

Attachment to Certificate of constancy of performance 0913-CPR-2018/01 (9 pages)

The descriptions in this attachment refer to the ETA (Assessment)

ETA-15/0104 from 2016-01-28,
ETA-15/0106 from 2016-01-28,
ETA-15/0107 from 2016-01-28,
ETA-15/0108 from 2016-01-28,
ETA-16/0611 from 2016-11-16,
ETA-16/0613 from 2016-11-16,
ETA-13/0247 from 2018-02-02,
ETA-13/0248 from 2018-02-02,
ETA-13/0249 from 2018-02-02,
ETA-13/0250 from 2018-02-02 and
ETA-13/0251 from 2018-02-02.

The above certified microprismatic retroreflective sheeting ORALITE® 6910 Brilliant Grade to be used for fixed, vertical road traffic signs is admitted for the following original dyed colours:

Original dyed retroreflective sheeting:

Colour	Name of the product	Visibility characteristics		Durability	
		Daylight chromaticity & luminance factor ETA 13/0247 annex 1	Coefficient of retroreflection ETA 13/0247 annex 2	Impact resistance ETA 13/0247 clause 3.1 according to EN 12899-1	Resistance to weathering ETA 13/0247 annex 3
White	ORALITE® 6910-010 Brilliant Grade	pass	pass	pass	pass
Yellow	ORALITE® 6910-020 Brilliant Grade	pass	pass	pass	pass
Red	ORALITE® 65910-030 Brilliant Grade	pass	pass	pass	pass
Blue	ORALITE® 6910-050 Brilliant Grade	pass	pass	pass	pass
Green	ORALITE® 6910-060 Brilliant Grade	pass	pass	pass	pass
Brown	ORALITE® 6910-080 Brilliant Grade	pass	pass	pass	pass

The above certified microprismatic retroreflective sheeting ORALITE® 6910 Brilliant Grade to be used for fixed, vertical road traffic signs is accepted to be coloured by the below listed materials:

Lettering Film:

Colour	Name of the product	Visibility characteristics		Durability	
		Daylight chromaticity & luminance factor EN 12899-1 7.3.1.3	Coefficient of retroreflection EN 12899-1 4.1.1.4	Impact resistance EN 12899-1 4.1.2.1	Resistance to weathering EN 12899-1 4.1.1.5
Black	ORALITE® 5081-070 Lettering Film	NR1	-	pass	pass

Screenprinting Colours:

Colour on white sheeting	Name of the product ORALITE® 6910-010 Brilliant Grade and	Visibility characteristics		Durability	
		Daylight chromaticity & luminance factor ETA 13/0248 annex 1	Coefficient of retroreflection ETA 13/0248 annex 2	Impact resistance ETA 13/0248 clause 3.1 according to EN 12899-1	Resistance to weathering ETA 13/0248 annex 3
Yellow	ORALITE® 5018-020 Screen Printing Ink	pass	pass	pass	pass
Red	ORALITE® 5018-030 Screen Printing Ink	pass	pass	pass	pass
Blue	ORALITE® 5018-050 Screen Printing Ink	pass	pass	pass	pass
Green	ORALITE® 5018-060 Screen Printing Ink	pass	pass	pass	pass
Orange	ORALITE® 5018-035 Screen Printing Ink	pass	pass	pass	pass
Brown	ORALITE® 5018-080 Screen Printing Ink	pass	pass	pass	pass

Colour	Name of the product	Visibility characteristics		Durability	
		Daylight chromaticity & luminance factor EN 12899-1 7.3.1.3	Coefficient of retroreflection EN 12899-1 4.1.1.4	Impact resistance EN 12899-1 4.1.2.1	Resistance to weathering EN 12899-1 4.1.1.5
Black	ORALITE® 5018-070 Screenprinting Ink	NR1	-	pass	pass

Coloured Laminates:

Original dyed retroreflective sheeting ORALITE® 6910 Brilliant Grade with ORALITE® 5061 Transparent Film (ETA-13/0249)

