

Third Party Certificate of Test
(ANSI/ISEA 107-2015)
HIGH VISIBILITY COMPLIANCE

Submitted by: Portwest LLC.
Style #: G476, Glotex Hi Vis Vest
Size: Small
Color Yellow W/Silver

Date: January 26, 2017

Test Report #: PORTWE.A011017D

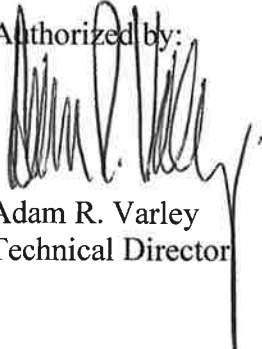
The submitted Garment, **Size S, MEETS** the requirements of ANSI/ISEA 107-2015 Specification for the tests conducted in this report covering **Type R, Class 2 NFR Garments**. The submitted Garment, **Size S**, is to represent the smallest size designation for this style.

All of the above tests and evaluations were performed in accordance with ISO/IEC 17025 Quality Systems.

Certification of background and retroreflective material characteristics is not implied by this certificate or by the original report.



Authorized by:



Adam R. Varley
Technical Director



ISO/IEC 17025 Certified Third Party Test Report

DATE: January 26, 2017

FILE: PORTWE.A011017D

CLIENT: Portwest LLC.
1272 Omega Parkway
Shepherdsville, KY 40165, USA

ATTN: Agne Grigalauskyte

SAMPLE IDENTIFIED BY CLIENT AS:

Garment Submitted
Per ANSI/ISEA 107-2015 Specification
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EXECUTIVE SUMMARY

The submitted Garment, **Size S**, **MEETS** the requirements of ANSI/ISEA 107-2015 Specification for the tests conducted in this report covering **Type R, Class 2 NFR Garments**. The submitted Garment, **Size S**, is to represent the smallest size designation for this style.

Evaluation and compliance of the background and retroreflective material characteristics are not implied by this report.

Section	Requirement	Test Result	Pass, Fail, or N/A
6.	Design		
6.1	Ergonomics		
	High visibility safety apparel and accessories should be designed and manufactured taking into account the following considerations:		Pass
	a. The materials and components of the garment should not be known to affect the wearer adversely.		Pass
	b. Parts of the garment that come into contact with the end user should be free of roughness, sharp edges and projections that could cause irritation or injuries.		Pass
	c. The garment should be designed for correct fit and positioning on the user and should be designed to ensure that it remains in place for the expected period of use, anticipating environmental factors as well as movements the wearer could adopt during the course of work.		Pass

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6.2	Apparel Configurations		
6.2.1	General HVSA shall incorporate the minimum areas of materials specified in Table 1. Minimum Areas of Visible Materials		
	BACKGROUND MATERIAL (including any Combined Performance Material):		
	Type O, Performance Class 1 0.14 m ² (217 in ²)	m ² (in ²)	N/A
	Type R, Performance Class 2 0.50 m ² (775 in ²)	0.52 m ² (797.98in ²)	Pass
	Type R, Performance Class 2 Small Size Worker Smallest Size 0.35 m ² (540 in ²)	m ² (in ²)	N/A
	Subsequent Larger Size 0.50 m ² (775 in ²)	m ² (in ²)	N/A
	Type R, Performance Class 3 0.8 m ² (1240 in ²)	m ² (in ²)	N/A
	Type R, Performance Class 3 Small Size Worker Smallest Size 0.65 m ² (1000 in ²)	m ² (in ²)	N/A
	Subsequent Larger Size 0.8 m ² (1240 in ²)	m ² (in ²)	N/A
	Type P, Performance Class 2 0.29 m ² (450 in ²)	m ² (in ²)	N/A
	Type P, Performance Class 3 0.50 m ² (775 in ²)	m ² (in ²)	N/A
	Supplemental Items, Class E 0.30 m ² (465 in ²)	m ² (in ²)	N/A

