

Technical Product Bulletin

Reflexite® VC612 Flexibright™

For livery applications on EMS vehicles
Bulletin #100-31



Product

Reflexite® VC612 Flexibright™ is a tough weather and solvent resistant product designed for rugged outdoor use for livery applications on emergency services vehicles. The material is die cuttable and plotter cuttable, and easy to apply onto smooth painted or unpainted vehicle surfaces. The product does not require edge sealing, and is designed to be especially applicator user friendly and flexible, with potentially single piece removability and the possibility to template to far fewer pieces than other prismatic livery films.

Construction

Reflexite® VC612 Flexibright™ is composed of cube corner (microprism) retroreflective elements integrally bonded to a flexible, smooth-surfaced tough and weather resistant UV stabilized polymeric film. The prism surfaces are coated with a vacuum deposition of aluminium to provide a mirror surface to the prism facets. The resulting material is not more than 0,45mm thick, and comes with an aggressive high-tack pressure sensitive adhesive. It is single layer, with no need for edge sealing.

Colour

Reflexite® VC612 Flexibright™ is available in white, yellow, red, blue, green, fluorescent lime, fluorescent yellow and fluorescent orange. The colour shall be located in the area defined by the chromaticity coordinates and luminance factor provided in Table 1, when measured in accordance with the provisions of CIE No. 15.2. The four pairs of coordinates determine the acceptable colour when measured with standard illuminant D65 using a Hunter ColorFlex.

Reflectivity

Typical values for the coefficient of retroreflection (R') for Reflexite® VC612 Flexibright™ are shown in table 2 when illuminated with CIE standard illuminant A and measured with the provisions of CIE no.54.2. The values are an average of rotation angles 0° and 90°.

Adhesive

The adhesive is protected by a release liner, which shall be removed by peeling, without soaking in water or other solvents.

A 25mm strip shall provide a bond such that it shall support an 800g weight for 5 minutes without the strip peeling for a distance of more than 50mm. When applied to a smooth aluminium surface as specified in the ASTM 4956 adhesion test.

Solvent Resistance

Reflexite® VC612 Flexibright™ material meets the solvent resistance requirements of LS-300C solvent resistance, section 3.6.7, when tested as specified in Table VI, test method 4.6.6.

Shrinkage

A 230mm square specimen of the sheeting with liner shall be conditioned a minimum of 1 hour at 22°C and 50% RH. The liner is then removed and the specimen is placed on a flat surface with the adhesive side up. Then minutes after the liner is removed and again after 24 hours, the specimen is measured to determine the amount of dimensional change. The specimen must not shrink in any dimension more than 0,8mm in 10 minutes and 3,1mm in 24 hours.

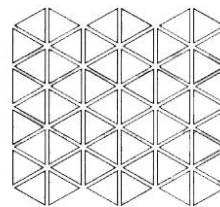
Impact Resistance

Reflexite® VC612 Flexibright™ sheeting shall show no signs of cracking or delamination outside the actual area of impact when it is subjected to an impact of 1,13 N·m generated by a 0,91kg weight with a 16mm rounded tip, as per ASTM D4956.

Flexibility

The sheeting is conditioned for 24 hours at 22°C and 50% RH. The release liner is removed and the sheeting must be sufficiently flexible to show no cracking when bent in one second's time around a 3,1mm diameter mandrel with the adhesive contacting the mandrel.

Film Pattern



Roll Size

Standard rolls are 775mm x 45,7m.

Shelf Life and Storage

The sheeting must be used within 1 year from the shipment date. All rolls including partially used rolls should be stored in original packaging, tightly wound and secured with tape. Store in a clean and dry area, away from direct sunlight at temperatures between 18°C and 28°C.

Application Instructions

Material must be applied when the air and surface temperature is between 10° and 28°C to ensure proper adhesive bonding. Surfaces must be cleaned for all grease, oil, dirt etc. Use a clean cloth and Isopropyl alcohol, or similar, to wipe the surface before application. If any air bubbles are trapped, use a pin to puncture the bubble and a squeegee to push the air towards the pin hole. Please contact Reflexite for complete application instructions.

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Table 1
Colour Specification Limits (daytime)

Colour	Chromaticity Coordinates on CIE diagram*									
	1		2		3		4		Y%	
	x	y	x	y	x	y	x	y	Min	Max
White	0,303	0,300	0,368	0,366	0,340	0,393	0,274	0,329	27,0	---
Yellow	0,498	0,412	0,557	0,442	0,479	0,520	0,438	0,472	15,0	45,0
Green	0,026	0,399	0,166	0,364	0,286	0,446	0,207	0,771	3,0	9,0
Red	0,648	0,351	0,735	0,265	0,629	0,281	0,565	0,346	2,5	12,0
Blue	0,140	0,035	0,244	0,210	0,190	0,255	0,065	0,216	1,0	10,0
Fluo. Lime	0,387	0,610	0,369	0,546	0,428	0,496	0,460	0,540	---	60
Fluo. Yellow	0,479	0,520	0,446	0,483	0,512	0,421	0,557	0,442	---	40
Fluo. Orange	0,583	0,416	0,535	0,400	0,595	0,351	0,645	0,355	---	20

*) The four pairs of chromaticity coordinates determine the acceptable chromaticity when measured with standard illuminant D65

Table 2
Coefficient of Retroreflection* (R_A)

Obs. Angle	Entr. Angle	White	Yellow	Green	Red	Blue	Fl. Lime	Fl. Yellow	Fl. Orange
0.20°	5°	750	525	130	130	55	420	295	200
	30°	375	260	65	65	25	200	145	100
	45°	120	85	20	20	8	70	45	30
0.33°	5°	375	260	65	65	25	200	145	100
	30°	185	130	32	32	13	100	75	50
	45°	60	40	10	10	4	35	25	20
0.50°	5°	110	80	20	20	8	65	45	45
	30°	60	45	10	10	4	33	23	20
	45°	20	14	4	4	1.3	10	7	8
1.00°	5°	28	20	5	5	2	15	11	8
	30°	14	10	2	2	1	8	5	4
	45°	4	3	-	-	-	2	2	2

*) The coefficient of retroreflection (R_A) has units of cd/lux/m²

IMPORTANT NOTICE

All Reflexite products are subject to careful quality control throughout the manufacturing process and are warranted to be of merchantable quality and free from manufacturing defects. Published information concerning Reflexite products is based upon research which the Company believes to be reliable although such information does not constitute a warranty. Because of the variety of uses of Reflexite products and the continuing development of new applications, the purchaser should carefully consider the suitability and performance of the product for each intended use, and the purchaser shall assume all risks regarding such use. All specifications are subject to change without prior notice.

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