Colour on white sheeting	Name of the product ORALITE® 6910-010 Brilliant Grade and	Visibility characteristics		Durability	
		Daylight chromaticity & luminance factor ETA 13/0249 annex 1	Coefficient of retroreflection ETA 13/0249 annex 2	Impact resistance ETA 13/0249 clause 3.1 according to EN 12899-1	Resistance to weathering ETA 13/0249 annex 3 and 4
Transparent	ORALITE® 5061-000 Transparent Film	pass	pass	pass	pass
Yellow	ORALITE® 5061-020 Transparent Film	pass	pass	pass	pass
Red	ORALITE® 5061-030 Transparent Film	pass	pass	pass	pass
Blue	ORALITE® 5061-050 Transparent Film	pass	pass	pass	pass
Green	ORALITE® 5061-060 Transparent Film	pass	pass	pass	pass
Brown	ORALITE® 5061-080 Transparent Film	pass	pass	pass	pass

Clear protective overlay film:

Clear protective overlay films (Anti-Dew or Anti-Graffiti) are always admitted in combination with retroreflective sheeting and a colouring process.

Anti-Dew:

The original dyed retroreflective sheeting is accepted to be laminated with the clear protective overlay film ORALITE® 5090 Anti-Dew Film for the following colours.

Original dyed retroreflective sheeting ORALITE® 6910 Brilliant Grade with ORALITE® 5090 Anti-Dew Film (ETA-13/0251)

Colour	Name of the product	Visibility characteristics		Durability	
		Daylight chromaticity & luminance factor ETA 13/0251 annex 1	Coefficient of retroreflection ETA 13/0251 annex 2	Impact resistance ETA 13/0251 clause 3.1 according to EN 12899-1	Resistance to weathering ETA 13/0251 annex 3
White	ORALITE® 6910-010 Brilliant Grade and ORALITE® 5090 Anti-Dew Film	pass	pass	pass	pass
Yellow	ORALITE® 6910-020 Brilliant Grade and ORALITE® 5090 Anti-Dew Film	pass	pass	pass	pass
Red	ORALITE® 6910-030 Brilliant Grade and ORALITE® 5090 Anti-Dew Film	pass	pass	pass	pass
Blue	ORALITE® 6910-050 Brilliant Grade and ORALITE® 5090 Anti-Dew Film	pass	pass	pass	pass
Green	ORALITE® 6910-060 Brilliant Grade and ORALITE® 5090 Anti-Dew Film	pass	pass	pass	pass
Brown	ORALITE® 6910-080 Brilliant Grade und ORALITE® 5090 Anti-Dew Film	pass	pass	pass	pass

Original dyed retroreflective sheeting ORALITE® 6910 Brilliant Grade and Lettering-Film

Colour	Name of the product	Visibility characteristics		Durability	
		Daylight chromaticity & luminance factor EN 12899-1 7.3.1.3	Coefficient of retroreflection EN 12899-1 4.1.1.4	Impact resistance EN 12899-1 4.1.2.1	Resistance to weathering EN 12899-1 4.1.1.5
Black	ORALITE® 5081-070 Lettering Film and ORALITE® 5090 Anti-Dew Film	NR1	-	pass	pass

The original dyed white retroreflective sheeting is accepted to be laminated with the coloured transparent laminate ORALITE® 5061 Transparent Film and the clear protective overlay film ORALITE® 5090 Anti-Dew Film for the following colours.

Original dyed retroreflective sheeting ORALITE® 6910 Brilliant Grade and coloured transparent laminate ORALITE® 5061 Transparent Film with ORALITE® 5090 Anti-Dew Film

Colour on white sheeting	Name of the product	Visibility characteristics		Durability	
		Daylight chromaticity & luminance factor ETA 13/0251 annex 1	Coefficient of retroreflection ETA 13/0251 annex 2	Impact resistance ETA 13/0251 clause 3.1 according to EN 12899-1	Resistance to weathering ETA 13/0251 annex 3
	ORALITE® 6910-010 Brilliant Grade and				
Yellow	ORALITE® 5061-020 Transparent Film and ORALITE® 5090 Anti-Dew Film	pass	pass	pass	pass
Red	ORALITE® 5061-030 Transparent Film and ORALITE® 5090 Anti-Dew Film	pass	pass	pass	pass
Blue	ORALITE® 5061-050 Transparent Film and ORALITE® 5090 Anti-Dew Film	pass	pass	pass	pass
Green	ORALITE® 5061-060 Transparent Film and ORALITE® 5090 Anti-Dew Film	pass	pass	pass	pass
Brown	ORALITE® 5061-080 Transparent Film and ORALITE® 5090 Anti-Dew Film	pass	pass	pass	pass

Anti-Graffiti:

The original dyed retroreflective sheeting is accepted to be laminated with the clear protective overlay film ORALITE® 5095 Anti-Graffiti Film for the following colours.

