ECS GmbH - European Certification Service
Augenschutz und Persönliche Schutzausrüstung
Laserschutz und Optische Messtechnik

Test Report

No. 1206-ECS-17

Contact person: Dr. Frank Wenzel
Phone: +49 (0)7361 9754539
Fax: +49 (0)7361 5562434
E-mail: frank.wenzel@ecs-eyesafe.de
Web: www.ecs-eyesafe.de

Test lab accredited by DAkkS D-PL-19590-02-00

Notified by the Central Authority of the Federal States for Safety Technologies (ZLS) ZLS-NB-0156

Customer	**Manufacturer**
P.R.CHINA	

Test report contains	Main part and 2 measurement reports
Number of pages in this test report	16
Product	Spectacles for occupational use, clear lenses
Arrival of samples	July 28, 2017
Period of testing	Aug 10 - 14, 2017
Test specifications (Standards)	DIN EN 166 : 2001

Remarks

Aalen, 15 Aug 2017

_____
Dr. Frank Wenzel
ECS test engineer

Test objects, tests and results

Based on the tables as written in the standards DIN EN 166, the main part assigns the test samples to the named tests. The test results are documented according to the named standards.

Signs and symbols

The requirements are described in DIN EN 166.

+	meet the requirements
–	do not meet the requirements
/	not tested
n.a.	not applicable
G	borderline case
Ab	interruption of the testing sequence
BO	Base out
BI	Base in
RT	Room temperature

Whenever the dioptric power of the surface is stated, this value was calculated using the formula F=0,523/r, where "r" is the radius of the curved surface.

The relative measurement uncertainties of the applied optical metrological instruments correspond to the required one in DIN EN 167.

Unless stated otherwise, the measurements were carried out in the main viewing point of the specimens and, in the case of lenses with corrective power, at the applicable reference point.

Test results

The annexes document the test results of each individual measurement. All results printed in bold and italic type document that the test sample did actually not meet the requirements which are demanded in the specified standards.

Samples and summary of the test results

Type:	Safety spectacles JP803, clear lenses					
Test report:	12061-ECS-17					
Number of delivered samples: 30 Number of test samples: 30						
Test se-quence	Requirement	Tests according to				Samples 17206-1 to -30
		EN	Clause	EN	Clause	
1	Marking	166	9.2			n.a.
2	Information delivered by the manufacturer / applicant	166	10			–
3	Quality of surface and material	166	7.1.3	167	5	+
4	Field of vision	166	7.1.1	168	18	+
5	Side protection	166	7.2.8	168	19	+
6	Spherical + astigmatic refractive powers	166	7.1.2	167	3.2	+
7	Prismatic power difference / prism imbalance	166	7.1.2	167	3.2	+
8	Luminous transmittance rel. NA / D65	166	7.1.2	167	6	+
9	Diffusion of light	166	7.1.2	167	4	+
10	Resistance to ageing - temperature	166	7.1.5	168	5	+
11	Resistance to ageing - UV radiation	166	7.1.5	168	6	+
12	Increased robustness (S)	166	7.1.4	168	3.2	+
13	Protection against high-speed particles, low energy impact (F)	166	7.2.2	168	9	+
14	Resistance to ignition	166	7.1.7	168	7	+
15	Resistance to corrosion	166	7.1.6	168	8	n.a.
See the measurement report 1 for the individual results of each test sample.						

Samples and summary of the test results

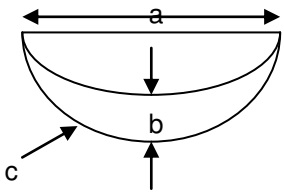
Type:	Safety spectacles JP805, clear lenses					
Test report:	12062-ECS-17					
Number of delivered samples: 30 Number of test samples: 30						
Test se-quence	Requirement	Tests according to				Samples 17206-31 to -60
		EN	Clause	EN	Clause	
1	Marking	166	9.2			n.a.
2	Information delivered by the manufacturer / applicant	166	10			–
3	Quality of surface and material	166	7.1.3	167	5	+
4	Field of vision	166	7.1.1	168	18	+
5	Side protection	166	7.2.8	168	19	+
6	Spherical + astigmatic refractive powers	166	7.1.2	167	3.2	+
7	Prismatic power difference / prism imbalance	166	7.1.2	167	3.2	+
8	Luminous transmittance rel. NA / D65	166	7.1.2	167	6	+
9	Diffusion of light	166	7.1.2	167	4	+
10	Resistance to ageing - temperature	166	7.1.5	168	5	+
11	Resistance to ageing - UV radiation	166	7.1.5	168	6	+
12	Increased robustness (S)	166	7.1.4	168	3.2	+
13	Protection against high-speed particles, low energy impact (F)	166	7.2.2	168	9	+
14	Resistance to ignition	166	7.1.7	168	7	+
15	Resistance to corrosion	166	7.1.6	168	8	n.a.
See the measurement report 2 for the individual results of each test sample.						

