

# DECLARATION OF PERFORMANCE

Construction Products Regulation 305/2011

No. 6000-1609

## High Intensity Prismatic Retroreflective Sheeting:

- T-6500 HIP Series
- T-6500 HIP Series with OL-2000 Transparent EC Film
- T-6500 HIP Series with 4930 Screen Ink
- T-6500 HIP Series with UVTS Screen Ink
- T-6500 HIP Series with 3801 Black Opaque Film
- T-6500 HIP Series with Matan DTS Ink & Clear Overlay
- T-6500 HIP Series with TrafficJet Ink & Clear Overlay



T-6000 HIP Series is a high-quality, 10-year durable, microprismatic retroreflective material with a pressure sensitive adhesive. This product is intended for use on permanent or temporary highway safety devices that require robust Class 2 retroreflective performance.



Manufactured by: Avery Dennison, Reflective Solutions

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Avery Dennison performed factory product control and product sampling per assessment and verification of constancy of performance under System 1. Silniční vývoj - ZDZ spol. s r. o. Notified Body 1388 performed initial type testing, inspection of manufacturing facilities and factory products controls under system 1. Tzus, 060-045345 issued **ETA 15/0919** dated 18/09/2017 & **ETA 18/0544** dated 15/10/2018.

Essential Characteristics		Performance	Assessment Document
Daylight Chromaticity		Per Table 2	EAD 12001-01-0106, September 2016
Luminance Factor		Per Table 2	
Coefficient of retro-reflection, Rotational Symmetry		Per Tables 3 & 4, Variation < 10%	
Impact Resistance		No Effect	
Visibility after Weathering, Natural & Accelerated Artificial	Retroreflection	80% of Initial Requirement	
	Chromaticity & Luminance Factor	Per Table 2	
Adhesion		Peel < 50 mm	

The performance of T-6500 HIP Series is in conformance with declarations herein when evaluated per EAD 120001-01-0106. This declaration of performance is issued for performance clarity under the sole discretion of Avery Dennison.

Signed for on behalf of Avery Dennison by: Sandeep Kottarath, Global Quality Manager

Date: 20 November 2018, Illinois, USA

Table 2: Daytime Chromaticity and Luminance Factors <sup>A</sup>

Colour		Colour Box Coordinates				Luminance Factor $\beta$
		1	2	3	4	
White	x	0,355	0,305	0,285	0,335	$\geq 0,27$
	y	0,355	0,305	0,325	0,375	
Yellow	x	0,545	0,487	0,427	0,465	$\geq 0,16$
	y	0,454	0,423	0,483	0,534	
Red	x	0,735	0,674	0,569	0,655	$\geq 0,03$
	y	0,265	0,236	0,341	0,345	
Orange	x	0,631	0,560	0,506	0,570	$\geq 0,14$
	y	0,369	0,360	0,404	0,429	
Green	x	0,007	0,248	0,177	0,026	$\geq 0,03$
	y	0,703	0,409	0,362	0,399	
Green 2 (Worboy Green)	x	0,313	0,313	0,248	0,127	$0,01 \leq \beta \leq 0,07$
	y	0,682	0,453	0,409	0,557	
Brown	x	0,455	0,523	0,558	0,479	$0,01 \leq \beta \leq 0,09$
	y	0,397	0,429	0,394	0,373	
Blue	x	0,078	0,150	0,210	0,137	$\geq 0,01$
	y	0,171	0,220	0,160	0,038	
Grey	x	0,355	0,305	0,285	0,335	$0,11 \leq \beta \leq 0,18$
	y	0,355	0,305	0,325	0,375	
Black	x	0,385	0,275	0,235	0,345	$\leq 0,03$
	y	0,355	0,250	0,290	0,395	

Notes: <sup>A</sup> – When material is sampled, processed and tested per Avery Dennison Product Data Bulletins, Instructional Bulletins, and EAD 120001-01-0106, Section 2.2.1.