Original dyed retroreflective sheeting ORALITE® 6910 Brilliant Grade with ORALITE® 5095 Anti-Graffiti Film (ETA-15/0104)

Colour	Name of the product	Visibility characteristics		Durability	
		Daylight chromaticity & luminance factor Evaluation according to EN 12899-1 class CR2	Coefficient of retroreflection Evaluation according to TLP VZ, Notification Number 2007/0661/D, tab. 14, class RA3	Impact resistance Evaluation according to EN 12899-1	Resistance to weathering Evaluation according to TLP VZ, Notification Number 2007/0661/D, tab. 11 and 17
White	ORALITE® 6910-010 Brilliant Grade and ORALITE® 5095 Anti-Graffiti Film	pass	pass	pass	pass ^{*5}
Yellow	ORALITE® 6910-020 Brilliant Grade and ORALITE® 5095 Anti-Graffiti Film	pass	pass	pass	pass
Red	ORALITE® 6910-030 Brilliant Grade and ORALITE® 5095 Anti-Graffiti Film	pass	pass	pass	pass
Blue	ORALITE® 6910-050 Brilliant Grade and ORALITE® 5095 Anti-Graffiti Film	pass	pass	pass	pass
Green	ORALITE® 6910-060 Brilliant Grade and ORALITE® 5095 Anti-Graffiti Film	pass	pass	pass	pass
Brown	ORALITE® 6910-080 Brilliant Grade and ORALITE® 5095 Anti-Graffiti Film	pass	pass ^{*4}	pass	pass ^{*4}

^{*4} Evaluation of performance on 56 % of requirement of colour Blue.

^{*5} Evaluation of average value.

Original dyed retroreflective-sheeting ORALITE® 6910 Brilliant Grade with Lettering-Film with ORALITE® 5095 Anti-Graffiti Film

Colour	Name of the product	Visibility characteristics		Durability	
		Daylight chromaticity & luminance factor EN 12899-1 7.3.1.3	Coefficient of retroreflection EN 12899-1 4.1.1.4	Impact resistance EN 12899-1 4.1.2.1	Resistance to weathering EN 12899-1 4.1.1.5
Black	ORALITE® 5081-070 Lettering Film und ORALITE® 5095 Anti-Graffiti Film	NR1	-	pass	pass

The original dyed white retroreflective sheeting is accepted to be laminated with the coloured transparent laminate ORALITE® 5061 Transparent Film and the clear protective overlay film ORALITE® 5095 Anti-Graffiti Film for the following colours.

Original dyed retroreflective sheeting ORALITE® 6910 Brilliant Grade and coloured transparent laminate ORALITE® 5061 Transparent Film with ORALITE® 5095 Anti-Graffiti Film (ETA-15/0106)

Colour	Name of the product	Visibility characteristics		Durability	
		Daylight chromaticity & luminance factor Evaluation according to EN 12899-1 class CR2	Coefficient of retroreflection Evaluation according to TLP VZ, Notification Number 2007/0661/D, tab. 14, class RA3	Impact resistance Evaluation according to EN 12899-1	Resistance to weathering Evaluation according to TLP VZ, Notification Number 2007/0661/D, tab. 11 and 17
on white sheeting	ORALITE® 6910-010 Brilliant Grade with				
Yellow	ORALITE® 5061-020 Transparent Film and ORALITE® 5095 Anti-Graffiti Film	pass	pass	pass	pass
Red	ORALITE® 5061-030 Transparent Film and ORALITE® 5095 Anti-Graffiti Film	pass	pass	pass	pass ^{*7}
Blue	ORALITE® 5061-050 Transparent Film and ORALITE® 5095 Anti-Graffiti Film	pass	pass	pass	pass
Green	ORALITE® 5061-060 Transparent Film and ORALITE® 5095 Anti-Graffiti Film	pass	pass	pass	pass
Brown	ORALITE® 5061-080 Transparent Film and ORALITE® 5095 Anti-Graffiti Film	pass	pass ^{*6}	pass	pass ^{*6}

^{*6} Evaluation of performance on 56 % of requirement of colour Blue.

