous versions

Written by:



Douglas G. Cummins
Photometric Engineer


Approved by:



Mark A. Evans
Laboratory Director

Reflomax Glodian HIP D4956-1V 111117-02Ipre1m2.doc

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REPORT NO. : N216-11-00141
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TEST CONDUCTED TEST RESULT

(01) COEFFICIENT OF RETROREFLECTION (ASTM D 4956:2009) : cd/lx · m²

OBSERVATION ANGLE(°)	ENTRANCE ANGLE(°)	COEFFICIENT OF RETROREFLECTION	
		AS RECEIVED	AFTER 2200 h WEATHERING
0.2	-4	478.9	435.4
	30	345.0	316.1
0.5	-4	413.3	361.0
	30	99.9	94.2

NOTE) WEATHERING CONDITION : WEATHER-O-METER, XENON-ARC-LAMP,
120 MIN LIGHT (102 MIN LIGHT, 18 MIN SPRAY + LIGHT),
EXPOSURE FOR 2200 h,
B.P.T : (65 ± 3)°C
IRRADIANCE : 0.35 W/m² @ 340 nm
- INNER FILTER : BOROSILICATE
- OUTER FILTER : BOROSILICATE

(02) CHROMATICITY (ASTM D 4956:2009)

UNEXPOSED	#1
LUMINANCE FACTOR	48.2
CO-ORDINATE x	0.3691
CO-ORDINATE y	0.3254
EXPOSED	
LUMINANCE FACTOR	45.9
CO-ORDINATE x	0.3133
CO-ORDINATE y	0.3311

NOTE) CIE-D₆₅, 2°, 45/0 TYPE
THE SPECIMEN HAD A BLACK UNDERLAY.
MEASURING INSTRUMENT : SPECTROPHOTOMETER CM-2500c(KONICA MINOLTA),
SEE ATTACHED GRAPH.
WEATHERING CONDITION : WEATHER-O-METER, XENON-ARC-LAMP,
120 MIN LIGHT (102 MIN LIGHT, 18 MIN SPRAY + LIGHT),
EXPOSURE FOR 2200 h,
B.P.T : (65 ± 3)°C
IRRADIANCE : 0.35 W/m² @ 340 nm
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The test results contained in this report are limited to results on the samples that is provided by the client and are not necessarily indicative of the qualities of the lot from which the samples was taken or of all products. Results contained in this report are not based on the quality certification of sample by the ITI quality certification program unless specifically requested by the client. Further use of the results of this report is prohibited unless allowed under a separate agreement set forth in an official document that is established between the client identified on this letter and the ITI.
2007. 01. 23 210 × 297mm