



Test Report

Report No.: PL 2101009

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Applicant: Hunan Zhenheyikang Medical Instrument Co., Ltd

Address of Applicant: No.6 Building Jingxiang Energy, No.55 Xianguang east road, Gaoxin district, Xiangtan, Hunan

Date of Receiving Samples: Jan 02, 2021

Testing Period: Jan 04, 2021 to Jan 06, 2021

Description of Samples

The submitted sample and sample information was/were submitted and identified by/on behalf of client;

Sample Name: Medical Isolation Face Shield

Model No.: 290 x 240mm

Device Type: Spectacles Goggles Face Shields

Quantity: 8 Pairs

Material: Plastic

Scale No.: Not provided

Lenses Type: Clear

Frame Color: Transparent

Lenses Color: Transparent

Manufacturer/Brand: Not provided

Buyer : Not provided

Dimension: Not provided

P/O. No.: Not provided

Country of Origin: China

Country of Destination: Not provided

Tests Conducted: As requested by the applicant, refer to attached page(s) for details.



To be continued

Issued by stamp

Date of Issued: Jan 06, 2021

For and on behalf of:
**Shenzhen Precision Eyewear
 Testing & Inspection Services Co., Ltd.**

Manager: WenHua Li

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Conclusion:

<u>Tested Samples</u>	<u>Required Standard(s)</u>	<u>Results</u>
Submitted Samples	ANSI / ISEA Z87.1 - 2015 Occupation and Educational Personal Eye and Face Protection Devices, only test the related parameters, please refer to "Tests Conducted Summary" for details	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail

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Tests Conducted Summary

CLAUSES	REQUIREMENTS		RESULTS
5. General Requirements			
5.1 Optical Requirements			
5.1.1	Optical Quality		P
5.1.2	Luminous Transmission (Applicable for clear lenses)		P
5.1.3	Haze (Applicable for clear plano lenses)		P
5.1.4	Refractive Power, Astigmatism, Resolving Power, Prism and Prism Imbalance for Plano Protectors (Exempt from the requirement for the filter lenses of shade 9 or higher.)		P
5.2	Physical Requirements		P
5.2.1	Drop Ball Impact Resistance (Protector first tested to and meeting the requirements of Section 6.2 are exempt from drop ball impact testing.)		P
5.2.2	Ignition (exclusive of textiles or elastic bands)		P
5.2.3	Corrosion Resistance of Metal Components		NA (No Metal Part)
5.2.4	Minimum Coverage Area		P
5.3	Markings		NR
5.4 Other Requirements			
5.4.1	Vented Goggles: The vented portion shall be such that the openings exclude spherical objects 1.5mm (0.06 in.) in diameter or greater and shall be no direct straight-line passage.		NA
5.4.4	Frames for Replaceable or Removable Lenses: Shall be supplied with detailed specifications on the required lens bevel design or mounting technique and nominal lens sizing		NA
5.5 Replaceable Lenses			
5.5.1	Goggles	Round lenses measuring 50 mm shall have a dimensional tolerance of ± 0.2 mm;	NA
		Rectangular lenses measuring 51 x 108 mm shall have a dimensional tolerance of ± 0.8 mm.	NA
5.5.2	Welding Helmets and Hand shields		NA

Remark: P = Pass; F = Fail; NA = Not Applicable, NR=Not Required; X=Checked;