Test mark:	12061-ECS-17
Type:	Safety spectacles JP803, clear lenses

Measurement Report 1

Description of the type

Design:



Dimensions / mm:
a: 149
b: 57
c: 193

Figure 1: Safety spectacles with clear lenses, the length of the black temples are adjustable

Vertex power / dpt:
Front surface: horizontal: +4.0 – vertical: +4.3
Back surface: horizontal: - 4.0 – vertical: - 4.3

Middle thickness / mm: 2.10 ± 0.1 mm
Thickness in nasal area: 2.00 ± 0.1 mm
Peripheral thickness: 2.10 ± 0.1 mm

Filter:	Identification mark:	none
	Material:	Polycarbonate
Frame:	Identification mark:	none
	Material:	Nylon, polycarbonate
Information from the producer:	available, ***but not complete, following information is missing*** • details of suitable accessories and spare parts; • the obsolescence deadline or period of obsolescence; • the significance of marking on the frame and the ocular; • warning concerning the compatibility of marking; • a note to instruct that if protection against high speed particles at extremes of temperature is required then the selected eye protector should be marked with the letters T immediately after the impact letter, i.e. FT,BT or AT. If the impact letter is not followed by letter T then the eye protector shall only be used against high speed particles at room temperature.	

Test mark:	12061-ECS-17
Type:	Safety spectacles JP803, clear lenses

Quality of material and surface, refractive powers, diffusion of light, transmittance

test ↓ sample →			17206 -1	-2	-3	-4	-5	-6
quality of material and surface			+	+	+	+	+	+
field of vision			+	+	+	+	+	+
side protection			+	+	+	+	+	+
spherical power	dpt	R L	-0.03 -0.03	-0.03 -0.03	-0.03 -0.04	-0.03 -0.03	-0.05 -0.03	-0.04 -0.03
astigmatic power	dpt	R L	0.04 0.02	0.03 0.04	0.04 0.03	0.04 0.02	0.05 0.05	0.05 0.04
prismatic power / prism imbalance (horizontal/vertical)	cm/m		BO 0.15 / 0.03	BO 0.13 / 0.03	BO 0.13 / 0.03	BO 0.15 / 0.0	BO 0.08 / 0.13	BO 0.13 / 0.05
optical class			1	1	1	1	1	1
reduced luminance coefficient, diffusion of light	$\frac{cd/m^2}{lx}$	R L	0.19 0.09	0.09 0.09	0.07 0.08	0.05 0.12	0.08 0.71	0.13 0.08
luminous transmittance rel NA τ		%	89.6	89.6	89.5	89.7	90.3	89.5
luminous transmittance rel D65 τ		%	89.5	89.5	89.4	89.6	90.2	89.4

Test mark:	12061-ECS-17
Type:	Safety spectacles JP803, clear lenses

Quality of material and surface, refractive powers after test to thermal ageing

test ↓ sample →			17206 -1	17206 -2	17206 -3
quality of material and surface			no visible surface modification after thermal ageing		
spherical power	R L	dpt	-0.03 -0.03	-0.03 -0.03	-0.03 -0.03
astigmatic power	R L	dpt	0.02 0.01	0.02 0.00	0.02 0.00
prismatic power / prism imbalance (horizontal/vertical)		cm/m	BO 0.25 / 0.00	BO 0.25 / 0.03	BO 0.23 / 0.00

Quality of material and surface, diffusion of light, transmittance after test to UV ageing

test ↓ sample →		17206 -4	17206 -5	17206 -6
quality of material and surface		no visible surface modification or coating depletion after UV ageing or after breathing on the surface		
reduced luminance coefficient, diffusion of light	$\frac{cd/m^2}{lx}$	0.26	0.37	0.37
reduced luminance coefficient, diffusion of light after breathing on the surface	$\frac{cd/m^2}{lx}$	0.22	0.24	0.38
luminous transmittance rel NA τ	%	89.0	89.5	88.8
relative change	%	0.7	0.9	0.8

Test mark:	12061-ECS-17
Type:	Safety spectacles JP803, clear lenses

Increased robustness

sample ↓ test →	test temperature / °C	test point	results
17206-7	-5	left frontal	+
17206-8	-5	left frontal	+
17206-9	-5	right frontal	+
17206-10	-5	right frontal	+
17206-11	-5	left side	+
17206-12	-5	right side	+
17206-13	+55	left frontal	+
17206-14	+55	left frontal	+
17206-15	+55	right frontal	+
17206-16	+55	right frontal	+
17206-17	+55	left side	+
17206-18	+55	right side	+

