

Technical Data Sheet



Engineer Grade Retroreflective Sheeting (RST Series)

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OVERVIEW

Engineering Grade Retroreflective Sheeting (RST Series) for permanent signage, is a high-quality, durable, enclosed lens retroreflective material with a pressure sensitive adhesive designed for screen and cut applications.

Engineering Grade Retroreflective Sheeting (RST Series) is an Omni-Directional beaded film. This feature benefits agencies by providing confidence that all signs will perform with uniform visual reflectivity at all sign face orientations.

PERFORMANCE

International	ASTM D4956 Type I
Australia, New Zealand	AS/NZS 1906.1 Class 100
Brazil	ABNT 14644 Tipo I
China	GB/T 18833 Type I
Europe	EN 12899/1 RA1

INCOM recommends the user obtain the current requirements from their local governing agency to ensure product conformance.

CHARACTERISTICS

Construction	High-Gloss Acrylic Retroreflective Film with Glass Microspheres and a permanent pressure-sensitive adhesive protected with a paper liner
Typical Film Caliper	5.5 - 6.5 mils (140 – 165 µm)
Durability	Up to 7 years, vertical exposure only.
Watermark	Does not have a watermark standard. Watermarks may vary due to local regulations. Contact INCOM for details.
Service Temperature	-10°F to +150°F (-23°C to + 65°C)
Min. Application Temperature	65° F (18° C)
Shelf-life	1 year from the date of purchase when stored at 65°–75°F (18°–24°C) 50% ± 5% R.H.

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TABLE A

Minimum Coefficient of Retroreflection (R_A) cd/fc/ft² ($\text{cd}\cdot\text{lx}^{-1}\cdot\text{m}^2$) (ASTM D4956 Type I Sheeting)

Observation Angle	Entrance Angle	White	Yellow	Blue	Green	Red	Brown
0.2°	-4°	70	50	4.0	9.0	14	1.0
	+30°	30	22	1.7	3.5	6.0	0.3
0.5°	-4°	30	25	2.0	4.5	7.5	0.3
	+30°	15	13	0.8	2.2	3.0	0.2

TABLE B

Daytime color specification limits (ASTM D4956)

Colors	1		2		3		4		Luminance Factor Y
	x	y	x	y	x	y	x	y	
White	.303	.300	.368	.366	.340	.393	.274	.329	≥ 27
Yellow	.498	.412	.557	.442	.479	.520	.438	.472	15 to 45
Blue	.140	.035	.244	.21	.19	.255	.065	.216	1.0 to 10
Green	.026	.399	.166	.364	.286	.446	.207	.771	3.0 to 12
Red	.648	.351	.735	.265	.629	.281	.565	.346	2.5 to 15
Brown	.430	.340	.610	.390	.550	.450	.430	.390	1.0 to 9.0

TABLE C

Nighttime color specification limits (ASTM D4956)

Colors	1		2		3		4	
	x	y	x	y	x	y	x	y
White	.475	.452	.360	.415	.392	.370	.515	.409
Yellow	.513	.487	.500	.470	.545	.425	.572	.425
Blue	.033	.370	.180	.370	.230	.240	.091	.133
Green	.007	.570	.200	.500	.322	.590	.193	.782
Red	.650	.348	.620	.348	.712	.255	.735	.265
Brown	.595	.405	.540	.405	.570	.365	.643	.355

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WARRANTY

Engineering Grade Retroreflective Sheeting (RST Series) ("Product(s)") are warranted to be free from defects in material and workmanship for one (1) year from date of purchase (or the period stated on the specific product information literature in effect at time of delivery, if longer). It is expressly agreed and understood that INCOM's sole obligation and Purchaser's exclusive remedy under this warranty, under any other warranty, express or implied, or otherwise, shall be limited to repair or replacement of defective Product without charge at INCOM's plant or at the location of Product (at INCOM's election), or in the event replacement or repairs is not commercially practical, to INCOM's issuing Purchaser a credit reasonable in light of the defect in the Product. INCOM further warrants that Engineering Grade Retroreflective Sheeting (RST Series) will retain its effectiveness as a component of traffic control and guidance signs, and will meet the stated minimum values for coefficient of retroreflection ("Performance Warranty") as set forth in accordance with the following standards: Warranty Period Minimum Percentage RA Retained, 1-7 years, 50%. RA percentage retained apply to all entrance and observation angles in Table A, and shall be measured per ASTM E 810.

THIRD PARTY PRODUCT

INCOM assumes no responsibility for any injury, loss or damage arising out of the use of a product that is not of our manufacture. Where installer or converter uses or reference is made to a commercially available product, made by another manufacturer, it shall be the responsibility of the user, installer or converter to ascertain the precautionary measures for its use outlined by the manufacturer. The remedies provided under this warranty are exclusive. In no event shall INCOM be responsible for any direct, indirect, incidental or consequential damages or specific relief whether foreseeable or not, caused by defects in such Product, whether such damage occurs or is discovered before or after replacement or credit, and whether or not such damage is caused by INCOM's negligence. In no event shall INCOM's liability hereunder exceed the remedies specifically set forth in this warranty. INCOM's liability shall be limited, at INCOM's option, to the purchase price, replacement of the defective Product and in some cases when authorized by INCOM the repair and replacement of the defective Product. **THIS WARRANTY IS GIVEN IN LIEU OF ALL OTHERS. ANY AND ALL OTHER WARRANTIES, WHETHER EXPRESS OR IMPLIED, INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE HEREBY DISCLAIMED. NO WAIVER, ALTERATION, ADDITION OR MODIFICATION OF THE FOREGOING CONDITIONS SHALL BE VALID UNLESS MADE IN WRITING AND MANUALLY SIGNED BY AN OFFICER OF INCOM.**