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CLAUSES	REQUIREMENTS	RESULTS
6. Impact Protector Requirements		
6.1.1	Protectors Marked for Impact Rated Protectors: Impact-rated protectors and replaceable components shall meet the impact requirements and marking requirements in this standard.	NA (No Claimed)
6.1.2	Frames and Shells: Frames shall meet with high mass impact and high velocity impact (Exempt from the penetration requirement.)	NA (No Claimed)
6.1.3	Lateral (Side) Coverage	NA (No Claimed)
6.2 Impact Requirements		
6.2.2	High Mass Impact	NA (No Claimed)
6.2.3	High Velocity Impact	NA (No Claimed)
6.2.4	Penetration Test (lenses only)	NA (No Claimed)
7. Optical Radiation Protector Requirements		
7.1	Protectors with Clear lenses	NA (Clear Lenses)
7.2 Protector providing Filtrations of Optical Radiation		
7.2.1.2	Visible Light Filters (Refer to ANSI Z80.3-2010)	NA (Clear Lenses)
7.2.1.3	Variations in Luminous Transmittance	NA (Clear Lenses)
8.1	Droplet and Splash Hazard	P
10	Instruction, Use and Maintenance	NR

Remark: P = Pass; F = Fail; NA = Not Applicable, NR=Not Required; X=Checked

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Test Results

Optical Quality — Clause 5.1.1 & 9.1/Physical Requirements — Clause 5.2

Sample No.	Defects		Comment	Results
	Observed	Absent		
2101009-01		X	--	P
Requirements: 1. Optical Quality: Protector lenses shall be free of striae, bubbles, waves and other visible defects which would impair their optical quality. 2. Physical Requirements: Protectors shall be free from projections, sharp edges or other defects which are likely to cause discomfort or injury during use.				

Luminous Transmission (Apply for Clear Plano Lenses only) — Clause 5.1.2 & 7.1 & 9.2

Sample No.	Luminous Transmission (%)		Results
	Left	Right	
2101009-01	89.5	89.3	P
Requirements: Clear plano, reader, magnifier and prescription lenses shall have a luminous transmission not less than 85%.			

Measurement Uncertainty (if necessary):

Haze (Apply for Clear Plano Lenses only) — Clause 5.1.3&9.3

Sample No.	Haze (%)		Results
	Left	Right	
2101009-01	1.7	1.7	P
Requirements: Clear plano lens shall exhibit not more than 3% haze.			

Measurement Uncertainty (if necessary):

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Refractive Power, Astigmatism, Resolving Power — Clause 5.1.4 & 9.4

Sample No.	Location	Spherical Power (D)	Astigmatic Power (D)	Resolving Power	Results
2101009-02	Left	--	--	More than 20	P
	Right	--	--	More than 20	
Specification	<input type="checkbox"/> Spectacle / Reader	+/- 0.06	≤0.06	Pattern 20	
	<input type="checkbox"/> Goggle /Full-facepiece respirator	+/- 0.06	≤0.06	Pattern 20	
	<input checked="" type="checkbox"/> Faceshield windows/ Loose- fitting respirator	No requirement		Pattern 20	
	<input type="checkbox"/> Welding helmet lenses	+/- 0.06	≤0.06	Pattern 20	

Measurement Uncertainty (if necessary):

Remark: 1. The tolerance on refractive power and astigmatism power are not requirement for faceshield windows;

*=Failed data, the same as below

Prismatic Power and Prism Imbalance for Plano Protectors — Clause 5.1.4 & 9.4

Sample No.	Vertical Imbalance (Δ)	Horizontal Imbalance (Δ)		Prismatic (Δ)		Results
		Base Out	Base In	Left	Right	
2101009-02	0.00	0.10	--	0.05	0.05	P
Requirement:						
<input type="checkbox"/> Spectacle/Reader	≤0.25	≤0.50	≤0.25	≤0.50		
<input type="checkbox"/> Goggle/Full- facepiece respirator	≤0.125	≤0.50	≤0.125	≤0.25		
<input checked="" type="checkbox"/> Faceshield windows / Loose- fitting respirator	≤0.37	≤0.75	≤0.125	≤0.37		
<input type="checkbox"/> Welding helmet lenses	≤0.25	≤0.75	≤0.25	≤0.50		

Measurement Uncertainty (if necessary):

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Drop Ball Impact Resistance — Clause 5.2.1 & 9.6

Sample No.	Impact Position	Defects		Comment	Results
		Observed	Absent		
2101009-03	Left		X	---	P
2101009-04	Right		X	---	P
2101009-05	Left		X	---	P
2101009-06	Right		X	---	P

Requirements:

A complete device shall fail if any of the following occurs:

- Lens(Lens only) fracture
- piece fully detached from the inner surface
- penetration of the rear surface
- lens not retained

Ignition — Clause 5.2.2 & 9.7

Sample No.	Continued combustion		Comment	Results
	Observed	Absent		
2101009-07		X	--	P

Requirements:

The frame shall be no continued combustion after withdrawal of the test rod.