Test mark:	12061-ECS-17
Type:	Safety spectacles JP803, clear lenses

Protection against high-speed particles / resistance to energy impact

sample ↓ test →	test temperature / °C	test point	speed / m/s	results
17206-19	RT	left frontal	≥ 45	+
17206-20	RT	left frontal	≥ 45	***Fixture of frame to lenses break***
17206-21	RT	right frontal	≥ 45	+
17206-22	RT	right frontal	≥ 45	+
17206-23	RT	left side	≥ 45	+
17206-24	RT	right side	≥ 45	+
17206-25	RT	left frontal	≥ 45	+
17206-26	RT	left frontal	≥ 45	+
17206-27	RT	right frontal	≥ 45	+
17206-28	RT	right frontal	≥ 45	+
17206-29	RT	left side	≥ 45	+
17206-30	RT	right side	≥ 45	+

Figure 2: Sample 17206-20, fixture of frame to lenses breaks caused by impact at 45 m/s.

Test mark:	12061-ECS-17
Type:	Safety spectacles JP803, clear lenses

Repeated measurement
Protection against high-speed particles / resistance to energy impact

sample ↓ test →	test temperature / °C	test point	speed / m/s	results
17206-13	RT	left frontal	≥ 45	+
17206-14	RT	left frontal	≥ 45	+
17206-15	RT	left frontal	≥ 45	+
17206-16	RT	right frontal	≥ 45	+
17206-17	RT	right frontal	≥ 45	+
17206-18	RT	right frontal	≥ 45	+

Resistance to ignition

test ↓ sample →	17206		
	-10	-11	-12
flammability	temperature ≥ 650 °C no ignition, no further glowing		

Resistance to corrosion

test ↓ sample →	17206
corrosion	not observable, metal screws in hinge have no direct contact with the skin.

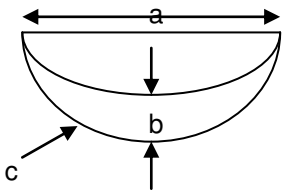
– End of Measurement Report 1 –

Test mark:	12062-ECS-17
Type:	Safety spectacles JP805, clear lenses

Measurement Report 2

Description of the type

Design:



Dimensions / mm:
a: 158
b: 60
c: 195

Figure 1: Safety spectacles with clear lenses, clear temples

Vertex power / dpt:
Front surface: horizontal: +3.9 – vertical: +4.1
Back surface: horizontal: - 4.2 – vertical: - 4.3

Middle thickness / mm: 2.35 ± 0.1 mm
Thickness in nasal area: 2.25 ± 0.1 mm
Peripheral thickness: 2.50 ± 0.1 mm

Filter:	Identification mark:	none
	Material:	Polycarbonate
Frame:	Identification mark:	right temple: Pro-Fit ® 8150 left temple: EN 166 - F CE
	Material:	Polycarbonate
Information from the producer:		available, ***but not complete, following information is missing*** • details of suitable accessories and spare parts; • the obsolescence deadline or period of obsolescence; • the significance of marking on the frame and the ocular; • warning concerning the compatibility of marking; • a note to instruct that if protection against high speed particles at extremes of temperature is required then the selected eye protector should be marked with the letters T immediately after the impact letter, i.e. FT,BT or AT. If the impact letter is not followed by letter T then the eye protector shall only be used against high speed particles at room temperature.

Test mark:	12062-ECS-17
Type:	Safety spectacles JP805, clear lenses

Quality of material and surface, refractive powers, diffusion of light, transmittance

test ↓ sample →			17206 -31	-32	-33	-34	-35	-36
quality of material and surface			+	+	+	+	+	+
field of vision			+	+	+	+	+	+
side protection			+	+	+	+	+	+
spherical power	dpt	R L	-0.03 -0.01	-0.03 0.00	-0.03 0.00	-0.03 0.00	-0.03 0.00	-0.03 0.00
astigmatic power	dpt	R L	0.01 0.04	0.02 0.05	0.01 0.03	0.01 0.04	0.01 0.05	0.01 0.04
prismatic power / prism imbalance (horizontal/vertical)	cm/m		BO 0.18 / 0.05	BO 0.18 / 0.05	BO 0.18 / 0.08	BO 0.18 / 0.05	BO 0.20 / 0.05	BO 0.18 / 0.05
optical class			1	1	1	1	1	1
reduced luminance coefficient, diffusion of light	$\frac{cd/m^2}{lx}$	R L	0.37 0.32	0.29 0.35	0.15 0.24	0.28 0.37	0.35 0.53	0.28 0.34
luminous transmittance rel NA τ		%	88.9	89.2	89.4	89.6	88.7	89.4
luminous transmittance rel D65 τ		%	88.7	89.0	89.2	89.3	88.6	89.2

