

SLEEP BETTER WITH TRUSSED HIP ENDS



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When speaking to builders about the benefits of trussed hip ends, one of the first and most common remarks is the noticeable improvement in roof rigidity and firmness compared with conventional framing

Whilst this fact always seems to be the first thing that comes to their minds it is not just something in their imagination.

From an engineering point of view, trussing the hip end does provide more positive roof bracing and support to the walls, which consequently adds to the structural integrity of the whole building.

This comes about because trusses have top chords plated to the bottom chords which are sitting squarely on the top plates and which in turn ensures the walls are more rigidly restrained.

This solid plated connection between roof and ceiling members makes the bracing of roofs considerably stronger.

The quality of the roofline and trussed hip end also exceeds that which you can expect to achieve with conventional framed end.

This is because the deflections of jack trusses are significantly smaller, even where y-jacks of the same size and grade as the rafters are used. The reasons for this are as follows:

Firstly, the heel cut reduces the effective

span of the top chord of the Jack truss.

The loose rafter on the other hand sits on a point further along at the outer corner edge of the top plate increasing the nominal span see fig 1 & 2.

Secondly, whereas the rafter is free to rotate at that point, the top chord of the y-jack is stiffened by a heel plate that couples it with the bottom chord.

As a result of these combined factors, the deflection of the top chord is reduced more than a third compared with a loose rafter of the same grade.

As consumers become more astute, it is inevitable that building standards continue to improve. Recent updates of national timber framing codes have stipulated more rigid deflection criteria to roof members.

That puts pressure on the conventional framing that is used on hip ends to be redesigned with higher grades or larger sizes.

The better finish that is achieved by trussed hip ends makes the system much more desirable.

To the builder, installation time is reduced and a fully engineered prefabricated product with no comeback is achieved. The homeowner receives a more rigid structure with a more satisfying superior finish.

For the fabricator, it means that their material supply cannot be substituted, doctored nor subjected to poor installation leading to unwarranted complaints.

The other common statement builders make is the time saving they achieve over conventional hip framing. It is my observation that trussed hip ends are not

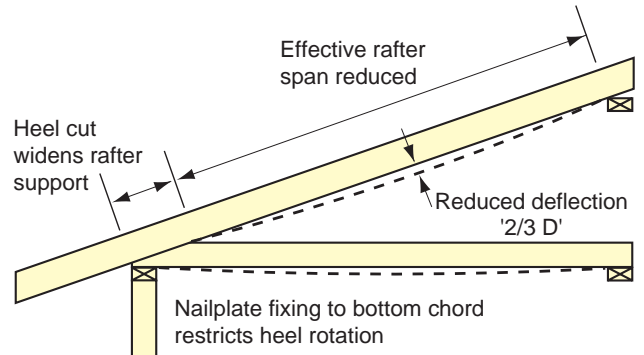


Figure 1
Jack trusses reduce effective span and reduce roof deflection

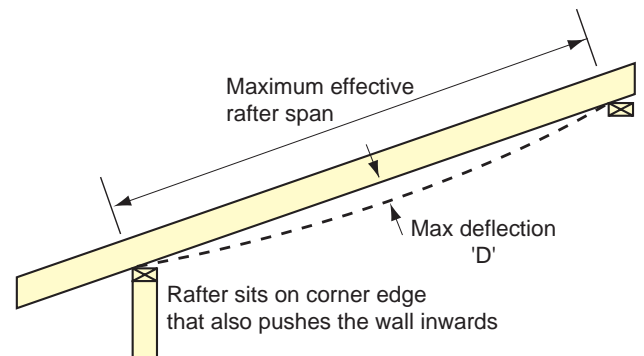


Figure 2
Rafter beam on outer edge of wall plate effectively increasing the nominal span.

only easier but also faster to install as Jack trusses are so much simpler to locate and place.

By saving on construction time builders can improve productivity and ultimately profitability. The economy of being able to construct more homes in the same period of time will far exceed the small additional cost of jack trusses being supplied for the hip ends.

The introduction of trussed roofs to Australia revolutionised house construction once the benefits were realised.

It is without doubt that the same will happen when the advantages of trussing hip ends are rediscovered.

To quote one builder referring to trussed hip ends, "There's nothing like a nice finish. I might have spent a few extra dollars on the trusses but then I can sleep easy!"