^{*7} Evaluation of average value.

Digital Printing:

The digital printing is processed on white retroreflective sheeting with the digital printing systems AGFA ANAPURNA M2050 High-Speed-UV-Inkjet-System or AGFA ANAPURNA M2050i High-Speed-UV-Inkjet-System and is to be laminated with a transparent protective laminate.

ORALITE® 5019 UV Digital Printing Ink:

Protective laminate ORALITE® 5061-000 Transparent Film (ETA-15/0107)

Colour on white sheeting	Name of the product	Visibility characteristics		Durability	
		Daylight chromaticity & luminance factor Evaluation according to EN 12899-1 class CR2	Coefficient of retroreflection Evaluation according to TLP VZ, Notification Number 2007/0661/D, tab. 14, class RA3	Impact resistance Evaluation according to EN 12899-1	Resistance to weathering Evaluation according to TLP VZ, Notification Number 2007/0661/D, tab. 11 and 17
	ORALITE® 6910-010 Brilliant Grade with				
Yellow	ORALITE® 5019-020 UV Digital Printing Ink and ORALITE® 5061-000 Transparent Film	pass	pass *8	pass	pass
Red	ORALITE® 5019-030 UV Digital Printing Ink and ORALITE® 5061-000 Transparent Film	pass	pass *8	pass	pass
Blue	ORALITE® 5019-050 UV Digital Printing Ink and ORALITE® 5061-000 Transparent Film	pass	pass	pass	pass
Brown	ORALITE® 5019-080 UV Digital Printing Ink and ORALITE® 5061-000 Transparent Film	pass	pass *9	pass	pass *9

*8 Evaluation of 70% value for process colours.

*9 Evaluation of performance on 56 % of requirement of colour Blue.

Protective laminate ORALITE® 5090 Anti-Dew Film (ETA-15/0108)

Colour on white sheeting	Name of the product	Visibility characteristics		Durability	
		Daylight chromaticity & luminance factor Evaluation according to EN 12899-1 class CR2	Coefficient of retroreflection Evaluation according to TLP VZ, Notification Number 2007/0661/D, tab. 14, class RA3	Impact resistance Evaluation according to EN 12899-1	Resistance to weathering Evaluation according to TLP VZ, Notification Number 2007/0661/D, tab. 11 and 17
	ORALITE® 6910-010 Brilliant Grade with				
Yellow	ORALITE® 5019-020 UV Digital Printing Ink and ORALITE® 5090 Anti-Dew Film	pass	pass *10	pass	pass
Red	ORALITE® 5019-030 UV Digital Printing Ink and ORALITE® 5090 Anti-Dew Film	pass	pass *10	pass	pass
Blue	ORALITE® 5019-050 UV Digital Printing Ink and ORALITE® 5090 Anti-Dew Film	pass	pass	pass	pass
Brown	ORALITE® 5019-080 UV Digital Printing Ink and ORALITE® 5090 Anti-Dew Film	pass	pass *11	pass	pass *11

*10 Evaluation of 70% value for process colours.

*11 Evaluation of performance on 56% of requirement of colour Blue.

Digital Printing Black:

Colour	Name of the product	Visibility characteristics		Durability	
		Daylight chromaticity & luminance factor EN 12899-1 7.3.1.3	Coefficient of retroreflection EN 12899-1 4.1.1.4	Impact resistance EN 12899-1 4.1.2.1	Resistance to weathering EN 12899-1 4.1.1.5
Black	ORALITE® 5019-070 UV Digital Printing Ink and ORALITE® 5061-000 Transparent Film	NR1	-	pass	pass
Black	ORALITE® 5019-070 UV Digital Printing Ink and ORALITE® 5090 Anti-Dew Film	NR1	-	pass	pass
Black	ORALITE® 5019-070 UV Digital Printing Ink *12	NR1	-	pass	pass

*12 If the colour Black is printed solely, this material combination is admitted to be used without the protective laminate.