Minimum Coverage Area — Clause 5.2.4

Sample No.	Type	Test Position	Minimum Coverage area		Comment	Results
			Pass	Fail		
2101009-02	Adults	Left	X		---	P
		Right	X		---	P

Requirements:

1. For adult: the frame, lens housing or carrier and lens(es) shall cover in plane view an area of not less than 40 mm in width and 33 mm in height (elliptical) in front of each eye, centered on the geometrical center of the lens.
2. For children: the frame, lens housing or carrier and lens(es) shall cover in plane view an area of not less than 34mm in width and 28 mm in height (elliptical), centered on the geometrical center of the lens.

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Droplet and Splash Hazard — Clause 8.1

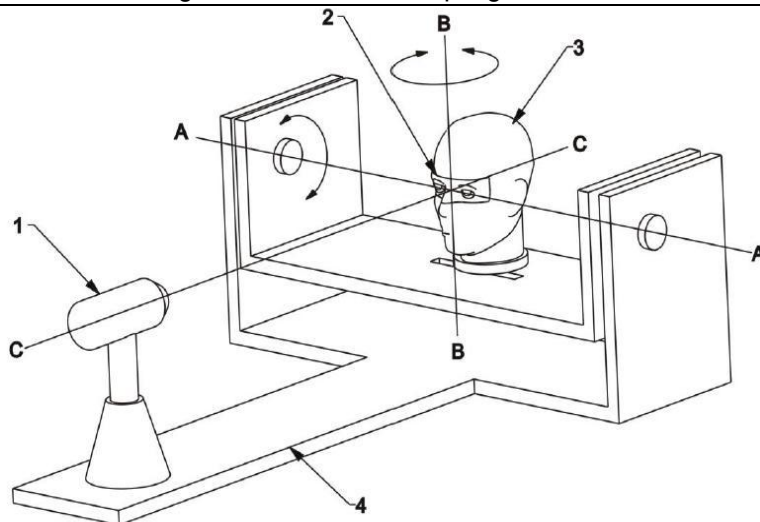
Sample No.	Test Point	Contact		Comment	Results
		Yes	No		
2101009-08	a		X	--	P
	b		X	--	P
	c		X	--	P
	d		X	--	P
	e		X	--	P
	f		X	--	P

Requirements:

As a failure any location where laser beam contacts the rectangle without first intercepting the faceshield.

Test Point:

- Facing forwards and rotated $(45\pm 1)^\circ$ forwards about horizontal axis A
- Facing forwards and rotated $(45\pm 1)^\circ$ backwards about horizontal axis A
- Rotated $(90\pm 1)^\circ$ to the left about vertical axis B and rotated $(45\pm 1)^\circ$ forwards about horizontal axis A
- Rotated $(90\pm 1)^\circ$ to the left about vertical axis B and rotated $(45\pm 1)^\circ$ backwards about horizontal axis A
- Rotated $(90\pm 1)^\circ$ to the right about vertical axis B and rotated $(45\pm 1)^\circ$ forwards about horizontal axis A
- Rotated $(90\pm 1)^\circ$ to the right about vertical axis B and rotated $(45\pm 1)^\circ$ backwards about horizontal axis A



Key

- laser beam or cylindrical tube fitted with cross wires
- rectangle enclosing the eye region
- headform
- support frame

----- Report End -----

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