ORALITE® Super Bright™ Roll-Up Signs

Description
ORALITE® Super Bright™ Roll-Up Signs are flexible Roll-up sign blanks made from fabric reinforced microprismatic retroreflective sheeting. These sign blanks are suitable for fabrication of retroreflective roll-up construction, maintenance, and incident management applications. All ORALITE® Roll-Up signs are designed to meet the requirements of the Manual on Uniform Traffic Control Devices (MUTCD).

Product Construction
ORALITE® Super Bright™ Roll-Up Signs consist of a high gloss, uv-stabilized microprismatic retroreflective layer welded to a high opacity, heavy-duty fabric-reinforced vinyl. The Roll-Up sign provides high brightness and long-term color and fluorescence retention. This construction will not delaminate, provides outstanding durability, legibility, and long sign life.

Reflectivity
ORALITE® Super Bright™ Roll-Up Signs shall have the minimum coefficient of retroreflection 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
ORALITE® Super Bright™ Roll-Up Signs conform to the daytime color requirements in Table 2 when tested in accordance with ASTM D4956. ORALITE® Super Bright™ Roll-Up Signs are available in white, yellow, orange and fluorescent pink.

Note: The orange version of this product contains a fluorescent component, it is not intended to meet the long term weatherability requirements of a fluorescent product.

Nighttime Color
ORALITE® Super Bright™ Roll-Up Signs conform to the nighttime color requirements in Table 3 when tested in accordance with ASTM D4956, ASTM E3165 and ASTM E811. The sheeting shall be measured using CIE illuminant A. an observation angle of 0.33° and an entrance angle of +5°

Flexibility
ORALITE® Super Bright™ Roll-Up Signs meet the flexibility requirements of ASTM D4956, section 6.7 and S2.2.2. They are sufficiently flexible such that through continuous use, setup and storage, the signs do not show any permanent creasing or delaminating.

Solvent Resistance
ORALITE® Super Bright™ Roll-Up signs 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.

Specular Gloss
ORALITE® Super Bright™ Roll-Up signs shall have an 85° specular gloss of not less than 40 when tested in accordance with ASTM D523.

Impact Resistance
Ambient Temperature: After conditioning a sample of sealed Roll-Up sign for 24 hours at 73° ± 3°F (23° ± 2°C) and 50% relative humidity, subject the sheeting to an impact of a 4 lb (1.82 kg) weight with a 5/8” (16 mm) 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
ORALITE® Super Bright™ Roll-Up Signs meet 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 1/32” (0.8 mm) shrinkage or expansion. Retroreflectivity measurements are conducted after outdoor weathering with an observation angle of 0.20º and entrance angles of -4º and +30º.The minimum coefficient of retroreflection (R_A) after weathering is 50% of the values specified in Table 1.

Enhanced Surface Preparation
ORALITE® Super Bright™ Roll-Up Signs have a unique Enhanced Surface Preparation (ESP), which eliminates the need for a thorough cleaning (e.g. alcohol wipe) prior to screen-printing. It is still good business practice to wipe the surface with a clean, dry tack cloth. Enhanced Surface Preparation allows the use of vinyl graphics using pressure sensitive adhesives. Also, Enhanced Surface Preparation reduces the amount of dust, dirt and other road grime that can stick to ORALITE® Super Bright™ Roll-Up signs.

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Table 1, Coefficient of Retroreflection (RA)*

Observation Angle	Entrance Angle	White	Yellow	Orange	Fl Pink
0.20°	-4°	500	350	200	150
0.20°	30°	200	140	80	60
0.50°	-4°	225	160	90	65
0.50°	30°	85	60	34	25

*all values have units of cd/fc/ft^2 (cd/lx/m^2)

Table 2, Color Specification Limits (Daytime)

Color	Chromaticity Coordinates†										Luminance Factor (Y%)	
	1		2		3		4		5			
	x	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	---
Yellow	0.498	0.412	0.557	0.442	0.479	0.520	0.438	0.472			15	45
Orange	0.558	0.352	0.636	0.364	0.570	0.429	0.506	0.404			10	---
Fl Pink	0.600	0.340	0.450	0.332	0.430	0.275	0.536	0.230	0.644	0.290	25	---

†The four pairs of chromaticity coordinates determine the acceptable color in terms 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
White	0.475	0.452	0.360	0.415	0.392	0.370	0.515	0.409
Yellow	0.513	0.487	0.500	0.470	0.545	0.425	0.572	0.425
Orange	0.595	0.405	0.565	0.405	0.613	0.355	0.643	0.355
Fl Pink	No requirement							

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

IMPORTANT NOTICE

All ORALITE® 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 ORALITE® 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 ORALITE® 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.

WARNING – This product may expose you to chemicals which are known in the State of California to cause cancer and birth defects or other reproductive harm. For more information, go to – www.P65Warnings.ca.gov

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