



REPORT

3933 US ROUTE 11 CORTLAND, NEW YORK 13045

Order No. G100779289

Revision Date: October 31, 2012
Original Issue Date: June 30, 2012

REPORT NO. 100779289CRT-001

TEST OF SAFETY GLASSES MODELS

K2 CLEAR	K2 AMBER	K2 IN-OUT	K2 GREY
----------	----------	-----------	---------

RENDERED TO

VICSA SAFETY SA
PINTOR CICARELLI 683
8950002 SAN JOAQUIN, CHILE

REVISION NOTE: Changed NEAR UV from scientific notation to standard notation and two decimal places.

DATA REQUESTED

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

AUTHORIZATION

This test service was authorized by signed quote number 500385008.

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 on June 21, 2012 in undamaged condition, and were tested as received. The sample designations were 250506-01 through 250506-04.

DATES OF TESTS

June 28, 2012 through June 29, 2012

This report is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this report. Only the Client is authorized to copy or distribute this report and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results in this report are relevant only to the sample tested. This report by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program. Measurement uncertainty budgets have been determined for applicable test methods and are available upon request.



EQUIPMENT LIST

Equipment Used	Model Number	Control Number	Calibration Date	Calibration Due Date
Optronics Spectroradiometer	OL750D	E288	06/28/12	06/30/12
Gardner Hazemeter	XL211	N328	06/28/12	07/28/12
Extech Hygrothermometer	445703	T1357	10/26/11	10/26/12
Extech Hygrothermometer	445703	T1355	10/29/11	10/29/12
Intertek 100ft Goniometer	NA	N060	08/12/11	08/12/12

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.

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

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
250506-01	K2 Clear	None	---	Pass
250506-02	K2 Amber	None	---	Pass
250506-03	K2 In-Out	None	---	Pass
250506-04	K2 Grey	None	---	Pass

Section 5.1.2 Luminous Transmission:

Control Number	Model Number	Percent Transmittance		Pass/Fail/NA
		Left Eye	Right Eye	
250506-01	K2 Clear	91.1	91.4	Pass
250506-02	K2 Amber	82.4	83.2	NA
250506-03	K2 In-Out	42.9	42.9	NA
250506-04	K2 Grey	14.1	14.4	NA

Section 5.1.3 Haze:

Control Number	Model Number	Percent Haze		Pass/Fail/NA
		Left Eye	Right Eye	
250506-01	K2 Clear	0.19	0.24	Pass
250506-02	K2 Amber	0.16	0.20	Pass
250506-03	K2 In-Out	0.28	0.31	Pass
250506-04	K2 Grey	1.95	2.06	Pass

Section 5.1.4 Refractive Power, Astigmatism, Resolving Power

Control Number	Model Number	Eye	Refractive Power (diopters)	Astigmatism (diopters)	Resolving Power	Pass/Fail
250506-01	K2 Clear	Left	0.01	0.04	28	Pass
		Right	0.01	0.05	28	
250506-02	K2 Amber	Left	0.01	0.05	34	Pass
		Right	0.01	0.05	34	
250506-03	K2 In-Out	Left	0.02	0.05	48	Pass
		Right	0.01	0.05	34	
250506-04	K2 Grey	Left	0.01	0.03	34	Pass
		Right	0.02	0.05	34	



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
250506-01	K2 Clear	Left Right	0.04 0.13	0.09	0.03	---	Pass
250506-02	K2 Amber	Left Right	0.17 0.11	0.06	0	0	Pass
250506-03	K2 In-Out	Left Right	0.16 0.11	0.06	---	0.06	Pass
250506-04	K2 Grey	Left Right	0.09 0.09	0.06	---	0.16	Pass

Transmittance Ratings

Control Number	Model Number	Eye	Visible Light Transmittance		UV Transmittance (%)		
			(%)	L-Scale	Far UV	Near UV	U-Scale
250506-01	K2 Clear	Left Right	91.1 91.4	Clear	0.00	0.00	U6
250506-02	K2 Amber	Left Right	82.4 83.2	L1	0.00	0.00	U6
250506-03	K2 In-Out	Left Right	42.9 42.9	L1.7	0.00	0.00	U6
250506-04	K2 Grey	Left Right	14.1 14.4	L3	0.00	0.00	U6

PHOTO OF SAMPLE(S):

K2 CLEAR



K2 AMBER



K2 IN-OUT



K2 GREY



In Charge Of Tests:



Denis Niggli
Engineer
Lighting Division

Report Reviewed By:



David Ellis
Senior Project Engineer
Lighting Division

Attachment: None