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**INC. LABORATORIES**

Test Report T4485-01-1 Issue 1  
CSA Z94.3-2007  
Shan Shui Spectacles Industrial Co., Ltd.  
544 Spectacles  
09 February 2009



Certificate 1722.01

Approved by:

Prepared by:

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Issued to: Shan Shui Spectacles Industrial Co., Ltd.  
No. 43, Hsin I S Rd.  
Tainan 702,  
Taiwan, R.O.C.

Date: 09 February 2009  
Report: T4485-01-1  
Issue: 1  
Page: 1 of 4

**Objective:**

Contract testing to CAN/CSA-Z94.3-07; "Eye and Face Protection."  
Section 6 General Requirements  
Section 7 Class 1 Protectors—Spectacles

**Samples:**

544 Spectacles

Description	Quantity	Sample ID
Clear Lenses w/Clear Temples	21	5A-x

Date submitted: 21 January 2009

**Procedures:**

Testing protocols in accord with good laboratory practice were employed unless otherwise specified, for all tests.

All tests were conducted in a standard laboratory atmosphere unless otherwise specified.

Testing procedures as specified within Section 12 of CAN/CSA-Z94.3-07 were followed, unless otherwise indicated.

Samples were randomly selected from the quantity provided and tested in the as-received condition unless otherwise stated.

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 Page: 2 of 4

**Assessment Summary:**

Dates tested: 05 through 06 February 2009

CAN/CSA-Z94.3-07 Requirements	Compliant	Non Compliant
6. General Requirements		
6.1 Impact Resistance	X	
6.2 Ignition/Flammability Requirements		
6.2.1 Ignition Resistance	X	
6.2.2 Flame Resistance	X	
6.3 Replacement Components	Not applicable	
6.4 Clear Zero-Power Lenses		
6.4.1 Size	See 7.1	
6.4.2 Residual Power	X	
6.4.3 Resolving Power	X	
6.4.4 Prismatic Deviation	X	
6.4.5 Haze	X	
6.4.6 Luminous Transmittance	X	
6.5 Zero-Power Filters	Not applicable	
6.6 Zero Power Special Purpose Lenses	Not applicable	
7. Class 1 Protectors - Spectacles		
7.1 Minimal Frontal Coverage	X	
7.2 Side Protection	X	
13. Marking	Not assessed	
16. Sun protection for outdoor worker	Not claimed	

Samples as assessed meet the requirements of CAN/CSA-Z94.3-07 for Class 1A spectacles with side protection.

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 Page: 3 of 4

**6.1 Impact Resistance**

Sample ID	Location	Weight (g) Before	Weight (g) After	Velocity (ft/sec)	Pass	Fail
5A-4	Bridge	24.1	24.1	152	X	
5A-5	Left Ocular Center 0°	24.2	24.2	153	X	
5A-6	Right Ocular Center 0°	23.9	24.0	152	X	
5A-7	Left Ocular, 0°-15mm to temple	23.9	24.0	153	X	
5A-8	Right Ocular, 0°-15mm to temple	24.2	24.3	152	X	
5A-9	Frontal (0°) Temple End Piece	24.1	24.1	153	X	
5A-10	Lateral (90°) Temple End Piece and Eyewire	24.0	24.0	152	X	
5A-11	Lateral 90° Left, 10mm behind Apex	24.2	24.2	152	X	
5A-12	Lateral 90° Left, 10mm behind Apex up 10mm	24.2	24.2	152	X	
5A-13	Lateral 90° Left, 10mm behind Apex down 10mm	24.1	24.1	152	X	

**6.2.1 Ignition Resistance; Result: Pass**

Lenses and Temples did not ignite or continue to glow or be consumed after removal of the steel rod.

**6.2.2 Flame Resistance: Result: Pass**

Lenses and Temples burned at a rate less than 75 mm/min.

**6.4.2 Residual Power**

Sample ID	Left Ocular (D)		Right Ocular (D)		Pass	Fail
5A-1	0.02	-0.01	0.00	-0.04	X	
5A-2	0.02	-0.02	-0.01	-0.04	X	
5A-3	0.02	-0.02	0.01	-0.03	X	
Specification:	≤ +/- 0.12					

Note: Tested in a simulated as worn position.

**6.4.3 Resolving Power**

Sample ID	Pattern Resolved (seconds of arc)		Pass	Fail
	Left Ocular	Right Ocular		
5A-1	<60-s	<60-s	X	
5A-2	<60-s	<60-s	X	
5A-3	<60-s	<60-s	X	
Specification:	≤ 60			

Note: Tested in a simulated as worn position.

**6.4.4 Prismatic Deviation**

Sample ID	Vertical Imbalance (cm/m)	Horizontal Imbalance (cm/m)	Pass	Fail
5A-1	<0.05	<0.05 Base In	X	
5A-2	<0.05	<0.05 Base In	X	
5A-3	<0.05	0.09 Base In	X	
Specification:	≤ 0.25	≤ 0.75 Base Out, ≤ 0.25 Base In		

Measured using method defined in ANSI Z87.1 with sample mounted as worn on a headform.

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 Page: 4 of 4

**6.4.5 Haze**

Sample ID	Location	Measured Value (%)	Pass	Fail
5A-1	Left	0.18	X	
5A-2	Right	0.18	X	
5A-2	Left	0.12	X	
Specification:		≤ 2		

Measured using method defined in ANSI Z87.1.

**6.4.6 Luminous Transmittance**

Sample ID	Left (%)	Right (%)	Pass	Fail
5A-1	89.2	89.9	X	
5A-2	89.4	90.1	X	
5A-3	89.5	90.0	X	
Specification:		≥ 85		

**7.1 Minimal Frontal Coverage**

Sample ID	Height (mm)	Width (mm)	Field of View		Pass	Fail
			Temporal (°)	Vertical (°)		
5A-1	43	65	>90	>115	X	
Specification		≥ 33	≥ 40	≥ 80		

**7.2 Side Protection**

7.2.1 Side protection is incorporated as part of lens/temple.

7.2.2 Coverage

Sample ID	At Front of Eye		20mm Behind Apex		Pass	Fail
	Above Center (mm)	Below Center (mm)	Above Center (mm)	Below Center (mm)		
5A-1	20	20	20	7	X	
Specification		≥ 16	≥ 10	≥ 7		

7.2.3 Side protection is not vented and abuts spectacle front.

**Sample Photograph:**



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