



European Technical Approval ETA-12/0445

English translation prepared by DIBt - Original version in German language

Handelsbezeichnung <i>Trade name</i>	T-7500 Maximum Visual Performance (MVP) Prismatic Grade, original eingefärbt <i>T-7500 Maximum Visual Performance (MVP) Prismatic Grade, Native Colours</i>
Zulassungsinhaber <i>Holder of approval</i>	Avery Dennison Materials Europe BV Rijndijk 86 2394 ZG HAZERWOUDE NIEDERLANDE
Zulassungsgegenstand und Verwendungszweck <i>Generic type and use of construction product</i>	Mikroprismatisches retroreflektierendes Folienmaterial <i>Microprismatic Retro-reflective Sheeting</i>
Geltungsdauer: <i>Validity:</i>	vom <i>from</i> 30 November 2012 bis <i>to</i> 30 November 2017
Herstellwerk <i>Manufacturing plant</i>	Avery Dennison Mount Prospect 902 Feehanville Drive IL 60056 Mount Prospect USA

Diese Zulassung umfasst
This Approval contains

15 Seiten
15 pages

I LEGAL BASES AND GENERAL CONDITIONS

- 1 This European technical approval is issued by Deutsches Institut für Bautechnik in accordance with:
 - Council Directive 89/106/EEC of 21 December 1988 on the approximation of laws, regulations and administrative provisions of Member States relating to construction products¹, modified by Council Directive 93/68/EEC² and Regulation (EC) N° 1882/2003 of the European Parliament and of the Council³;
 - *Gesetz über das In-Verkehr-Bringen von und den freien Warenverkehr mit Bauprodukten zur Umsetzung der Richtlinie 89/106/EWG des Rates vom 21. Dezember 1988 zur Angleichung der Rechts- und Verwaltungsvorschriften der Mitgliedstaaten über Bauprodukte und anderer Rechtsakte der Europäischen Gemeinschaften (Bauproduktengesetz - BauPG) vom 28. April 1998⁴, as amended by Article 2 of the law of 8 November 2011⁵;*
 - Common Procedural Rules for Requesting, Preparing and the Granting of European technical approvals set out in the Annex to Commission Decision 94/23/EC⁶.
- 2 Deutsches Institut für Bautechnik is authorized to check whether the provisions of this European technical approval are met. Checking may take place in the manufacturing plant. Nevertheless, the responsibility for the conformity of the products to the European technical approval and for their fitness for the intended use remains with the holder of the European technical approval.
- 3 This European technical approval is not to be transferred to manufacturers or agents of manufacturers other than those indicated on page 1, or manufacturing plants other than those indicated on page 1 of this European technical approval.
- 4 This European technical approval may be withdrawn by Deutsches Institut für Bautechnik, in particular pursuant to information by the Commission according to Article 5(1) of Council Directive 89/106/EEC.
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- 6 The European technical approval is issued by the approval body in its official language. This version corresponds fully to the version circulated within EOTA. Translations into other languages have to be designated as such.

¹ Official Journal of the European Communities L 40, 11 February 1989, p. 12

² Official Journal of the European Communities L 220, 30 August 1993, p. 1

³ Official Journal of the European Union L 284, 31 October 2003, p. 25

⁴ *Bundesgesetzblatt Teil I 1998*, p. 812

⁵ *Bundesgesetzblatt Teil I 2011*, p. 2178

⁶ Official Journal of the European Communities L 17, 20 January 1994, p. 34

II SPECIFIC CONDITIONS OF THE EUROPEAN TECHNICAL APPROVAL

1 Definition of the product and intended use

1.1 Definition of the construction product

The product consists of a retro-reflective foil on the basis of microprisms, which consist of optical elements, where the retro-reflection is created by total internal reflection on prisms. The microprisms are moulded in a transparent polymer enclosed in air capsules and provided with an adhesive, which can connect the foil with a substrate. The foil has a smooth surface and a regular structure visible on the surface forming the air capsules and serving to identify the orientation.

The product is delivered as reflective foil, the types of which are stated in Table 1.