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6.2.1	RETROREFLECTIVE OR COMBINED-PERFORMANCE MATERIAL:		
	Type O, Performance Class 1 0.10 m ² (155 in ²)	m ² (in ²)	N/A
	Type P, Performance Class 2 0.13 m ² (201 in ²)	m ² (in ²)	N/A
	Type P, Performance Class 3 0.2 m ² (310 in ²)	m ² (in ²)	N/A
	Type R, Performance Class 2 0.13 m ² (201 in ²)	0.14 m ² (216.00 In ²)	Pass
	Type R, Performance Class 3 0.2 m ² (310 in ²)	m ² (in ²)	N/A
	Supplemental Items, Class E 0.07 m ² (109 in ²)	m ² (in ²)	N/A
6.2.2	Type O HVSA		N/A
	Type O Class 1 HVSA shall utilize at least one horizontal band of retroreflective or combined-performance material around the torso, and shall include at least the minimum amounts of retroreflective or combined performance material in the shoulder area if encircling bands are not present on sleeves.		N/A
6.2.3	Type R HVSA		
6.2.3.1	Type R Class 2		Pass
	Type R Class 2 HVSA shall utilize at least one horizontal band of retroreflective or combined- performance material around the torso, and shall include at least the minimum amounts of retroreflective or combined-performance material in the shoulder area if encircling bands are not present on sleeves.		Pass

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Section	Requirement	Test Result	Pass, Fail, or N/A
6.2.3.2	Type R Class 3 Type R Class 3 HVSA shall utilize one or more horizontal bands of retroreflective or combined- performance material around the torso, and shall include one or more encircling bands on the sleeves.		N/A N/A
6.2.4	Type P HVSA		
6.2.4.1	Type P Class 2 Type P Class 2 HVSA shall utilize at least one horizontal band of retroreflective or combined-performance material around the torso, and shall include at least the minimum amounts of retroreflective or combined-performance material in the shoulder area if encircling bands are not present on sleeves.		N/A N/A
6.2.4.2	Type P Class 3 Type P Class 3 HVSA shall utilize at least one horizontal band of retroreflective or combined-performance material around the torso, and shall include one or more encircling bands on the sleeves.		N/A N/A
6.3	Construction Requirements		
6.3.1	Retroreflective and Combined-Performance Materials		
6.3.1.1	Minimum Widths The width of the retroreflective or combined-performance materials incorporated into the HVSA shall not be less than the dimensions specified in Table 1.		
	Type O, Performance Class 1 25 mm (1 in)	mm (in)	N/A
	Type R, Performance Class 2 25 mm (1 in) Split Trim or 35 mm (1.38 in)	Retroreflective Material 50mm (2.0in)	Pass

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Section	Requirement	Test Result	Pass, Fail, or N/A
6.3.1.1	Type R, Performance Class 3 25 mm (1 in) Split Trim or 50 mm (2 in)	mm (in)	N/A
	Type P, Performance Class 2 25 mm (1 in) Split Trim or 35 mm (1.38 in)	mm (in)	N/A
	Type P, Performance Class 3 25 mm (1 in) Split Trim or 50 mm (2 in)	mm (in)	N/A
	Supplemental Items, Class E 25 mm (1 in) Split Trim or 50 mm (2 in)	mm (in)	N/A
6.3.1.2	Split trim designs		
	Positioned as a parallel pair		N/A
	The two paired stripes of retroreflective or combined-performance material shall not be separated by more than 50 mm (1.97 in).		N/A
6.3.1.3	Spacing between Multiple Bands Minimum distance between bands of retroreflective or combined-performance material shall be at least equal to the width of the band.	Not Present	N/A
6.3.2	Placement of Retroreflective and Combined Performance Materials		
6.3.2.1	Distance from Bottom Edge of HVSA Horizontal retroreflective or combined-performance materials shall be placed at least 50 mm (1.97 in) above the bottom of the hem of the torso, long sleeve HVSA and long pant styles.	269.88 mm (10.625 in)	Pass
6.3.2.2	Encircling Arms and Legs Horizontal retroreflective or combined-performance materials placed on arms or legs shall encircle them in such a manner to provide 360° visibility of the wearer at all viewing angles in a horizontal plane.		N/A

