



All tests reported herein
have been performed in
accordance with the
laboratory's scope of
accreditation

No. 1386266.9

(Please quote this number in all correspondence)

CLIENT:
Dalton International Ltd.
PO Box 259041
Botany, Auckland 2163

SAMPLE RECEIVED FROM:
Dalton International Ltd.

Date Received: 7.9.21

Attn.: Darryl Burn

SAMPLE DESCRIPTION:
Orange-red vest, size L.

Client Order No.:

Client Reference:

1 of 6

CONFORMANCE TO AS/NZS 1906.4: 2010 - RETROREFLECTIVE MATERIALS AND DEVICES FOR ROAD TRAFFIC CONTROL PURPOSES.

Background Material, Section 2	Conformance
Colour (Dry)	N/A
Luminance (Dry)	N/A
Colour (Wet – wet weather clothing and TTMC-W17)	N/A
Luminance (Wet – wet weather clothing and TTMC-W17)	N/A
Colour (Dry after UV exposure)	Complies
Luminance (Dry after UV exposure)	Complies
Colour (Wet after UV – at client request)	N/A
Luminance (Wet after UV – at client request)	N/A
Colourfastness to Washing	Complies
Colourfastness to Perspiration (acid)	Complies
Colourfastness to Perspiration (alkaline)	Complies

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L A Greer
Signatory


C Judan
Signatory

14/09/2021

New Zealand Wool Testing Authority Ltd

22 Bridge Street, PO Box 12065

Ahuriri, Napier 4144, New Zealand

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AS/NZS 1906.4:2010 - RETROREFLECTIVE MATERIALS AND DEVICES FOR ROAD TRAFFIC CONTROL PURPOSES.

Part 4: High-visibility materials for safety garments.

Section 2: High daytime visibility (Class F and NF) materials.

2.3 - **Fluorescent Colour** (in accordance with appendix A)

2.4 - **Non-fluorescent Colour**

Date Tested: 14/9/2021

Instrumentation used: Hunterlab Colorflex EZ-45

Geometry: 45°/0°

Port Diameter: 31.8 mm

Illuminant: D65

Number of Layers: 1

Observer: 2°

Number of Measurements: 6

Backing fabric: black with reflectance values from 0.37 to 2.67 (over 400 to 700nm)

Classification of Material: Class F

COLOUR FASTNESS AFTER UV EXPOSURE (Clause 2.5.1)

Pre-treated in accordance with Appendix A, using AS 2001.4.B02- 2001, method 5 to 225 kJ.m⁻².

Sample Condition	Chromaticity Coordinates		Luminance Factor	Luminance Factor Requirement
	x	y	Y	
Dry	0.5577	0.3789	0.48	Orange-Red – 0.40