Trade name	Component	Colours/Code		Properties
Avery Dennison T-7500 MVP Prismatic Grade	Self-adhesive retro-reflective foil on the basis of microprisms	White	T-7500 MVP	Foil thickness: 432-457 µm
		Yellow	T-7501 MVP	Roll measurements: 1220 mm x 45.7 m, 920 mm x 45.7 m or customized dimensions
		Red	T-7508 MVP	
		Blue	T-7505 MVP	
		Green	T-7507 MVP	

Table 1: Types of the reflective foil "Avery Dennison T-7500 Maximum Visual Performance (MVP) Prismatic Grade"

1.2 Intended use

The construction product described here is used to manufacture signal aspects of fixed, vertical traffic signs (see also EN 12899-1). The further intended applications are all other traffic signs and traffic installations, route guidance with retro-reflective elements and variable message signs.

However, the intended application excludes the manufacture of road marking elements according to EN 1436. The intended sign support material is aluminium.

Within the framework of this approval the following product properties were assessed in consultation with the manufacturer:

- Chromaticity coordinates and luminance factor
- Coefficient of retro-reflection (Case A)
- Impact resistance
- Durability: Visibility after artificial weathering

The provisions made in this European technical approval are based on an assumed intended working life of the reflective foil of 10 years, provided that the conditions laid down in sections 4.1, 4.2, and 5.1 as well as in the related product data sheets for the manufacture, packaging, transport and storage are met. The indications given on the working life cannot be interpreted as a guarantee given by the producer, but are to be regarded only as a means for choosing the right products in relation to the expected economically reasonable working life of the works.

2 Characteristics of the product and methods of verification

2.1 General

The identification of the product and the judgement of the qualification for the intended use of the reflective foil were performed on the basis of the assessment procedures agreed within EOTA.

The European technical approval for the product was evaluated and issued on the basis of the information/data and test results specifying the product in detail are deposited with Deutsches Institut für Bautechnik. Changes during the production process of the product or its components which could include considerable modifications in the information/data deposited have to be communicated to Deutsches Institut für Bautechnik in advance. The notification has to be made before changes in the properties are made on the product so that Deutsches Institut für Bautechnik can check to what extent the planned modification has effects on the properties tested in this European technical approval and thus, can decide whether further assessment and/or alterations shall be carried out.

The properties of the product, which are not described in the European technical approval, shall correspond to the relevant values laid down in the documentation to the European technical approval, examined by Deutsches Institut für Bautechnik.

2.2 Properties of the product "T-7500 MVP Prismatic Grade"

2.2.1 Release of dangerous substances

A written confirmation from the manufacturer is available that the product meets the requirements of the Directive 2002/95/EC on the restriction of the use of certain hazardous substances in electrical and electronic equipment concerning the dangerous substances lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBB) or polybrominated diphenyl ethers (PBDE).

Note: In addition to the specific clauses relating to dangerous substances contained in this European technical approval, there may be other requirements applicable to the products falling within its scope (e.g. transposed European legislation and national laws, regulations and administrative provisions). In order to meet the provisions of the Construction Products Directive, these requirements need also to be complied with, when and where they apply.

2.2.2 Visibility of "T-7500 MVP Prismatic Grade"

The properties of the product set out in clause 1.2 were tested for the granting of this European technical approval.

Detailed information on the test results are deposited with Deutsches Institut für Bautechnik.

For the preparation of the specimens, the test pieces of the reflective foil were applied by the manufacturer on a plane aluminium plate with a thickness of 2.0 mm (± 0.05 mm).

2.2.2.1 Chromaticity coordinates and luminance factors

The determination of the chromaticity coordinates and the luminance factors (see Table 2) was based on the following conditions:

The chromaticity coordinates (x , y) and the luminance factor (β) were measured according to CIE Publication 15.2 "Colorimetry", edition 1986, by using the 45/0 geometry and calculated for the spectral radiance of the illuminant D65 as well as for the colorimetric standard observer according to CIE 1931 (2°).

The orientation of the sample in the measuring system was shown by an orientation mark, with the orientation mark being at 90° to the optical plane of incidence. In doing so, the optical plane of incidence was formed from the right angle between the surface of the sample and the incident ray of light from the source of light on the sample surface.