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6.3.2.3	<p>Long Sleeves</p> <p>If upper bands of retroreflective or combined- performance materials are placed on long sleeves, the bands shall be placed between the elbow and the shoulder.</p> <p>Lower bands can be placed between the elbow and wrist but shall be at least 50 mm (1.97 in) above the bottom of the sleeve.</p>		N/A N/A
6.3.3	<p>Gaps</p> <p>Gaps in retroreflective, combined- performance, and background materials shall not be more than 50 mm (1.97 in) horizontally to enable fastening or for seam allowance.</p> <p>Retroreflective or combined- performance materials shall not count against the width of this gap.</p>	<p>Present</p> <p>Front Trim: 9.65 mm (0.375 in)</p>	Pass N/A
6.3.4	<p>360° Visibility</p> <p>Retroreflective or combined- performance and background materials shall be positioned in such a way to provide 360° visibility of the wearer at all viewing angles in a horizontal plane.</p>		Pass
6.3.5	<p>Material Use and Balance of Design</p> <p>Garments shall be balanced in design so that <u>not less than 40% of the minimum required amount</u> of retroreflective or combined- performance and background materials specified in Table 1 is present on both the front and the back when laid flat.</p>		
	<p>BACKGROUND MATERIAL (including any Combined Performance Material):</p>		
	<p>Type O, Performance Class 1 0.056 m² (86.8 in²)</p>	<p>Front: m² (in²) Back: m² (in²)</p>	N/A
	<p>Type R, Performance Class 2 0.20 m² (310 in²)</p>	<p>Front: 0.25 m² (381.45 in²) Back: 0.27 m² (416.53 in²)</p>	Pass

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6.3.5	Type R, Performance Class 3 0.32 m ² (496 in ²)	Front: m ² (in ²) Back: m ² (in ²)	N/A	
	Type R, Performance Class 2 Small Size Worker Smallest Size 0.14 m ² (216 in ²) Subsequent Larger Size 0.20 m ² (310 in ²)	Front: m ² (in ²) Back: m ² (in ²) Front: m ² (in ²) Back: m ² (in ²)	N/A N/A	
	Type R, Performance Class 3 Small Size Worker Smallest Size 0.26 m ² (400 in ²) Subsequent Larger Size 0.32 m ² (496 in ²)	Front: m ² (in ²) Back: m ² (in ²) Front: m ² (in ²) Back: m ² (in ²)	N/A N/A	
	Type P, Performance Class 2 0.116 m ² (180 in ²)	Front: m ² (in ²) Back: m ² (in ²)	N/A	
	Type P, Performance Class 3 0.20 m ² (310 in ²)	Front: m ² (in ²) Back: m ² (in ²)	N/A	
	Supplemental Items, Class E 0.12 m ² (186 in ²)	Front: m ² (in ²) Back: m ² (in ²)	N/A	
	6.3.5	RETROREFLECTIVE OR COMBINED-PERFORMANCE MATERIAL:		
		Type O, Performance Class 1 0.04 m ² (62 in ²)	Front: m ² (in ²) Back: m ² (in ²)	N/A
Type R, Performance Class 2 0.052 m ² (80.4 in ²)		Front: 0.07 m ² (107.75 in ²) Back: 0.07 m ² (108.25 in ²)	Pass Pass	
Type R, Performance Class 3 0.08 m ² (124 in ²)		Front: m ² (in ²) Back: m ² (in ²)	N/A	
Type P, Performance Class 2 0.052 m ² (80.4 in ²)		Front: m ² (in ²) Back: m ² (in ²)	N/A	
Type P, Performance Class 3 0.08 m ² (124 in ²)		Front: m ² (in ²) Back: m ² (in ²)	N/A	
Supplemental Items, Class E 0.028 m ² (43.6 in ²)		Front: m ² (in ²) Back: m ² (in ²)	N/A	

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6.3.6	Shoulder Area HVSA without retroreflective or combined performance material that encircles the arm shall have a minimum of 150 cm ² (23.3 in ²) of retro-reflective material or combined- performance material in the shoulder area to provide 180° visibility of the wearer.	Present	Pass
7	Criteria for Optional Features and Testing		
7.1	Pockets Pockets of matching or contrasting compliant high-visibility materials shall not create gaps in retroreflective or combined-performance material of more than 50 mm (1.97 in) horizontally.	Present	Pass
7.2	Identification Panels, Lettering and Logos (Type R and P) shall not create gaps in retroreflective or combined-performance material of more than 50 mm (1.97 in) horizontally.	Not Present	N/A
	Identification panels, lettering and logos of contrasting non-compliant material shall not exceed a total of 465 cm ² (72 in ²) on the front and/or rear of the HVSA and such total amount may contribute to the minimum amount of visible background material specified in Table 1.	Present	Pass
	shall cover no more than 142 cm ² (22 in ²) of the minimum amount of visible retroreflective or combined-performance material specified in Table 1.	m ² (in ²)	N/A

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7.3	<p>Identification of Personnel (Type P) A method of identifying the public safety entity such as an identification panel and/or trim may be incorporated into the HVSA. Public safety industries may be identified with the specific names and colors: Red: Fire Service Green: Emergency Medical Service (EMS) Blue: Law Enforcement</p>		N/A

