

TEST REPORT

Date: January 12, 2010

Report: 10005187

Issue: 1

Company: **Elvex Corp.**

13, Trowbridge Drive, PO Box 850, Bethel, CT 06801 USA

Test: ANSI Z87.1-2003 “Practice for Occupational and Educational Eye and Face Protection” Section 7.

Models: **SG-18**

Sample A (SG-18C) –

Clear nose bridge, Clear/Fire Red tips, with Clear-HC lens x 30 pcs

Sample B (SG-18G) –

Black nose bridge, T-GrayClear/Fire Red tips, with Gray-HC lens x16 pcs

Sample C (SG-18A) –

Gray nose bridge, T-yellow/Gray tips, with Amber-HC lens x 16 pcs

Sample D (SG-18-I/O) –

Fire Red nose bridge, Clear-UV400/Fire Red tips, with I/O Mirror-HC lens x 16 pcs



Test Results:

7.4.2.1.1 High Mass Impact

High impact spectacles shall be capable of resisting an impact from a pointed projectile weighing 500 g (17.6 oz) dropped from a height of 127 cm (50.0 in). The spectacles shall be tested in accordance with section 14.1. No piece shall be detached from the inner surface of any spectacle component and the lens shall be retained in the frame. In addition, the lens shall not fracture.

Left eye sample A1, B1, C1, D1	PASS
Left eye sample A2, B2, C2, D2	PASS
Right eye sample A3, B3, C3, D3	PASS
Right eye sample A4, B4, C4, D4	PASS

7.4.2.1.2 High velocity Impact

High impact spectacle shall be capable of resisting an impact from a 6.35 mm (0.25 in) diameter steel ball traveling at a velocity of 45.7 m/s (150 ft/s). The spectacles shall be tested in accordance with section 14.2. No contact with the eye of the headform is permitted as a result of impact. No piece shall be detached from the inner surfaces of any spectacle component and the lens shall be retained in the frame. In addition, the lens shall not fracture.

Velocity (ft/s)

<u>Impact Location</u>	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	<u>Result</u>
Left eye 15° nasal	158	---	---	---	PASS
Left eye 0° nasal	159	155	157	156	PASS
Left eye 15° temporal	156	---	---	---	PASS
Left eye 30° temporal	158	---	---	---	PASS
Left eye 45° temporal	155	157	157	155	PASS
Left eye 60° temporal	157	---	---	---	PASS
Left eye 75° temporal	159	---	---	---	PASS
Left eye 90° temporal	156	158	158	157	PASS
Left eye 90° temporal +10 mm	156	---	---	---	PASS
Left eye 90° temporal -10 mm	155	---	---	---	PASS
Right eye 15° nasal	155	---	---	---	PASS
Right eye 0° nasal	158	153	159	158	PASS
Right eye 15° temporal	156	---	---	---	PASS
Right eye 30° temporal	156	---	---	---	PASS
Right eye 45° temporal	156	155	158	158	PASS
Right eye 60° temporal	155	---	---	---	PASS
Right eye 75° temporal	157	---	---	---	PASS
Right eye 90° temporal	157	158	159	159	PASS
Right eye 90° temporal +10 mm	158	---	---	---	PASS
Right eye 90° temporal -10 mm	157	---	---	---	PASS

Optical Laboratories

Lab Temp: 23°C

Lab RH: 47

7.4.2.1.3 Penetration Test (For Plastic lenses only)

High Impact plano spectacle lens shall be capable of resisting penetration from a weighted projectile weighing 44.2 gm (1.56 oz) dropped from a height of 127 cm (50.0 in) when tested in accordance with section 14.5. The lens shall not fracture or be pierced through as a result of this test. No piece shall be detached from the inner surface of any spectacle component and the lens shall be retained in the frame.

PASS

7.4.2.2 Thickness

When used in a frame marked Z87-2, the lenses shall be not less than 2.0 mm (0.079 in) thick.

PASS

7.4.3.1 Optical Qualities

The lenses shall be free of striae, bubbles, waves, and other visible defects and flaws which would impair their optical quality per the specifications and test methods in ANSI Z87.1-2003.

PASS

7.4.3.2 Prismatic Power

Complete devices shall be tested in accordance with section 14.9. The prismatic power shall not exceed 0.50 Δ in any direction. Vertical prism imbalance shall not exceed 0.25 Δ , and horizontal prism imbalance shall not exceed 0.25 Δ "Base In" or 0.50 Δ "Base Out".

	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	<u>Result</u>
Complete Prism	0.09	0.02	0.03	---	PASS
Vertical Imbalance	0.18	0.09	0.04	0	PASS
Horizontal Imbalance In/Out	0.07 base out	0.01 base in	0	0	PASS

7.4.3.3 Refractive Power

Complete devices shall be tested in accordance with section 14.10. The refractive power, in any meridian, shall not exceed +/- 0.06 D. The maximum astigmatism (the absolute difference in power measured in the two extreme meridians) shall not exceed 0.06D.

	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	<u>Result</u>
Refractive Left	0.02	0	0	0	PASS
Refractive Right	0	-0.01	0	0	PASS
Max Astigmatism Left	0	0	0	0	PASS
Max Astigmatism Right	0	0	0	0	PASS

7.4.3.4 Resolving Power

Lens shall be tested for resolving power in accordance with section 14.10. All lines in both orientations of NBS Pattern 20 shall be clearly resolved.

	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	<u>Result</u>
Left	24	24	28	20	PASS
Right	28	24	24	20	PASS