Colour		Chromaticity coordinates				Met / not met	Luminance factor Class
		1	2	3	4		
White	x	0.305	0.335	0.325	0.295	met	B2 ≥ 0.40
	y	0.315	0.345	0.355	0.325		
Yellow	x	0.494	0.470	0.513	0.545	met	B2 ≥ 0.24
	y	0.505	0.480	0.437	0.454		
Red	x	0.735	0.700	0.610	0.660	met	B2 ≥ 0.03
	y	0.265	0.250	0.340	0.340		
Green	x	0.110	0.170	0.170	0.110	met	B2 ≥ 0.03
	y	0.415	0.415	0.500	0.500		
Blue	x	0.130	0.160	0.160	0.130	met	B2 ≥ 0.01
	y	0.090	0.090	0.140	0.140		

Table 2: Chromaticity coordinates and luminance factors

2.2.2.2 Coefficient of retro-reflection (Case A)

The determination of the coefficient of retro-reflection R_A – Case A (see Table 3 et sqq.) was based on the following conditions:

The coefficient of retro-reflection R_A was measured according to the CIE Publication N° 54.2 "Retro-reflection by using the CIE illuminant A". During the measurement any of the recommended apertures could be used. The measurements were carried out at a specific observation angle α , entrance angle β , rotation angle ϵ and orientation angle ω_s . In doing so, the entrance angle β was determined via its component β_1 with $\beta_2 = 0^\circ$. The rotation angle ϵ and the orientation angle ω_s were to be set also equal to zero.

Geometry of measurements		Colours				
α	β_1 ($\beta_2 = 0$)	White	Yellow	Red	Green	Blue
12'	+ 5°	250	170	45	45	20
	+30°	150	100	25	25	11
	+40°	110	70	15	12	8
20'	+ 5°	180	120	25	21	14
	+30°	100	70	14	12	8
	+40°	95	60	13	11	7
2°	+ 5°	5	3	1	0.5	0.2
	+30°	2.5	1.5	0.4	0.3	#
	+40°	1.5	1.0	0.3	0.2	#
met / not met		met	met	met	met	met

Table 3: Minimum coefficient of retro-reflection; class R2 Europe
means value exceeding zero, but not clearly measurable and therefore not applicable for evaluation

Geometry of measurements		Colours				
α	β_1 ($\beta_2 = 0$)	White	Yellow	Red	Green	Blue
0.1°	+ 5°	850	550	170	85	55
	+20°	600	390	120	60	40
	+30°	425	275	85	40	28
	+40°	275	175	55	25	18
0.2°	+ 5°	625	400	125	60	40
	+20°	450	290	90	45	30
	+30°	325	210	65	30	20
	+40°	200	130	40	20	13
0.33°	+ 5°	425	275	85	40	28
	+20°	300	195	60	30	20
	+30°	225	145	45	20	15
	+40°	150	95	30	15	10
met / not met		met	met	met	met	met

Table 4: Minimum coefficient of retro-reflection; class R3A Germany

Geometry of measurements		Colours				
α	β_1 ($\beta_2 = 0$)	White	Yellow	Red	Green	Blue
0.33°	+ 5°	300	195	60	30	19
	+20°	240	155	48	24	16
	+30°	165	110	33	17	11
	+40°	30	20	6	3	2
1.0°	+ 5°	35	23	7	3.5	2.5
	+20°	30	20	6	3	2
	+30°	20	13	4	2	1.5
	+40°	3.5	2	1	#	#
1.5°	+ 5°	15	10	3	1.5	1
	+20°	13	8	2.5	1	#
	+30°	9	6	2	#	#
	+40°	1.5	1	#	#	#
met / not met		not met	not met	not met	met	met

Table 5: Minimum coefficient of retro-reflection; class R3B Germany

means value exceeding zero, but not clearly measurable and therefore not applicable for evaluation

Geometry of measurements		Colour				
α	β_1 ($\beta_2 = 0$)	White	Yellow	Red	Green	Blue
0.1°	+ 5°	900	720	250	90	45
	+30°	495	405	135	45	22
	+40°	340	270	85	27	13
0.2°	+ 5°	720	600	195	75	40
	+30°	360	310	90	30	18
	+40°	180	155	45	15	7
0.5°	+ 5°	180	140	40	18	9
	+30°	90	75	23	9	4
	+40°	70	55	16	5	2.5
met / not met		met	met	met	met	met

Table 6: Minimum coefficient of retro-reflection; class R3A Greece

Geometry of measurements		Colour				
α	β_1 ($\beta_2 = 0$)	White	Yellow	Red	Green	Blue
0.2°	+ 5°	400	300	80	45	20
	+30°	150	105	30	24	11
	+40°	45	35	9	7	3
0.33°	+ 5°	300	250	75	33	15
	+30°	130	90	30	18	7
	+40°	30	25	7	4	1.4
1.0°	+ 5°	70	55	13	8	3.5
	+30°	45	35	10	4.5	2
	+40°	13	10	4.5	1.8	#
met / not met		not met	not met	not met	not met	not met

