



CALL OUT YOUR COMPLIANCE!

All building work in Australia must comply with the Building Code, which ensures buildings are safe, healthy and durable for everyone who may use them. As suppliers of truss and frame, the importance of compliance cannot be overstated given the critical role your products play in a building.

Unlike trusses, the structural adequacy of a wall frame is sometimes taken for granted. And for reasons ranging from insufficient knowledge, experience or 'grey' areas within the framing code (AS1684), some common issues that impede compliance of a wall frame get overlooked both in design and on site. For a wall frame manufacturer, it is imperative to understand these issues, not just to ensure code requirements are met, but also to demonstrate the additional value-add aspects of your product that complements the builder. Some of the common 'gaps' related to wall framing are discussed here.

Tie-downs: There is a tendency by some designers to attach little importance for tie-downs in low wind zones like N2. This is only a myth as it is not the wind zone alone that dictates tie-down demand but also the load area supported by the component. For instance, a 2700mm opening in N2, will generate similar tie-down requirements on jamb studs compared with a 1200mm opening in N3, carrying the same trusses in sheet roofs.

Even when the tie-down requirement is assessed correctly, the load paths are sometimes not followed through. At openings that support lintels with lowered headers, one does not often see a specific tie-down connector provided to fix jack studs to lintels, without which the load path is broken as the lintel is not engaged in the transfer of the uplift reaction (Fig 1). By the same token, top plates that are sitting directly on a lintel need a connector to transfer the truss reaction down the load path, unless the truss is connected directly to the lintel.

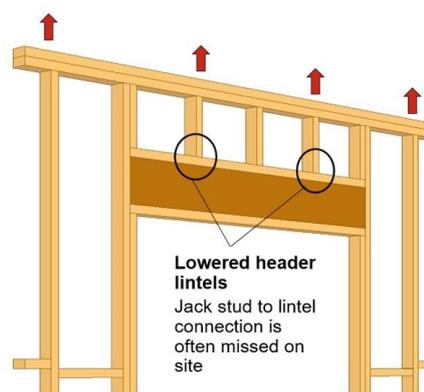


Fig 1 - Critical tie-down connectors often overlooked at openings

Wall Plates: Fixing of truss tie-down connectors to ribbon plates without engaging the top plate is another example of things that get overlooked on site. There is a misconception that as long as the wall plates (both ribbon and top plates) are tied-down to studs, the connection will be compliant. As illustrated in Fig 2a, fixing a connector only to the ribbon plate results in the top plate being ineffective in resisting the uplift loads unless an additional connector (e.g. batten screw) is provided to fix the two wall plates together at every truss location. Alternatively, a connector that can engage both plates may be used, e.g. cyclone straps, long multigrips or unities (Fig 2b).

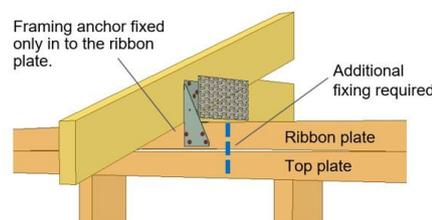


Fig 2a - top plate is not engaged unless additional fixing provided

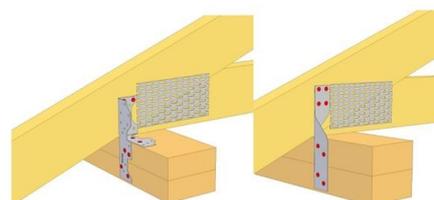


Fig 2b - Long multigrips or unities used to engage top plate

Wall Bracing: For design compliance, AS1684 requires wall bracing units to be evenly distributed across the building and the ceiling diaphragm to be checked for adequacy. This is not easy to achieve and therefore conveniently ignored unless sophisticated software (e.g. Pryda Build 4) is used for this purpose. Also, as the trend for open plan housing continues in our market, it is becoming increasingly difficult to achieve bracing adequacy using the traditional methods and products. Short wall lengths are a common place, especially along the front and rear facades of houses (see Fig 3) which require special engineered solutions involving wall truss braces like Pryda Wall Truss Brace (Fig 4) or portal frames.

The examples discussed in this edition of FTMA Tech Talk are some of design issues that need addressing. If resolved at an early stage, the time and cost savings can be significant which can go un-noticed unless communicated to the builder. So, call out the compliant wall frames delivered to site and the value you add to the product, as it can only take one instance to sour a relationship when issues are uncovered on site. In the wake of recent experiences in Queensland concerning machine driven nails, building authorities in most states have started to tighten the screws on matters of non-compliance. At the end of the day, it is only a matter of time.



Fig 3 – Front facade of a house with large openings and a few 'brace-able' walls

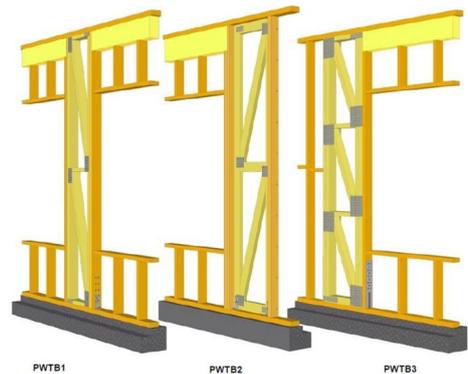


Fig 4 – Wall Truss Brace options



Our first edition of FTMA Tech Talk was written by Afzal Lahir, Engineering Manager of our Gold Sponsor, Pryda.

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