



**No. 1276700.0**

(Please quote this number in all correspondence)

CLIENT:  
Vanguard Group  
7 Peterkin Street  
Wingate, Wellington

SAMPLE RECEIVED FROM:  
Vanguard Group

Date Received: 18.4.19

Attn.: Craig McLean

SAMPLE DESCRIPTION:  
Orange road cone.

Client Order No.:

Client Reference:

1 of 6

**CONFORMANCE TO TRAFFIC CONTROL DEVICES MANUAL PART 8 CoPTTM: 4th EDITION, NOVEMBER 2018**

**SECTION B2 – DELINEATION DEVICES**

**SECTION B2.1 GENERAL**

Requirement	Results	Conformance
The letters TTMC XX/YY (month and year of compliance certificate) of a practicable size must be embossed or otherwise permanently marked on the upper base of the device.	The TTMC letters and month/year are not permanently marked on the upper base of the road cone as this is a pre-production sample. TTMC letters and month/year must be permanently marked on the upper base of the device in the production process.	/

**SECTION B2.2 COLOUR**

All delineation devices (eg cones, tubular delineators and barrels) must be fluorescent orange with:

- chromaticity coordinates in accordance with table 2.5 of AS/NZS 1906.1:2007
- minimum luminance factors in accordance with table 2.8 of AS/NZS 1906.1:2007

Instrumentation used: Hunterlab Colorflex EZ-45

Geometry: 45°/0°

Illuminant: D65

Observer: 2°

Results are the average of six measurements

Sample	Chromaticity Coordinates		Luminance Factor
	x	y	Y
Orange Cone – Outer	0.5865	0.3677	0.44
Orange Cone – Inner	0.5847	0.3685	0.43
Orange Cone - Base underside	0.5965	0.3647	0.48

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L A Greer  
Signatory

C Judan  
Signatory

29/04/2019

**New Zealand Wool Testing Authority Ltd**

22 Bridge Street, PO Box 12065

Ahuriri, Napier 4144, New Zealand

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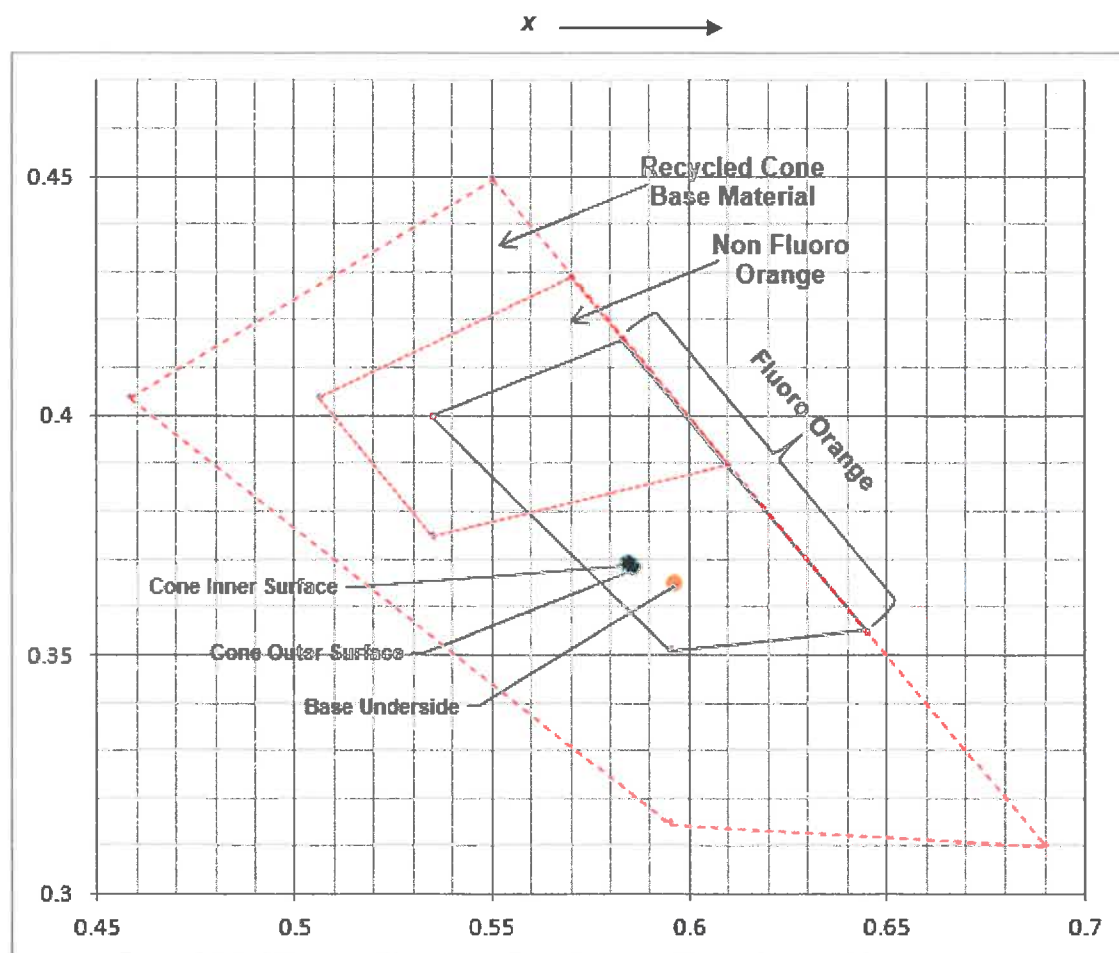
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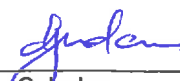
2 of 6