Table 7: Minimum coefficient of retro-reflection; class R3B Greece
means value exceeding zero, but not clearly measurable and therefore not applicable for evaluation

Geometry of measurements		Colours				
α	β_1 ($\beta_2 = 0$)	White	Yellow	Red	Green	Blue
0.2°	+ 5°	430	350	110	45	25
	+15°	350	270	90	35	20
	+30°	235	190	60	24	11
	+40°	55	40	12	7	3
0.33°	+ 5°	300	250	75	35	17
	+15°	250	200	65	25	15
	+30°	150	130	35	18	7
	+40°	30	25	7	4	2
1.0°	+ 5°	80	65	20	10	5
	+15°	60	45	16	7	3.5
	+30°	50	40	13	5	2.5
	+40°	15	13	5	2	1
met / not met		not met	not met	not met	not met	not met

Table 8: Minimum coefficient of retro-reflection; class R3B Belgium

Geometry of measurements		Colours				
α	β_1 ($\beta_2 = 0$)	White	Yellow	Red	Green	Blue
12'	+ 5°	70	50	14.5	9	4
	+30°	30	22	6	3.5	1.7
	+40°	10	7	2	1.5	0.5
20'	+ 5°	50	35	10	7	2
	+30°	24	16	4	3	1
	+40°	9	6	1.8	1.2	#
2°	+ 5°	5	3	1	0.5	#
	+30°	2.5	1.5	0.5	0.3	#
	+40°	1.5	1.0	0.5	0.2	#
met / not met		met	met	met	met	met

Table 9: Minimum coefficient of retro-reflection; class RA1
means value exceeding zero, but not clearly measurable and therefore not applicable for evaluation

2.2.2.3 Rotational symmetry

The rotational symmetry of the coefficient of retro-reflection which represents an additional requirement of the classes 3A and 3B was determined under the same conditions as the coefficient of retro-reflection (Case A, see 2.2.2.1.3). With an observation angle $\alpha = 0,33^\circ$ and an entrance angle $\beta_1 = 5^\circ$ ($\beta_2 = 0^\circ$) the ratio between the minimum and the maximum coefficient of retro-reflection during rotation of ε was determined in 25°steps from -75° to $+25^\circ$. The ratio shall not be greater than 2.5:1. The product satisfies this requirement.

Coefficient of retro-reflection ($\text{cd}\cdot\text{lx}^{-1}\cdot\text{m}^{-2}$) - rotational symmetry		
Colour	Ratio	Met / not met
White	1.1	met
Yellow	1.1	met
Red	1.1	met
Green	1.1	met
blue	1.3	met

Table 10: Rotational symmetry

2.2.3 Impact resistance

The determination of the impact resistance was based on the following conditions:

The test was performed according to EN 12899-1:2001. For this purpose a weight of 450 g with a contact radius of 50 mm falls from a height of 220 mm onto the specimen. The specimen shall be reinforced such that the open surface is 100 mm x 100 mm.

Product	Colour		met / not met
Microprismatic reflective foil T-7500 MVP Prismatic Grade	White	T-7500 MVP	met: There were no damages.
	Yellow	T-7501 MVP	
	Red	T-7508 MVP	
	Green	T-7507 MVP	
	Blue	T-7505 MVP	

Table 11: Impact resistance

2.2.4 Durability of "T-7500 MVP Prismatic Grade"

For the assessment of the durability an artificial weathering was carried out.

The artificial weathering was performed according to ISO 4892-2:1994. For that purpose the specimens were weathered for a period of 2000 hours using the following parameters:

Weathering parameters	Air-cooled lamp	Water-cooled lamp
Irradiation cycle/dark phase cycle/spray cycle	Continuous light with spray on the test specimens for 18 min every 2h	Continuous light with spray on the test specimens for 18 min every 2h
Black standard temperature only during irradiation	(65 ± 3)°C with blackpanel thermometer	(65 ± 3)°C with blackpanel thermometer
relative humidity	(50 ± 5) %	(50 ± 5) %
irradiance (W/m ²) controlled in the - range over 300 nm to 400 nm - range over 300 nm to 800 nm	60 550	60 630
NOTE: 1 - The water used for spraying the test pieces should not contain more than 1ppm silica. Higher proportions of silica can leave residues on the test specimens and cause different results. Water with the required purity can be obtained by distillation or by a combination of deionization and osmosis. NOTE 2 - During irradiation, the aforementioned values should be reached, changes in the age of the filter and the transmissivity, and changes in the calibration generally mean that the irradiation defect is of the order of 10 %.		

