



## TESTING OF HIGH-VISIBILITY SAFETY GARMENTS – PART IV

### **NZ FORESTRY OWNERS ASSOCIATION SPECIFICATIONS**

#### Background

This is the fourth and final article in a series relating to information about high visibility garments. This article provides details relating to the specifications for garments as required by the New Zealand Forest Owners Association (NZFOA).

New Zealand's forestry industry is under considerable scrutiny given its health and safety record in recent years. The table below indicates the number of workplace fatalities occurring in the forestry sector since 2007.

*Table 1: Number of Forestry Personnel Killed in Workplace Accidents in New Zealand*

2007	2008	2009	2010	2011	2012	2013
3	4	5	4	3	6	10

The NZFOA requirements relating to high-visibility safety garments serve to ensure forestry workers are visible in their work surroundings.

#### NZFOA Specifications for High-Visibility Safety Garments

The New Zealand Forestry Guidelines for High-Visibility Clothing (FOA:2012) specifies the minimum acceptable design standards for high visibility garments. The guideline is intended for use within New Zealand commercial forestry environments where people may be exposed to the hazards of moving traffic and equipment.

#### Application of the Specification

The NZFOA Guideline is based around AS/NZ4206.1:2011 and AS/NZS1906.4:2010 (see Parts I and II of this series). Because of the nature of the garments typically used (knitted tee shirts are common), many designs are achieved by printing of fluorescent inks in distinctive patterns.

Compliant garments fall within two categories:

**Class FID** - Forest Industries Day Time - Class FID garments are intended to provide the wearer with high visibility under daylight viewing conditions and are intended for the bulk of forestry workers operating in daylight hours. This class is similar to Class D of AS/NZS 4602.1:2011.



*Fig 2: Example NZFOA-Compliant FIDN Garments*



*Fig 1: Example NZFOA-Compliant FID Garments*

**Class FIDN** - Forest Industries Day Night - Class FIDN garments are intended to provide the wearer with high visibility under both daytime and night-time viewing conditions. This class is similar to Class DN of AS/NZS 4602.1:2011.



The specifications of the NZFOA Guideline are however fundamentally different to the AS/NZS Standards in some key areas. These are outlined below:

AS/NZS 4602.1:2011 & AS/NZS 1906.4:2010	NZFOA Specification
Two main classes of colour space are specified in AS/NZS 1906.4:2010 - yellow and orange-red	Yellow or orange as per AS/NZS 1906.4 :2010, with the same luminance requirements. However <b>only</b> the orange portion of the orange-red spectrum is permitted. The red portion of the space cannot be used because of red /green colour blindness.
Fluorescent and non fluorescent colours are allowed.	Only fluorescent colours are allowed.
High visibility background material must be at least 0.2m <sup>2</sup> in both front and back, measured to the waist only.	High visibility background material must be at least 0.06m <sup>2</sup> in both front and back, measured over the whole garment*.  * Note 1: The minimum area may be achieved in one single block or several blocks that total the required 0.06m <sup>2</sup> .  * Note 2: Each solid block must be at least 15cm <sup>2</sup> . Areas of colour within the blocks that taper to a width of less than 1.0cm are not included.  * Note 3: Logos, lettering and symbols may be added, although they must be no greater than 15 cm <sup>2</sup> and they are not included in the minimum qualifying 0.06m <sup>2</sup> .
There is no specific area requirement for retro-reflective tape.	FIDN garments must have a minimum of 150 cm <sup>2</sup> of Class R or Class RF retro-reflective tape on the upper torso, on both front and back.
There are belt and braces and other configurations allowed.	The tape configuration is recommended to be a belt and braces on both front and back.
In New Zealand, the tape must be 50 ± 1 mm.	The tape shall be no less than 25 mm ± 1 mm.

## NZFOA Registration

All garments intended for use in New Zealand forestry have to be registered with the NZFOA\*. A registration number is issued to compliant garments following independent assessment to the NZFOA specifications. NZWTA Ltd is approved by International Accreditation New Zealand (IANZ) to provide design compliance to the Guideline.

- \* Any garment that complies with AS/NZS 4602.1: 2011 are approved high visibility garments for wear within the Forest Industries environment, provided the orange high-visibility colour conforms to the more-restrictive NZFOA requirements (as described in above table). Garments do not need to be registered under the NZFOA Guideline registration scheme provided they show compliance to AS/NZS 4602.1:2011 on the garment label.

## Advice on NZFOA Garment Testing and Compliance

The New Zealand Forestry Guidelines for High-Visibility Clothing (FOA:2012) and the two key Standards for high-visibility garments (AS/NZS 4602.1:2011 for garment design and AS/NZS 1906.4:2010 for background materials and retro-reflective tape) provide a significant amount of detail and specification for manufacturers and users. NZWTA Ltd has a comprehensive understanding of the standards involved in high-visibility garment testing and can provide a report on the conformance to these standards. If you are involved with manufacturing, importing or using high-visibility garments and want to ensure the garments are compliant with current standards, *contact NZWTA on:*