



PREVENTING FALLING THROUGH WHEN RECLADDING ROOFS OR INSTALLING PURLINS AND TILE SUPPORT SYSTEMS

When fixing tile support systems, laying underlay, installing battens, or stripping and recladding roofs, the hazard of falling through the open rafters must be controlled.

Follow the 'working at height hierarchy of controls' and put in place the best and most practicable measures to prevent a fall.

What is practicable will differ between new-build properties and strip and recladding roofing jobs. However, the hazard of a fall through a roof must be controlled.

Some examples of practicable measures to prevent an internal fall into the building include:

- boarding out the inside of the roof using timber or using proprietary decking systems to work from within the roofing structure once it is secured and stable (see Figure 1)



Figure 2: Safety nets installed on a house under construction.



Figure 1: Decking system that provides a working platform in the roof eaves (Image courtesy of Oxford Safety Components Ltd).

Where it is not practicable to prevent a fall, you must provide measures that minimise the distance and consequences of a fall for everyone working on the structure (this is known as a group control measure). Two examples of doing this are:

- installing a safety net (see Figure 2)
- placing air bags or bean bags inside the building under the fall area (see Figures 3 and 4).



Figure 3: Air bags being used as a fall mitigation measure during roof work (Image courtesy of Airtek Safety Products Ltd).

- fixing safety mesh over the top of the trusses (see Figure 2)
- reducing the spacing between the roofing battens/purlins to no more than 500m.



Figure 4: Bean bags being used as a fall mitigation measure during roof work (Image courtesy of Fall-Pac NZ Limited).

- the purlins are at least 1.2m long to ensure they span a minimum of three trusses
- the purlins are only fixed with the recommended nails
- the safe system of work dictates that the roofers never deliberately walk on the purlins mid-span between the trusses
- the safe system of work dictates that the roofers always walk on the rafter line when installing the tiles and slates.

Marking/setting out for purlin positioning

No one should walk on the roof trusses or open rafters unless a suitable 'group control measure' is in place to protect all workers from an internal fall. This could include safety nets, or air bags or bean bags.

Marking/setting out should be done sequentially throughout the purlin installation process.

Installation of purlins

Working off a safe working platform, place the purlins to be used on top of the trusses or pass/pull them up from the ground. Then secure the lower purlins working from either an internal or external work platform (see Figures 5 and 6).



Figure 5: A safe working platform was used at the start of the sequential installation of the purlins/roofing battens.

Purlins (similar process for tile Battens)

When roofs are being covered, purlins can provide a reasonably secure foothold and fall protection provided that the following criteria are adhered to:

- the purlins are fixed to rafters set at centres not more than 500 mm
- the purlins are a minimum size of 70 mm x 45 mm and meet the grading requirements specified in NZS3604: Timber-framed buildings



Figure 6: Measuring and installing purlins from an external work platform (Image courtesy of Site Safe New Zealand Inc).

Secure remaining purlins sequentially up to the apex of the roof by positioning the body over the truss, making sure that there is at least one secured purlin at waist level or above to minimise the hazard of a fall.



PREVENTING FALLS FROM HEIGHT



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For further information refer to the following guidance and standards.

MBIE Guidance

Factsheets

- *Preventing Falls from Height Factsheet 2: Selecting the right equipment for working safely at height*].
- *Preventing Falls from Height Factsheet 3: Short duration work at height*
- *Preventing Falls from Height Factsheet 4: Edge protection*
- *Factsheet: Caution – Ceiling battens do not provide fall protection*
- *Factsheet: Be safe working on roofs*

Best Practice Guidelines

- *Best Practice Guidelines for Working at Height*
- *Best Practice Guidelines for Working on Roofs*

Standards

- *NZS3604: Timber-framed buildings*