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## CONFORMANCE TO TRAFFIC CONTROL DEVICES MANUAL PART 8 CoPTTM: 4th EDITION, NOVEMBER 2018

### SECTION B2 – Delineation devices

#### Compliance With The Standard.

Tested under daylight conditions in accordance with appendix C, **AS/NZS 1906.1:2007**

Requirement	Results	Conformance
Chromaticity coordinates in accordance with table 2.5 and figure D2 (fluoro colours) of Appendix D of AS/NZS 1906.1:2007	Outer & Inner Surface: The sample falls within the <b>fluoro orange</b> colour space.	Conforms
Minimum luminance factor in accordance with table 2.8 of AS/NZS 1906.1:2007	Outer Surface: 0.44 Inner Surface: 0.43	Conforms Conforms
Internal colour and the underside of the base cones, tubular delineators and barrels must be either white or orange. Orange chromaticity coordinates must be compliant in accordance with table 2.5 of AS/NZS 1906.1:2007 (fluoro or non-fluoro)	Internal & Underside Colour: Orange  Base Underside: The sample falls within the <b>fluoro orange</b> colour space.	Conforms  Conforms
Colour dispensation will be allowed for underside of a cone base that is manufactured using a minimum of 30% of recycled cone material. Chromaticity coordinate must comply with AS/NZS 1906.4 for orange-red.	N/A	N/A

#### Minimum luminance factor

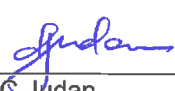
Colour Designation	fluorescent colours table 2.8 - total luminance ( $Y_T$ )
Fluorescent orange	0.25

**Note:** This standard does not specify fluorescent luminance ( $Y_F$ ) as a separate requirement.

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## CONFORMANCE TO TRAFFIC CONTROL DEVICES MANUAL PART 8 CoPTTM: 4th EDITION, NOVEMBER 2018

### SECTION B2 – Delineation devices

#### SECTION B2.3 RETRO-REFLECTIVITY

Requirement	Results	Conformance
Delineation devices must have a white or silver retro-reflective bands.	White	Conforms
Must meet a minimum photometric performance requirements for Class 1 material as per table 2.2 of AS/NZS 1906.1:2007	3M Reflective Material submitted – the submitted reflective material is approved for use on traffic signs as per New Zealand Gazette No. 102 dated 5 October 2017.	/

#### SECTION B2.4 DIMENSIONS

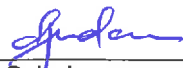
##### 900mm Road Cones

Requirement	Results	Conformance
Minimum height – 900mm	907mm	Conforms
Unballasted weight not exceeding 7kg	4.18 kg	Conforms
Number of bands - 2	2 bands	Conforms
Band width: upper band – at least 150mm & no wider than 165mm. lower band – at least 100mm & no wider than 110mm.	Upper Band: 151mm Lower Band: 101mm	Conforms Conforms
Height of bottom edge of bands from ground: upper band - 650 $\pm$ 5mm lower band - 400 $\pm$ 5mm	Upper Band: 648mm Lower Band: 397mm	Conforms Conforms
Company logos applied to the sides of delineation devices must be no greater than 5000mm <sup>2</sup> (eg 50mm x 100mm) Top of the logos must be no higher than 200mm ( $\pm$ 20mm) from the road side.	No logos.	/