Test mark:	12062-ECS-17
Type:	Safety spectacles JP805, clear lenses

Quality of material and surface, refractive powers after test to thermal ageing

test ↓ sample →			17206		
			-31	-32	-33
quality of material and surface			no visible surface modification after thermal ageing		
spherical power	R L	dpt	-0.03 -0.01	-0.04 -0.01	-0.03 -0.01
astigmatic power	R L	dpt	0.00 0.04	0.00 0.05	0.01 0.04
prismatic power / prism imbalance (horizontal/vertical)		cm/m	BO 0.20 / 0.05	BO 0.23 / 0.05	BO 0.23 / 0.08

Quality of material and surface, diffusion of light, transmittance after test to UV ageing

test ↓ sample →		17206		
		-34	-35	-36
quality of material and surface		no visible surface modification or coating depletion after UV ageing or after breathing on the surface		
reduced luminance coefficient, diffusion of light	$\frac{cd/m^2}{lx}$	0.34	0.68	0.28
reduced luminance coefficient, diffusion of light after breathing on the surface	$\frac{cd/m^2}{lx}$	0.36	0.74	0.25
luminous transmittance rel NA τ	%	89.0	88.3	89.0
relative change	%	0.6	0.4	0.5

Test mark:	12062-ECS-17
Type:	Safety spectacles JP805, clear lenses

Increased robustness

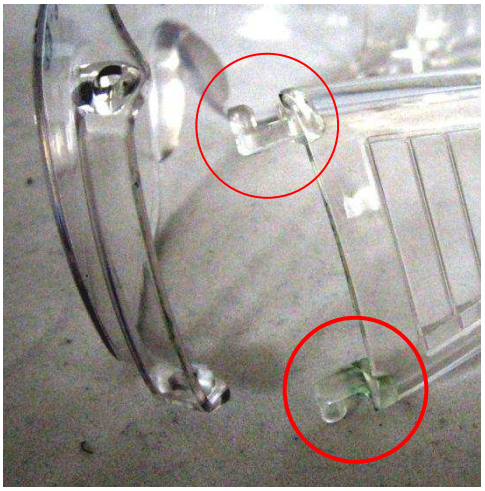
sample ↓ test →	test temperature / °C	test point	results
17206-37	-5	left frontal	+
17206-38	-5	left frontal	+
17206-39	-5	right frontal	+
17206-40	-5	right frontal	+
17206-41	-5	left side	+
17206-42	-5	right side	+
17206-43	+55	left frontal	+
17206-44	+55	left frontal	+
17206-45	+55	right frontal	+
17206-46	+55	right frontal	+
17206-47	+55	left side	+
17206-48	+55	right side	+

Test mark:	12062-ECS-17
Type:	Safety spectacles JP805, clear lenses

Protection against high-speed particles / resistance to energy impact

sample ↓ test →	test temperature / °C	test point	speed / m/s	results
17206-49	RT	left frontal	≥ 45	+
17206-50	RT	left frontal	≥ 45	+
17206-51	RT	right frontal	≥ 45	+
17206-52	RT	right frontal	≥ 45	+
17206-53	RT	left side	≥ 45	***Fixture of temple to lenses breaks***
17206-54	RT	right side	≥ 45	+
17206-55	RT	left frontal	≥ 45	+
17206-56	RT	left frontal	≥ 45	+
17206-57	RT	right frontal	≥ 45	+
17206-58	RT	right frontal	≥ 45	+
17206-59	RT	left side	≥ 45	+
17206-60	RT	right side	≥ 45	+

Figure 2: Sample 17206-53, fixture of temple to lenses breaks caused by impact at 45 m/s.



Test mark:	12062-ECS-17
Type:	Safety spectacles JP805, clear lenses

Repeated measurement
Protection against high-speed particles / resistance to energy impact

sample ↓ test →	test temperature / °C	test point	speed / m/s	results
17206-43	RT	left side	≥ 45	+
17206-44	RT	left side	≥ 45	+
17206-45	RT	left side	≥ 45	+
17206-46	RT	right side	≥ 45	+
17206-47	RT	right side	≥ 45	+
17206-48	RT	right side	≥ 45	+

Resistance to ignition

test ↓ sample →	17206		
	-40	-41	-42
flammability	temperature ≥ 650 °C no ignition, no further glowing		

Resistance to corrosion

test ↓ sample →	17206
corrosion	not observable, metal screws in hinge have no direct contact with the skin.

– End of Measurement Report 2 –