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Section	Requirement	Test Result	Pass, Fail, or N/A
11	Care Labeling Washing or cleaning instructions shall be indicated in accordance with ASTM D5489-14, <i>Standard Guide for Care Symbols for Care Instructions on Textile Products</i> , as relevant.	Information Image Submitted for Labels 	Pass

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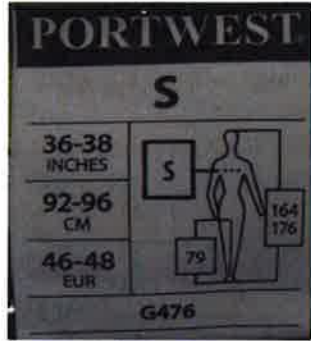
Section	Requirement	Test Result	Pass, Fail, or N/A
12	Marking		
12.1	General		
	Each piece of apparel and headwear shall be marked. The marking shall be: on the product itself or on labels attached to the product;		Pass
	permanently affixed so as to be visible and legible;	Present and Information Image Submitted for Labels	Pass
	durable for the appropriate number of cleaning processes.	Information Image Submitted for Labels Maximum 25 Wash Cycles See Section: 11	Pass
	NOTE: The use of numbers not smaller than 2 mm (0.08 in) and pictograms not smaller than 10 mm (0.39 in) is recommended. Numbers and pictograms are recommended to be black on white background.	Present and Information Image Submitted for Labels	Pass
12.2	Specific Marking		
	The marking of garments shall include the following information: a. Name, trademark or other means of identification of the manufacturer or authorized representative;	Present and Information Image Submitted for Labels See Section: 12.2 (c)	Pass
	b. Designation of the product Type commercial name or code;	Information Image Submitted for Labels See Section: 12.2 (c)	Pass

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12.2	c. Size designation;	Present and Information Image Submitted for Labels 	Pass
	d. Number of this specific ANSI standard (ANSI/ISEA 107-2015);	Present See Section: 12.2 (f)	Pass
	e. Statement regarding flame resistance which shall be conveyed in one of the following ways: (1) To indicate that the HVSA has been evaluated per the one of the methods cited in Section 10.5, Flame Resistance, A. The label shall include the letters FR followed by the designation of the specific ASTM standard used to evaluate flame resistance; or. B. Attachment of a separate label indicating certification to NFPA 1977 or 2112. (2) If none of the flame resistant standards in Section 10.5 are met, the label shall include the following statement: "This garment is not flame resistant as defined by ANSI/ISEA 107-2015" Section. 10.5."	Information Image Submitted for Labels "Not FR" See Section: 12.2 (f)	Pass

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12.2	f. Pictogram showing the HVSA type, performance Class and flame resistance status. The pictogram may be either the universal representation or an accurate drawing representing the specific garment. NOTE: For supplemental items Performance Class E, only the markings Y (indicating Performance Class) and Z (indicating the flame resistance statement) are required	Present and Information Image Submitted for Labels 	Pass
	g. The maximum number of processes for the finished item shall be stated after 'maximum' next to the care labeling.	Present and Information Image Submitted for Labels Maximum 25 Wash Cycles See Section: 11	Pass
13	Instructions for Use		
13.1	Product Information Garments shall be supplied to the customer with information written at least in English.		Pass
	The following minimum information shall be given: a. Fitting; how to put on and take off, if relevant.	Present: Not Relevant	N/A

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13.1	b. Necessary warnings of misuse.	<p>Information Image Submitted for Labels</p>  <p>Instructions: Expose Glowtex™ to daylight or artificial light for 5-30 minutes to charge. Glowtex™ offers a high intensity after glow for 30 minutes before fully discharging after 6 hours.</p>	Pass

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13.1	c. Limitations on use.	Information Image Submitted for Labels See Section: 13.1 (b)	Pass
	d. Storage; how to store and maintain correctly, with maximum periods between maintenance checks.	Information Image Submitted for Labels See Section: 13.1 (b)	Pass
	e. Maintenance and cleaning; how to clean or decontaminate correctly, with complete washing or dry cleaning instructions.	Present and Information Image Submitted for Labels See Section: 11	Pass
	f. The number of cleaning processes without impairment of its performance level.	Present and Information Image Submitted for Labels Maximum 25 Wash Cycles See Section: 11	Pass

Signed For The Company By

Adam R. Varley
Technical Director

JG/01



Stacy Sadowy
Quality Assurance Manager