

Declaration of Performance/ Leistungserklärung 3M Advanced Engineer Grade Prismatic 7930

Construction Product Code / Bezeichnung des Bauproduktes

Microprismatic Retroreflective Sheeting

1. 3M Advanced Engineer Grade Prismatic Reflective Sheeting Series 7930
2. 3M Advanced Engineer Grade Prismatic Reflective Sheeting Series 7930 printed with 3M Process Color Series 880N or I
3. 3M Advanced Engineer Grade Prismatic Reflective Sheeting Series 7930 + 3M Piezo Inkjet Ink Series 8800UV + 3M Protective Overlay Film 1140

Intended Use / Verwendungszweck

The construction product is used to manufacture sign faces for permanent traffic signs. The intended use includes, for example:

- Retro-reflective signs, retro-reflective and transilluminated signs (see also EN 12899-1)
- Variable message signs (see also EN 12966-1)

Das Bauprodukt wird für die Herstellung von Signalbildern von ortsfesten, vertikalen Verkehrszeichen verwendet. Der Verwendungszweck schließt z.B. ein:

- Retroreflektierende Verkehrszeichen, retroreflektierende und innenbeleuchtete Verkehrszeichen (siehe EN 12899-1)
- Wechselverkehrszeichen (siehe EN 12966-1)

Manufacturer / Hersteller



3M Deutschland GmbH
Carl-Schurz-Str. 1
D – 41453 Neuss

Assessment and Verification of Constancy of Performance / Bewertung und Überprüfung der Leistungsbeständigkeit

System 1

StrAus-Zert, notified body 0913, Fleyer Straße 204, D-58097 Hagen performs the continuous surveillance, assessment and evaluation of the factory production control under system 1 and issued the certificate of constancy of performance 0913-CPR-2016/03

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StrAus-Zert, notifizierte Stelle Nr. 0913, Fleyer Straße 204, D-58097 Hagen führt die laufende Überwachung, Beurteilung und Anerkennung der werkseigenen Produktionskontrolle nach System 1 durch und hat das Zertifikat der Leistungsbeständigkeit 0913-CPR-2016/03 ausgestellt.

UBAtc, Rue du Lombard 42, B-1000 Brussels, performed the initial type testing and initial inspection of the manufacturing plant and the FPC under system 1 and issued ETA 16/0006 on the basis of EAD 120001-00-0106

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UBAtc, Rue du Lombard 42, B-1000 Brussels, führte die Erstprüfung und Erstinspektion des Werks und der werkseigenen Produktionskontrolle nach System 1 durch und hat ETA 16/0006 auf der Basis des EAD 120001-00-0106 ausgestellt.

Declared Performance / erklärte Leistung

Safety in Use / Nutzungssicherheit

Essential Characteristics / Wesentliche Merkmale	Performance / Leistung	Technical Specification / Technische Spezifikation
Visibility Characteristics		
Daylight Chromaticity and Luminance Factor	Table 1.2 (see Amendment)	EAD 120001-00-0106 (oct 2015) ETA 16/0006
Coefficient of Retro-reflection	Table A.1 (see Amendment)	
Rotational Symmetry	Ratio > 1:2.5	
Durability		
Impact Resistance	No apparent cracking or delamination	EAD 120001-00-0106 (oct 2015) ETA 16/0006
Visibility after accelerated artificial weathering		
Daylight Chromaticity and Luminance Factor	Table 1.3 (see Amendment)	
Coefficient of Retro-reflection	Values > 80% of Table A.1 (see Amendment)	

The performance of the construction product identified above is in conformity with the declared performance. This declaration of performance is issued under the sole responsibility of the manufacturer /

Die Leistung des oben genannten Bauproduktes entspricht der erklärten Leistung. Verantwortlich für die Erstellung dieser Leistungserklärung ist allein der Hersteller.

Neuss, april 2016

Dan Snustad

Dan Snustad
3M Technical Director

**Amendment to the Declaration of Performance
'3M Advanced Engineer Grade Prismatic 7930'**

This declaration covers the product 'Microprismatic retroreflective sheeting'. Sign plates or complete assemblies of fixed vertical road traffic signs according to EN 12899-1:2007 can be manufactured with the following products and product combinations, according to ETA 16/0006.