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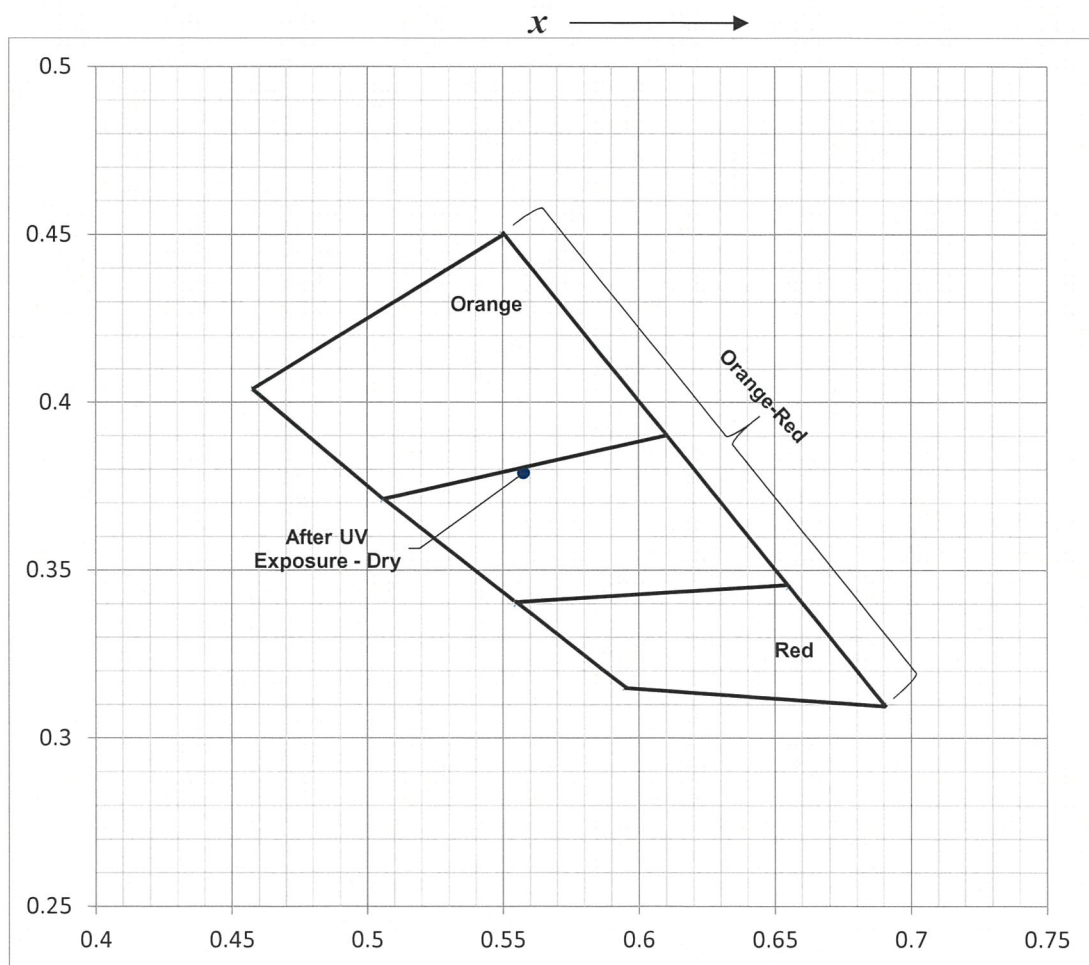
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AS/NZS 1906.4:2010 - RETROREFLECTIVE MATERIALS AND DEVICES FOR ROAD TRAFFIC CONTROL PURPOSES.

COMPLIANCE WITH THE STANDARD.

Tested under daylight conditions in accordance with appendix A, AS/NZS 1906.4:2010.

2.3 (a) Colour – as in Table 2.1 and Figure 2.1 (refer to the standard):

Falls within the **orange-red** colour space.

2.3 (b) Luminance as in Table 2.2 and 2.3 below.

	Dry	Wet
Luminance Factor:	Complies	Not tested
Chromaticity Coordinates:	Comply	Not tested

Minimum luminance factor, section 2.3, 2.4 and 2.6.

Colour Designation	fluorescent colours table 2.2	non- fluorescent colours table 2.3
Red- orange	0.40 (0.34)	0.15 (0.13)
Red	0.25 (0.21)	0.15 (0.13)
Orange	0.40 (0.34)	0.30 (0.25)
Yellow	0.70 (0.59)	0.40 (0.34)

Note: Users should be aware that certain open – weave materials, when tested in accordance with appendix A, may not meet the minimum luminance factors specified.

The requirements for wet measurements have been clarified in Amendment No 1 May 2014. The bracketed figures above are the dry requirements minus 15 % (taken to 2 decimal places).

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AS/NZS 1906.4:2010 - RETROREFLECTIVE MATERIALS AND DEVICES FOR ROAD TRAFFIC CONTROL PURPOSES.

Part 2.5 Durability

Clause 2.5.2

AS 2001.4.15:1994 - DETERMINATION OF COLOURFASTNESS TO WASHING

Date Tested: 14/9/2021

Test L2

Wash temperature = $60 \pm 2^\circ\text{C}$

Wash Time = 30mins

Steel Balls = 25

ECE reference detergent used at 4g/l with 1g/l sodium perborate.

	Results	Specifications	Compliance to AS/NZS 1906.4
Change of Colour	4-5	Min. 4	Pass

Part 2.5 Durability

Clause 2.5.3

AS 2001.4.E04:2005 - DETERMINATION OF COLOURFASTNESS TO PERSPIRATION

Date Tested: 14/9/2021

Test A used

Samples rinsed

	Results	Specifications	Compliance to AS/NZS 1906.4
Change of Colour: Acid	4-5	Min. 4	Pass
Alkaline	4-5		Pass

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