Digital Printing Darkgreen:

Several protective laminates (ETA-16/0613)

Colour	Name of the product	Visibility characteristics		Durability	
		Daylight chromaticity & luminance factor Evaluation according to EN 12899-1 class CR2	Coefficient of retroreflection Evaluation according to class RA3 *13	Impact resistance Evaluation according to EN 12899-1	Resistance to weathering Evaluation according to class RA3 *13 and EN 12899-1 class CR1
on white sheeting	ORALITE® 6910-010 Brilliant Grade with				
Darkgreen	ORALITE® 5019-625 UV Digital Printing Ink and ORALITE® 5061-000 Transparent Film	pass	pass	pass	pass
Darkgreen	ORALITE® 5019-625 UV Digital Printing Ink and ORALITE® 5061-000 Transparent Film	pass	pass	pass	pass
Darkgreen	ORALITE® 5019-625 UV Digital Printing Ink and ORALITE® 5061-000 Transparent Film	pass	pass	pass	pass

*13 Evaluation of performance on 8% of requirement of colour White.

ORALITE® 5019i UV Digital Printing Ink:

Protective laminate ORALITE® 5061-000 Transparent Film (ETA-16/0611)

Colour on white sheeting	Name of the product	Visibility characteristics		Durability	
		Daylight chromaticity & luminance factor Evaluation according to EN 12899-1 class CR2	Coefficient of retroreflection Evaluation according to TLP VZ, Notification Number 2007/0661/D, tab. 14, class RA3	Impact resistance Evaluation according to EN 12899-1	Resistance to weathering Evaluation according to TLP VZ, Notification Number 2007/0661/D, tab. 11 and 17
Yellow	ORALITE® 5019i-020 UV Digital Printing Ink and ORALITE® 5061-000 Transparent Film	pass	pass	pass	pass
Red	ORALITE® 5019i-030 UV Digital Printing Ink and ORALITE® 5061-000 Transparent Film	pass	pass	pass	pass
Blue	ORALITE® 5019i-050 UV Digital Printing Ink and ORALITE® 5061-000 Transparent Film	pass	pass	pass	pass
Green	ORALITE® 5019i-060 UV Digital Printing Ink and ORALITE® 5061-000 Transparent Film	pass	pass	pass	pass
Orange	ORALITE® 5019i-035 UV Digital Printing Ink and ORALITE® 5061-000 Transparent Film	pass	pass	pass	pass
Brown	ORALITE® 5019i-080 UV Digital Printing Ink and ORALITE® 5061-000 Transparent Film	pass	pass ^{*14}	pass	pass ^{*14}
Darkgreen	ORALITE® 5019i-625 UV Digital Printing Ink and ORALITE® 5061-000 Transparent Film	pass	pass ^{*15}	pass	pass ^{*15, 16}
Grey	ORALITE® 5019i-073 UV Digital Printing Ink and ORALITE® 5061-000 Transparent Film	pass	pass	pass	pass

^{*14} Evaluation of performance on 56% of requirement of colour Blue.

^{*15} Evaluation of performance on 8% of requirement of colour White.

^{*16} Evaluation according to EN 12899-1 class CR1.

Protective laminate ORALITE® 5090 Anti-Dew Film (ETA-16/0611)

Colour on white sheeting	Name of the product	Visibility characteristics		Durability	
		Daylight chromaticity & luminance factor Evaluation according to EN 12899-1 class CR2	Coefficient of retroreflection Evaluation according to TLP VZ, Notification Number 2007/0661/D, tab. 14, class RA3	Impact resistance Evaluation according to EN 12899-1	Resistance to weathering Evaluation according to TLP VZ, Notification Number 2007/0661/D, tab. 11 and 17
Yellow	ORALITE® 5019i-020 UV Digital Printing Ink and ORALITE® 5090-000 Anti-Dew Film	pass	pass	pass	pass
Red	ORALITE® 5019i-030 UV Digital Printing Ink and ORALITE® 5090-000 Anti-Dew Film	pass	pass	pass	pass
Blue	ORALITE® 5019i-050 UV Digital Printing Ink and ORALITE® 5090-000 Anti-Dew Film	pass	pass	pass	pass
Green	ORALITE® 5019i-060 UV Digital Printing Ink and ORALITE® 5090-000 Anti-Dew Film	pass	pass	pass	pass
Orange	ORALITE® 5019i-035 UV Digital Printing Ink and ORALITE® 5090-000 Anti-Dew Film	pass	pass	pass	pass
Brown	ORALITE® 5019i-080 UV Digital Printing Ink and ORALITE® 5090-000 Anti-Dew Film	pass	pass ^{*17}	pass	pass ^{*17}
Darkgreen	ORALITE® 5019i-625 UV Digital Printing Ink and ORALITE® 5090-000 Anti-Dew Film	pass	pass ^{*18}	pass	pass ^{*18, 19}
Grey	ORALITE® 5019i-073 UV Digital Printing Ink and ORALITE® 5090-000 Anti-Dew Film	pass	pass	pass	pass