Table. 12

After the artificial weathering the following tests were carried out:

- Determination of the chromaticity coordinates
- determination of the luminance factors
- determination of the coefficient of retro-reflection

After the artificial weathering the coefficient of retro-reflection with an observation angle of $\alpha = 0.33^\circ$ (or $\alpha = 0.2^\circ$) and of $\alpha = 1.0^\circ$ (if specified for new material) and the illumination angles $\beta_1 = 5^\circ$ and 30° ($\beta_2 = 0^\circ$) must not be less than 80% of the required coefficient of retro-reflection in new condition.

2.2.4.1 Chromaticity coordinates and luminance factors after artificial weathering

Colour		Chromaticity coordinates				Met / not met	Luminance factor Class
		1	2	3	4		
White	x	0.355	0.305	0.285	0.335	met	B2 ≥ 0.40
	y	0.355	0.305	0.325	0.375		
Yellow	x	0.545	0.487	0.427	0.465	met	B2 ≥ 0.24
	y	0.454	0.423	0.483	0.534		
Red	x	0.735	0.674	0.569	0.655	met	B2 ≥ 0.03
	y	0.265	0.236	0.341	0.345		
Green	x	0.007	0.248	0.177	0.026	met	B2 ≥ 0.03
	y	0.703	0.409	0.362	0.399		
Blue	x	0.078	0.150	0.210	0.137	met	B2 ≥ 0.01
	y	0.171	0.220	0.160	0.038		

Table 13: Chromaticity coordinates and luminance factors after artificial weathering

2.2.4.2 Coefficient of retro-reflection after artificial weathering

Colours	met/not met* (met: $\geq 80\%$ of the values required in new condition)
White	met
Yellow	met
Red	met
Green	met
Blue	met

Table 14: coefficient of retro-reflection (Case A) after artificial weathering * assessment was made for the classes which were met in new condition

3 Evaluation and attestation of conformity and CE marking

3.1 System of attestation of conformity

According to the Decision 96/579/EC of 24.06.19967, amended by the Decision 1999/453/EC8, system 1 of the attestation of conformity shall apply. This system of attestation of conformity is described in the following:

System 1: Certification of the conformity of the product by an approved certification body on the basis of:

- (a) Tasks for the manufacturer:
 - (1) factory production control;
 - (2) further testing of samples taken at the factory by the manufacturer in accordance with a prescribed test plan;
- (b) Tasks for the approved body:
 - (3) initial type-testing of the product;
 - (4) initial inspection of factory and of factory production control;
 - (5) continuous surveillance, assessment and approval of factory production control.

Note: Approved bodies are also referred to as "notified bodies".

3.2 Responsibilities

3.2.1 Tasks for the manufacturer

3.2.1.1 Factory production control

The manufacturer shall exercise permanent internal control of production (production of the retro-reflective foil on the basis of microprisms, transparent colour laminate, screen printing ink). All the elements, requirements and provisions adopted by the manufacturer shall be documented in a systematic manner in the form of written policies and procedures, including records of results performed. This production control system shall insure that the product is in conformity with this European technical approval.

The manufacturer may only use components stated in the technical documentation of this European technical approval. A quality control on the incoming materials bought and the material components respectively will be conducted before these can be used. The manufacturer shall only use materials and/or material components which are entered in the relevant documents of the receiving control according to the test plan

The factory production control shall be in accordance with the "Control plan of 17.02.2012 relating to the European technical approval ETA-12/0045" issued on 30.11.2012", which is part of the technical documentation of this European technical approval. The control plan is laid down in the context of the factory production control system operated by the manufacturer and deposited with Deutsches Institut für Bautechnik.⁹

⁷ Official Journal of the European Communities L 254 of 08.10.1996

⁸ Official Journal of the European Communities L 178 of 14.07.1999

⁹ The control plan is a confidential part of the European technical approval and only handed over to the approved bodies involved in the procedure of attestation of conformity. See chapter 3.2.2.

The results of the production control are recorded and evaluated. The records include, inter alia, the following information:

- Designation of the product, basic material and components,
- type of surveillance and check,
- information on the production time frame of the products and time for testing the products and the materials and material components,
- results of the surveillance and of the control and, if necessary, details for comparison with the requirements demanded,
- signatures of the persons responsible for the factory production control.

