



NZ FORESTRY GUIDELINES FOR HIGH-VISIBILITY CLOTHING

FOA: 2012

1. Introduction

1.1 Scope

This guideline specifies the minimum acceptable design standards for the production of high-visibility garments intended for use within New Zealand commercial forest environments where people may be exposed to the hazard of moving traffic, moving equipment or require visibility between fellow workers in the completion of their duties.

1.2 Garment design alternatives

The FOA recognises the use of two alternative garment design specifications for employees working within the forest environment.

a. FOA Guideline Specification:

Garment designs in this category must have FOA Design compliance and approval supported by an FOA registration number. Garment designs already accepted under the Forest Owners High Visibility Clothing Scheme prior to 2012 with a current FOA registration number, continue to be approved and do not need to be resubmitted.

To obtain an FOA registration number for new designs, manufacturers should contact FOA with proof that their garment design meets the FOA Guideline Design in this document. (Note: NZWTA Industrial testing laboratory in Napier is approved to provide such proof of design compliance.)

b. AS/NZS Standard Specifications:

Workers employed within the forestry environment who already have a high visibility garment that complies with the current Australia and New Zealand AS/NZS 4602.1 Standard *High visibility safety garments, Part 1: Garments for high risk applications*, are approved to use these garments in place of the FOA Guideline Specification noted in Clause a) above providing that in addition to



compliance with the current AS/NZS 4602.1 Standard such garments also comply with Clause 3 in this Guideline.

1.3 Ergonomics Considerations

These guidelines take particular account of the high physical workload and dynamic movements associated with forestry tasks, the need for well fitting garments to reduce snagging related hazards, and the high metabolic heat load produced by many forest industry tasks.

2. FOA Guideline Specification

2.1 Material Compliance

Garments compliant to the FOA Guideline specification may be manufactured using any suitable material of any colour without reference to particular types or styles.

2.2 Colour Compliance

Daytime high visibility shall be achieved by the use of high visibility background material, or application of high visibility colour using fluorescent materials, that comply with either fluorescent yellow or fluorescent orange red as specified in Clause 2.3, Table 2.1 of the current edition of AS/NZS 1906.4 *Retroreflective materials and devices for road traffic control purposes, Part 4: High-visibility materials for safety garments*.

2.3 Colour Luminance/Brightness

The performance of daytime high visibility colours must comply with the minimum luminance factor for fluorescent orange red or yellow as specified in Table 2.2 of the current AS/NZS 1906.4.

NOTE: The specification of the above fluorescent luminance factors restricts the use of fluorescent red which, although a part of the total orange red area, must not be used for FOA Guideline garments. Additionally fluorescent red will not meet the luminance specified for orange red.

2.4 Retroreflective material

Retroreflective material shall comply with the specification for Class 'R' or Class 'RF' material as noted in Section 3 and Table 3.2 of the current edition of AS/NZS1906.4.

Where the colour of retro-reflective material also meets the standard for fluorescence required by Clause 2.2 and 2.3 herein the area of this material may also be included when assessing daytime compliance.

All retroreflective material applied to garments shall be in strips no less than 25mm±1mm wide.



2.5 FOA Guideline Garment Classes

Two garment classes are specified in this section of the Guideline dependant on whether the garment will be worn strictly in the hours of daylight or if the garment will be worn in both hours of daylight and darkness where they will be seen by retroreflected light.

Acronym	Name	Intended Use
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 the forest workers operating in daylight hours. Note: Users should take care that these garments are not mistakenly worn at night in situations that put the wearer at risk. Fluorescent materials are generally not effective when viewed under artificial light.
FIDN	Forest Industries Day Night	Class FIDN garments are intended to provide the wearer with high visibility under both daylight viewing conditions and night-time viewing using retroreflected light. This design is intended for workers who operate under both day and night conditions.

