



REPORT

3933 US ROUTE 11 CORTLAND, NEW YORK 13045

Order No. G100775972

Date: October 28, 2012

REPORT NO. 100775972CRT-003

TEST OF SAFETY GLASSES MODELS

X5 CLEAR	X5 GREY
X5 AMBER	X5 GREY WITH GOLD MIRROR

RENDERED TO

VICSA SAFETY SA
PINTOR CICARELLI 683
8950002 SAN JOAQUIN, CHILE

DATA REQUESTED

The client requested optical testing to Section 5 of ANSI Z87.1.

AUTHORIZATION

This test service was authorized by signed quote number 500384587.

REFERENCE DOCUMENTS:

The following Test Standards were used in part or in total to test each sample:

ANSI Z87.1 2010

American National Standard for Occupational and Educational Personal Eye and Face Protection Devices

ASTM D1003 2007

Standard Test Method for Haze and Luminous Transmittance of Transparent Plastics

DEVICES SUBMITTED

The samples were received by Intertek in undamaged condition, and were tested as received. The sample designations were 775972-07 through 775972-10

DATES OF TESTS

October 22 through October 26, 2012



EQUIPMENT LIST

Equipment Used	Model Number	Control Number	Calibration Date	Calibration Due Date
Optronics Spectroradiometer	OL750D	E288	10/24/12	10/25/12
Optronics Spectroradiometer	OL770	O320	10/23/12	10/24/12
Gardner Hazemeter	XL211	N328	10/25/12	11/25/12
Extech Hygrothermometer	445703	T1305	07/12/12	07/12/13
Intertek 100ft Goniometer	NA	N060	08/14/12	08/14/13

TESTS

Section 5.1.1 Optical Quality:

Lenses shall be free of striae, bubbles, waves and other visible defects which would impair their optical quality.

Section 5.1.2 Luminous Transmission:

Clear lenses shall have a luminous transmission of not less than 85%. Clear and Filter lenses shall be labeled in accordance with Table 4a of ANSI Z87.1. Plano and prescription lenses shall comply with Tables 6 – 10 of ANSI Z87.1 where applicable.

Section 5.1.3 Haze:

Clear and plano lenses shall not exhibit more than 3% haze.

Section 5.1.4 Refractive Power, Astigmatism, Resolving Power, Prism and Prism Imbalance:

Lenses shall meet the tolerances for Refractive Power, Astigmatism and Resolving power as specified in Table 1 of ANSI Z87.1. Lenses shall meet the tolerances for Prism and Prism Imbalance as specified in Table 2 of ANSI Z87.1.

Table 1: Tolerance on Refractive Power, Astigmatism and Resolving Power			
Protector	Refractive Power	Astigmatism	Resolving Power
Spectacle	± 0.06 D	≤ 0.06 D	Pattern 20
Goggle	± 0.06 D	≤ 0.06 D	Pattern 20
Faceshield Windows	No Requirement	No Requirement	Pattern 20
Welding Helmet Lenses	± 0.06 D	≤ 0.06 D	Pattern 20

Table 2: Tolerance on Prism and Prism Imbalance				
Protector	Prism	Vertical Imbalance	Base In Imbalance	Base Out Imbalance
Spectacle	≤ 0.50 Δ	≤ 0.25 Δ	≤ 0.25 Δ	≤ 0.50 Δ
Goggle	≤ 0.25 Δ	≤ 0.125 Δ	≤ 0.125 Δ	≤ 0.50 Δ
Faceshields	≤ 0.37 Δ	≤ 0.37 Δ	≤ 0.125 Δ	≤ 0.75 Δ
Welding Lenses	≤ 0.50 Δ	≤ 0.25 Δ	≤ 0.25 Δ	≤ 0.75 Δ



RESULTS OF TEST

Section 5.1.1 Optical Quality:

Control Number	Model Number	Defects	Notes	Pass/Fail
775972-07	CLEAR	None	---	Pass
775972-08	GREY	None	---	Pass
775972-09	AMBER	None	---	Pass
775972-10	GREY W/ GOLD	None	---	Pass
	MIRROR			Pass

Section 5.1.2 Luminous Transmission:

Control Number	Model Number	Percent Transmittance		Pass/Fail/NA
		Left Eye	Right Eye	
775972-07	CLEAR	90.70	90.87	Pass
775972-08	GREY	10.36	10.41	NA
775972-09	AMBER	72.40	71.66	NA
775972-10	GREY W/ GOLD	10.26	10.15	NA
	MIRROR			NA

Section 5.1.3 Haze:

Control Number	Model Number	Percent Haze		Pass/Fail/NA
		Left Eye	Right Eye	
775972-07	CLEAR	0.63	0.41	Pass
775972-08	GREY	1.55	1.61	Pass
775972-09	AMBER	0.54	0.69	Pass
775972-10	GREY W/ GOLD	1.51	1.53	Pass
	MIRROR			Pass

Section 5.1.4 Refractive Power, Astigmatism, Resolving Power

Control Number	Model Number	Eye	Refractive Power (diopters)	Astigmatism (diopters)	Resolving Power	Pass/Fail
775972-07	CLEAR	Left	-0.01	0.04	48	Pass
		Right	0.00	0.03	48	
775972-08	GREY	Left	0.00	0.03	48	Pass
		Right	0.00	0.04	48	
775972-09	AMBER	Left	0.00	0.04	48	Pass
		Right	-0.01	0.05	48	
775972-10	GREY W/ GOLD	Left	0.00	0.05	48	Pass
		MIRRO	0.00	0.04	48	



RESULTS OF TEST (continued)

Section 5.1.4 Prism and Prism Imbalance

Control Number	Model Number	Eye	Prism (Δ)	Vertical Imbalance (Δ)	Base in Imbalance (Δ)	Base Out Imbalance (Δ)	Pass/Fail
775972-07	CLEAR	Left	0.06	0.06	---	0.06	Pass
		Right	0.06				
775972-08	GREY	Left	0.06	0.00	-0.06	---	Pass
		Right	0.09				
775972-09	AMBER	Left	0.09	0.00	---	0.06	Pass
		Right	0.06				
775972-10	GREY W/ GOLD MIRRO	Left	0.00	0.00	0.00	0.00	Pass
		Right	0.00				

Transmittance Ratings

Control Number	Model Number	Eye	Visible Light Transmittance (%)	L-Scale	UV Transmittance (%)		
					Far UV	Near UV	U-Scale
775972-07	CLEAR	Left	90.70	Clear	0.00	0.00	U6
		Right	90.87				
775972-08	GREY	Left	10.36	L3	0.00	0.00	U6
		Right	10.41				
775972-09	AMBER	Left	72.40	L1.3	0.00	0.00	U6
		Right	71.66				
775972-10	GREY W/ GOLD MIRRO	Left	10.26	L3	0.00	0.00	U6
		Right	10.15				



PHOTO OF SAMPLE(S):

X5 CLEAR



X5 GREY



X5 AMBER



X5 GREY W/GOLD MIRROR



In Charge Of Tests:

A handwritten signature in black ink that reads "Denis Niggli".

Denis Niggli
Engineer
Lighting Division

Report Reviewed By:

A handwritten signature in black ink that reads "David Ellis".

David Ellis
Senior Project Engineer
Lighting Division