Table 3: Coefficients of Retroreflection<sup>1</sup>, R<sub>A</sub> (cd/lux/m<sup>2</sup>)

Entrance Angle (β <sub>1</sub> , β <sub>2</sub> =0°)	Observation Angle (α)	R <sub>A</sub>							
		White	Yellow	Orange	Green	Red	Blue	Brown	Worboy Green
5°	0.2°	360	270	145	50	65	30	18	20
30°		170	135	68	25	30	14	8.5	15
5°	0.33°	180	120	65	21	25	14	8	14
30°		100	70	40	12	14	8	5	11
5°	0.5°	150	110	60	21	27	13	7.5	7.5
30°		72	54	28	10	13	6	3.5	3.5
5°	1.0°	35	26	12	4	5.2	2	1	1
30°		20	15	6.8	2	3	1	0.6	0.6

Notes: <sup>1</sup> – When material is sampled, processed and tested per Avery Dennison Product Data Bulletins, Instructional Bulletins, and EAD 120001-01-0106, Section 2.2.3 with averaging of ε=0° and 90°

Table 4: Coefficients of Retroreflection<sup>2</sup>, R<sub>A</sub> (cd/lux/m<sup>2</sup>)  
(Includes RA2/R2 Requirements)

Entrance Angle (β <sub>1</sub> , β <sub>2</sub> =0°)	Observation Angle (α)	R <sub>A</sub>								
		White	Yellow	Orange	Green	Red	Blue	Brown	Worboy Green	Grey
5°	0.2°	250	170	100	45	45	20	12	20	125
30°		150	100	60	25	25	11	8.5	15	75
40°		110	70	29	12	15	8	5	6	55
5°	0.33°	180	120	65	21	25	14	8	14	90
30°		100	70	40	12	14	8	5	11	50
40°		95	60	20	11	13	7	3	5	47
5°	2.0°	5	3	1.5	0.5	1	0.2	0.2	0.5	2.5
30°		2.5	1.5	1	0.3	0.4	-	-	0.3	1.2
40°		1.5	1	-	0.2	0.3	-	-	0.2	0.7

Notes: <sup>2</sup> – When material is sampled, processed and tested per Avery Dennison Product Data Bulletins, Instructional Bulletins, and EAD 120001-01-0106, Section 2.2.3 at ε=0° only.

Table 5: Component Performance Detail

Signing Component	Product and Component Names	Product Combination, Color and Number	Detailed Retroreflective Performance
Native Sheeting	T-6500 Series	T-6500 White T-6501 Yellow W-6504 Orange with OL-2000 Clear T-6505 Blue T-6507 Green T-6508 Red T-6509 Brown	Per Tables 3 & 4
Electronic Cuttable Overlay <sup>#</sup>	OL-2000 EC Film & 3801 Black	OL-2000/1000 Clear applied to White & Yellow Native Sheeting OL-2001 Yellow <sup>a</sup> OL-2004 Orange <sup>a</sup> OL-2005 Blue <sup>a</sup> OL-2007 Green <sup>a</sup> OL-2008 Red <sup>a</sup> OL-2008 Red applied to Yellow T-6501 <sup>+</sup> OL-2009 Brown <sup>a</sup> 3801 Black <sup>^</sup>	70% of Tables 3 & 4
^Standard Avery Dennison product code is 801, the prefix 3(801) denotes special watermark print for Germany only			
Solvent Screen Ink <sup>#</sup>	4930 Series	Yellow <sup>a</sup> Orange with OL-2000 Clear <sup>a</sup> Blue <sup>a</sup> Green <sup>a</sup> Red <sup>a</sup> Red applied to Yellow T-6501 <sup>+</sup> Black	70% of Tables 3 & 4
UV Screen Ink <sup>#</sup>	UVTS with UV Clearcoat	Blue Red Red applied to Yellow T-6501 <sup>+</sup> Black	70% of Tables 3 & 4
Digital Printing <sup>#</sup>	Matan with OL-2000 Clear	Green <sup>a</sup> Red <sup>a</sup> Black	70% of Tables 3 & 4
Digital Printing <sup>#</sup>	TrafficJet with OL-1000 or OL-2000 Clear	Yellow <sup>a</sup> Blue <sup>a</sup> Green <sup>a</sup> Red <sup>a</sup> Red applied to Yellow T-6501 <sup>+</sup> Worboy Green <sup>a</sup> Brown <sup>a</sup> Grey Black Black Applied to Yellow T-6501	70% of Tables 3 & 4

Notes: # - Declared performance for components assumes application to white native sheeting unless otherwise noted.

<sup>a</sup> - Declared performance is 100% of Table 4 values when processed per German requirements.

<sup>+</sup> - Avery Dennison recommends a 15% thinning of the 4930 Yellow ink to meet 100% requirement of table 4.

<sup>+</sup> - Declared performance is 50% of red values stated in Tables 3 & 4.