2.6 FOA Garment Design

- a. Forest Industries Day Garment (FID)

The design of the FID Class Garments shall comprise a garment or combination of garments of any desired type or style, which meet the following specifications:

 - i) The minimum area of fluorescent material on the front upper torso not covered by any naming patches shall be 600cm² (0.06m²)
 - ii) The minimum area of fluorescent material on the back upper torso not covered by any naming patches shall be 600cm² (0.06m²)
 - iii) Such minimum area of fluorescent material may be achieved in one single block or several individual blocks that when totalled achieve the required 600cm².
 - iv) To qualify for inclusion in the above minimum areas, qualifying fluorescent colour must form a solid block not less than 15.0 cm². No dimension shall be less than 1.0cm within the solid block. Fluorescent colour within a block that tapers to a width less than 1.0cm shall not be included for the area less than 1.0cm in width.



- v) Logos, lettering and symbols no greater than 15cm² may be added but may not be included in the minimum qualifying 600cm² area. Any qualifying fluorescent colour covered may not be included in the qualifying 600cm² area.
- b. Forest Industries Day Night Garment (FIDN)
The design of the FIDN Class garments shall comply with Clause 2.5 Class FID garment with the addition of retroreflective material per the following specifications:
 - i) The garment shall exhibit a minimum of 150cm² of Class R or Class RF AS/NZS 1906.4 retroreflective material on the front upper torso of the garment.
 - ii) The garment shall exhibit a minimum of 150cm² of Class R or Class RF AS/NZS 1906.4 retroreflective material on the back upper torso of the garment.
 - iii) Retroreflective elements shall be no less than 25mm±1mm in width and shall preferably form a braces type configuration both front and back.
 - vi) Where retroreflective tape is applied on top of or covering qualifying fluorescent material, that portion of the fluorescent material so covered shall not be counted towards the minimum 600 cm² total area requirement.

Where retroreflective tape is applied on top of or covering a qualifying fluorescent material block, the portion of fluorescent material that remains uncovered in that block may still be counted towards the 600 cm² total area requirement.

3. AS/NZS Standards Specification

Garments that comply with the current AS/NZS 4602.1 Standard Class D or Class D/N are approved high visibility garments for wear within the Forest Industries environment.

To qualify for use such garments need not be registered under the FOA Guideline design approval and registration scheme but must show compliance to the AS/NZS 4602.1 Standard on the garment label.

Garment manufacturers and suppliers must also ensure that the background high visibility material colour complies with the luminance factor specification for orange red or yellow as shown in Clause 2.2 of the current AS/NZS 1906.4. This means that an orange red colour that falls into the red extreme of the orange red chromaticity coordinates shown in Figure 2.1 or the current AS/NZS 1906.4 may not qualify for use within this guideline.



For qualification within this Guideline current AS/NZS 4602.1 compliant garments may include logos, lettering and symbols to a maximum 15cm² provided the minimum high visibility background area compliance of 0.2m² front and back remains.

4. Attachment to Body

Suitable means of securing the garment to the body under working conditions shall be provided without obstruction to movement, body action or to use of tools of the trade so as to cause a risk to personal safety or hazard.

5. Instruction, Labelling and Marking

Garments manufactured to the above Guideline will have care instructions included in a sewn-in label.

Garments that comply and are registered with the FOA Guideline Specification in Clause 2 must include confirmation of such FOA Registration clearly on the garment using a sewn in label or permanent print label as shown in Figure 1.



Figure 1: Registration Label

Garments that comply with the current AS/NZS 4602.1 Standard in Clause 3 must confirm AS/NZS 4602.1 (including year of publication) compliance in the garment label.

DISCLAIMER

In developing the attached Guidelines 2012, FOA has acted in good faith and taken all practicable steps to achieve the safety of employees. While the FOA believes that the Guidelines 2012 are the best practicable means of protecting the health and safety of all forestry employees in respect of this hazard, it accepts no liability for any injury or other loss or damage caused by or attributed to any failure of the Guidelines 2012 to meet any particular standard, including under the Health And Safety in Employment Act 1992.