^{*17} Evaluation of performance on 56% of requirement of colour Blue.

^{*18} Evaluation of performance on 8% of requirement of colour White.

^{*19} Evaluation according to EN 12899-1 class CR1.

Protective laminate ORALITE® 5095 Anti-Graffiti Film (ETA-16/0611)

Colour on white sheeting	Name of the product	Visibility characteristics		Durability	
		Daylight chromaticity & luminance factor Evaluation according to EN 12899-1 class CR2	Coefficient of retroreflection Evaluation according to TLP VZ, Notification Number 2007/0661/D, tab. 14, class RA3	Impact resistance Evaluation according to EN 12899-1	Resistance to weathering Evaluation according to TLP VZ, Notification Number 2007/0661/D, tab. 11 and 17
Yellow	ORALITE® 5019i-020 UV Digital Printing Ink and ORALITE® 5095-000 Anti-Graffiti Film	pass	pass	pass	pass
Red	ORALITE® 5019i-030 UV Digital Printing Ink and ORALITE® 5095-000 Anti-Graffiti Film	pass	pass	pass	pass
Blue	ORALITE® 5019i-050 UV Digital Printing Ink and ORALITE® 5095-000 Anti-Graffiti Film	pass	pass	pass	pass
Grün	ORALITE® 5019i-060 UV Digital Printing Ink and ORALITE® 5095-000 Anti-Graffiti Film	pass	pass	pass	pass
Orange	ORALITE® 5019i-035 UV Digital Printing Ink and ORALITE® 5095-000 Anti-Graffiti Film	pass	pass	pass	pass
Brown	ORALITE® 5019i-080 UV Digital Printing Ink and ORALITE® 5095-000 Anti-Graffiti Film	pass	pass * ²⁰	pass	pass * ²⁰
Darkgreen	ORALITE® 5019i-625 UV Digital Printing Ink and ORALITE® 5095-000 Anti-Graffiti Film	pass	pass * ²¹	pass	pass * ^{21, 22}
Grey	ORALITE® 5019i-073 UV Digital Printing Ink and ORALITE® 5095-000 Anti-Graffiti Film	pass	pass	pass	pass

*²⁰ Evaluation of performance on 56% of requirement of colour Blue.

*²¹ Evaluation of performance on 8% of requirement of colour White.

*²² Evaluation according to EN 12899-1 class CR1.

Digital Printing Black:

Colour	Name of the product	Visibility characteristics		Durability	
		Daylight chromaticity & luminance factor EN 12899-1 7.3.1.3	Coefficient of retroreflection EN 12899-1 4.1.1.4	Impact resistance EN 12899-1 4.1.2.1	Resistance to weathering EN 12899-1 4.1.1.5
Black	ORALITE® 5019i-070 UV Digital Printing Ink and ORALITE® 5061-000 Transparent Film	NR1	-	pass	pass
Black	ORALITE® 5019i-070 UV Digital Printing Ink and ORALITE® 5090-000 Anti-Dew Film	NR1	-	pass	pass
Black	ORALITE® 5019i-070 UV Digital Printing Ink and ORALITE® 5095-000 Anti-Graffiti Film	NR1	-	pass	pass

The manufacturer of the fixed vertical road traffic sign is responsible for conformity with the mandated characteristics according to EN 12899-1 by using these materials.

Hagen, 16 April 2018

StrAus-Zert

Christian Barga

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