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**SECTION B2 – Delineation devices**

**450 mm Road Cones**

Requirement	Results	Conformance
A 450 mm high cone may be used to delineate and protect wet road markings but will not be compliant for any other use.	N/A	N/A
Number of bands - 1	N/A	N/A
Height of bottom edge of bands from ground: 250 +5mm	N/A	N/A
Company logos applied to the sides of delineation devices must be no greater than 5000mm <sup>2</sup> (eg 50mm x 100mm) Top of the logos must be no higher than 200mm (+20mm) from the road side.	N/A	N/A


**SECTION B2.4.1 CONES**

Requirement	Results	Conformance
Be sufficiently stable to remain upright in most anticipated service conditions.	Stable to remain upright.	Conforms
Have a base designed to stop the cone from rolling if knocked over.	Base has 4 corners.	Conforms
Be capable of returning to their original shape after impact.	Return to its original shape after impact.	Conforms
Be made of flexible polymer or similar material.	PVC cone.	Conforms

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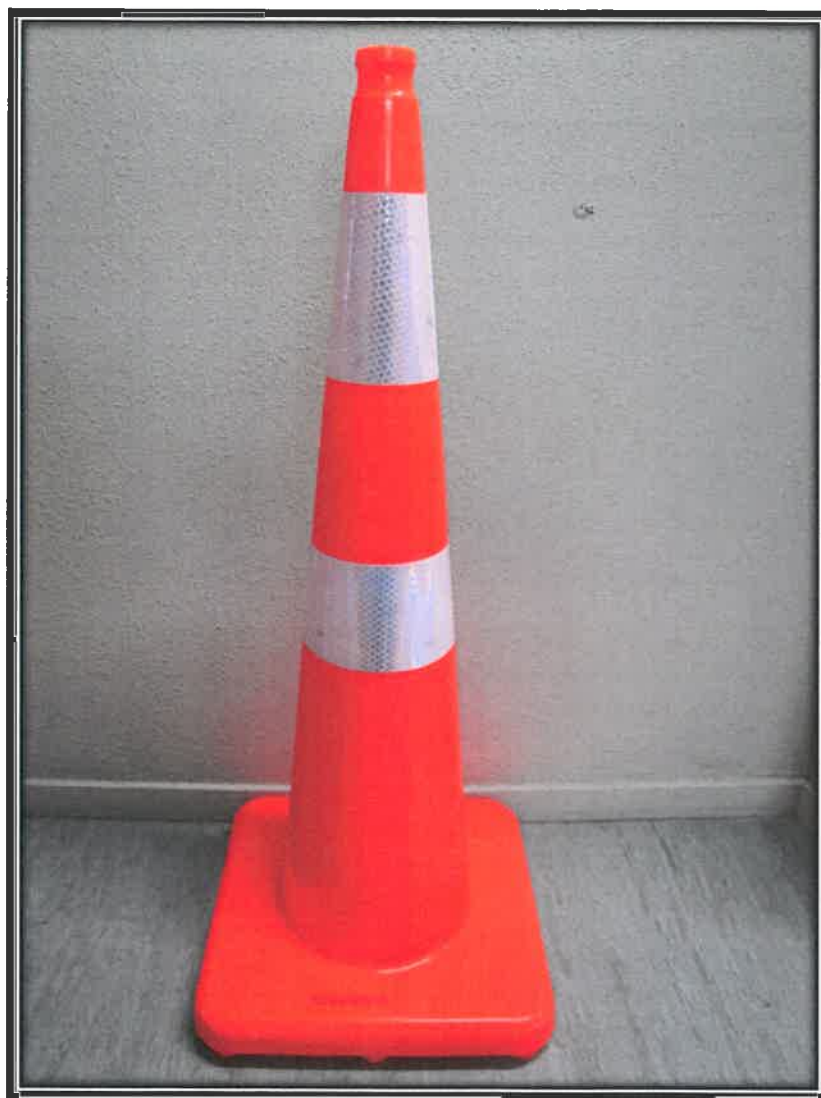
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