Components	Trade name	Colours/code
Micro-prismatic retro-reflective sheeting	3M™ Advanced Engineer Grade Prismatic Reflective Sheeting Series 7930	White 7930 Red 7932 Yellow 7931 Green 7937 Blue 7935 Orange 7934 Brown 7939
Process colour	3M™ Process Colour Series 880 I or N	Yellow 884 I or N Red 882 I or N Blue 883 I or N Green 888 I or N Brown 887 I or N
Process colour for digital printing	Piezo Inkjet Ink Series 8800 UV	Yellow Red Blue Green Brown Orange
Protective Overlay films	3M™ Protective Overlay Film 1140	Clear

Colours		Chromaticity Coordinates				Luminance Factor β
		1	2	3	4	
White Colour Box	x	0.305	0.335	0.325	0.295	≥ 0.40
	y	0.315	0.345	0.355	0.325	
Yellow Colour Box	x	0.494	0.470	0.513	0.545	≥ 0.24
	y	0.505	0.480	0.437	0.454	
Red Colour Box	x	0.735	0.700	0.610	0.660	≥ 0.03
	y	0.265	0.250	0.340	0.340	
Blue Colour Box	x	0.130	0.160	0.160	0.130	≥ 0.01
	y	0.090	0.090	0.140	0.140	
Green Colour Box	x	0.110	0.170	0.170	0.110	≥ 0.03
	y	0.415	0.415	0.500	0.500	
Orange Colour Box	x	0.631	0.560	0.506	0.570	≥ 0.14
	y	0.369	0.360	0.404	0.429	
Brown Colour Box	x	0.455	0.523	0.479	0.558	0.04-0.06
	y	0.397	0.429	0.373	0.394	

Table 1.2: Manufacturer's specification for initial daylight chromaticity and luminance factor

Colours		Chromaticity Coordinates				Luminance Factor β
		1	2	3	4	
White Colour Box	x	0.355	0.305	0.285	0.335	≥ 0.40
	y	0.355	0.305	0.325	0.375	
Yellow Colour Box	x	0.545	0.487	0.427	0.465	≥ 0.24
	y	0.454	0.423	0.483	0.534	
Red Colour Box	x	0.735	0.674	0.569	0.655	≥ 0.03
	y	0.265	0.236	0.341	0.345	
Orange Colour Box	x	0.631	0.560	0.506	0.570	≥ 0.14
	y	0.369	0.360	0.404	0.429	
Blue Colour Box	x	0.078	0.150	0.210	0.137	≥ 0.01
	y	0.171	0.220	0.160	0.038	
Green Colour Box	x	0.007	0.248	0.177	0.026	≥ 0.03
	y	0.703	0.409	0.362	0.399	
Brown Colour Box	x	0.455	0.523	0.479	0.558	0.04-0.06
	y	0.397	0.429	0.373	0.394	

Table 1.3: Manufacturer's specification for daylight chromaticity and luminance factor 'in-use'

Geometry		Colour						
α	β	White	Yellow	Red	Green	Blue	Brown	Orange
12' (0.2°)	5°	70	50	14,5	9	4	1	25
	30°	30	22	6	3,5	1,7	0,3	10
	40°	10	7	2	1,5	0,5	#	2,2
20' (0.33°)	5°	50	35	10	7	2	0,6	20
	30°	24	16	4	3	1	0,2	8
	40°	9	6	1,8	1,2	#	#	2,2
2°	5°	5	3	1	0,5	#	#	1,2
	30°	2,5	1,5	0,5	0,3	#	#	0,5
	40°	1,5	1,0	0,5	0,2	#	#	#
# Indicates "Value greater than zero but not significant or applicable".								

Table A.1

Manufacturer's Specification for the Minimum Initial Coefficient of Retro-reflection R_A value*

*Values are identical to EN 12899-1:2007 Class RA1