The records shall be made available to the responsible inspection bodies during the continuous examination. On demand these shall be made available to Deutsches Institut für Bautechnik.

Details concerning extension, type and frequency of the controls and surveillance which are necessary in the context of factory production control shall be in conformity with the test plan which is part of the technical documentation of this European technical approval.

3.2.1.2 Other tasks for the manufacturer

The manufacturer shall, on the basis of a contract, involve bodies which are approved for the tasks referred to in section 3.1 in the field of the micro-prismatic retro-reflective foils for traffic signs in order to undertake the actions laid down in section 3.2.2. For this purpose the test and "control" plan according to sections 3.2.1.1 and 3.2.2 shall be handed over to the approved bodies by the manufacturer.

3.2.2 Tasks for the approved bodies

The approved bodies shall perform the following tasks in accordance with the provisions laid down in the control plan:

- initial type-testing of the product.
- initial inspection of factory and factory production control,
- continuous surveillance, assessment and approval of factory production control.

The approved bodies shall retain the essential points of its actions referred to above and state the results obtained and conclusions drawn in a written report.

The approved certification body involved by the manufacturer shall issue an EC certificate of conformity of the product stating the conformity with the provisions of this European technical approval.

In cases where the provisions of the European technical approval and its control plan are no longer fulfilled the certification body shall withdraw the certificate of conformity and inform Deutsches Institut für Bautechnik without delay.

3.3 CE marking

The CE marking shall be affixed on the packaging or on the papers enclosed when delivering the product. The letters "CE" shall be followed by the identification number of the approved certification body and be accompanied by the following additional information:

- the name and address of the producer (legal entity responsible for the manufacture),
- the last two digits of the year in which the CE marking was affixed,
- the number of the EC certificate of conformity for the product,
- the number of the European technical approval,
- designation of the product "T-7500 MVP Prismatic Grade"
- Information on the product characteristics stated in section 1.2.

4 Assumptions under which the fitness of the product for the intended use was favourably assessed

4.1 Manufacturing

The European technical approval is issued for the product on the basis of agreed data/information, deposited with Deutsches Institut für Bautechnik, which identifies the product that has been assessed and judged. Changes to the product or production process, which could result in this deposited data/information being incorrect, shall be notified to Deutsches Institut für Bautechnik before the changes are introduced. Deutsches Institut für Bautechnik will decide whether or not such changes affect the approval and consequently the validity of the CE marking on the basis of the approval and if so whether further assessment or alterations to the approval shall be necessary.

4.2 Installation

It is the task of the manufacturer to see to it that all persons involved will be informed about the Specific Conditions of this European technical approval.

The sign bases foreseen consist of aluminium.

The use of the products is subject to national provisions.

The choice and the preparation of the sign support material, as well as the generally applicable rules on the bonding of the product "T-7500 MVP Prismatic Grade" which are fully described in the current versions of the publications and the technical documentation by the holder of the European technical approval, shall be observed taking account of the national provisions on the use of the product.

"T-7500 MVP Prismatic Grade" is equipped with a self-adhesive coating, so that the foil can be glued on the sign support material which, at a room temperature of $> 10^{\circ}\text{C}$, can be done with one of the following methods: Mechanically driven roller applicator, manually operated roller applicator, application with a hand roller. If a heater assembly is used, the sign support surface should be adjusted to a minimum temperature of $> 10^{\circ}\text{C}$.

The users are instructed to carefully check the qualification of the sign support material used as to its bonding property as well as to the durability qualification. "T-7500 MVP Prismatic Grade" has been developed especially for adhesion on flat surfaces. Processing defects which were caused by the choice of an unsuitable substrate or by an improper preparation, are not the responsibility of the holder of the European technical approval.

5 Indications to the manufacturer

5.1 Packaging, transport and storage

The foil should be stored in a cool, dry room at a temperature between 18°C and 24°C and a relative air humidity of 45 %-55 % and should be processed within one year after delivery. The rolls should be stored horizontally in the packaging board. Precutted foil sheets should be stored flat only. Prepared signs should be stored standing on the edge in dry surroundings. Finished signs should always be kept dry during storage and transport. Should these get wet, it shall be made sure that these will be dried as soon as possible. Fluorescent foils shall be handled with extreme care. The protective packaging should remain on the roll until further processing.

Dr.-Ing. Karsten Kathage
Vice-President

beglaubigt:
Sterling