

FLOOR TRUSSES ARE NOT FLOOR JOISTS



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The use of floor trusses in domestic construction has increased significantly in the past five years, however, builders and sub-contractors still do not fully appreciate the differences between floor trusses and floor joists.

Apart from the well-publicised benefits of floor trusses most users of floor trusses do not fully understand the differences between the two products.

The most important distinction is that floor trusses are made to order and to the exact span requirement of each project are not to be cut or altered in any way on-site.

The most common queries regarding floor trusses in our Engineering Department are “How can we modify the span of a truss?” or “How can we repair a web that has been cut or removed?” A floor truss is an engineered product and should not be altered in any way. Floor trusses should never, without engineering advice:

- Be cut to shorten its length (unless designed to do so e.g. Posi-Joists and Posi-PLUS)
- Have any webs removed or tampered with;
- Be drilled or have holes cut through timber chords;
- Have any vertical timber webs removed;
- Have any connector plates removed.

Floor trusses may be lengthened or shortened under some circumstances but this should only be done after seeking advice from a qualified engineer.

SMALL INCREASE IN SPAN

A small increase in span of a floor truss may be achieved on-site, by fixing an additional timber vertical member to each end of the floor truss. This is appropriate for small extensions only and in most cases a couple of timber vertical members is all that is necessary to rectify the situation.

The timber vertical members are fixed to the end vertical of the floor truss, one at a time. The new multiple member end of the floor truss cannot be simply nailed but requires suitable nail-on plates or Tylok plates designed for the load conditions. (See Figure 1.)

SMALL REDUCTION IN SPAN

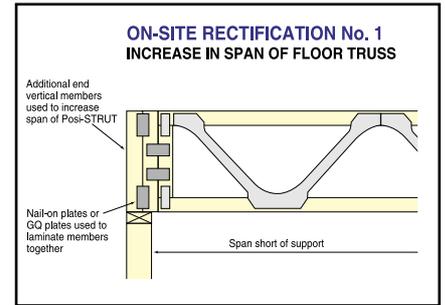
As most floor trusses are manufactured with small chord extensions the excess length of chords may be removed without a detrimental effect to the truss performance.

LARGE INCREASE IN SPAN

Generally large increases in span cannot be accommodated. In these cases new trusses should be manufactured to the correct span.

LARGE REDUCTION IN SPAN

Large reduction in span is feasible but may not be economical. Where webs are



cut, these need to be replaced with plywood webs nailed to the top and bottom chords to form a boxed beam.

This rectification, using plywood laminated to both sides of floor trusses, can also be used to remedy damaged webs. Note missing or ineffective webs result in overstressing of chords and adjacent webs. In these cases trusses must be stiffened in the affected section by using the plywood and nailing as specified by an engineer. (See Figure 2) The details described above are only an indication of some of the options available for site rectification of floor trusses. They should be adopted only after the designer has been consulted and has given the approval for measures to be taken on-site.

The above span related problems could have been avoided by the use of trimmable floor trusses, which allow a limited amount of trimming on-site.

