

# Safety and health alert

## 13/00 Fake bolts in tilt-up panels

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### Incident

The use of concrete tilt-up panels is widespread in Western Australia, especially in the commercial and industrial areas. When properly manufactured and constructed, tilt-up panels are an efficient and cost effective alternative to other building methods.

However, a recent fire at a concrete tilt-up panel warehouse in Rockingham revealed a grossly negligent practice that has the potential to cause injury or death.

The warehouse had been erected in 1992. When pre-cast bolt inserts in the panels did not line up during the fitting of faceplates, about half of the bolts in the warehouse had been cut off and tack-welded to a washer. The washer and bolt head had then been tack-welded to faceplates to make it look as if the bolt was fully screwed through the panel. The panels were being kept upright by the steel frame of the warehouse and the concrete slab.

Information received by the department suggests that this practice is relatively common in the industry, as is the use of other "shortcuts" to achieve the same result. The structural integrity of the buildings constructed in this way is significantly reduced and people using such buildings are at grave risk of injury should one or more of the improperly fixed panels collapse. This would be extremely pertinent for fire damaged buildings or when demolition is in progress.

There is also some evidence that the temporary bracing and fixings when constructing tilt-up are not being checked against design requirements.

The department is determined to stamp out these practices and will vigorously pursue those responsible for this unacceptable practice. In addition to facing prosecution under the [Occupational Safety and Health Act 1984](#) any person who knowingly fits panels in such a grossly negligent manner could be prosecuted for offences under the Criminal Code up to and including manslaughter.

### Factors

1. Insufficient care being taken when positioning inserts prior to pouring the panels.
2. The non-alignment problems not being raised with the structural engineer or architects.
3. Alternative fixings not being fitted when it was found that existing inserts did not align.
4. New holes in the faceplates not being made to align with the pre-cast inserts.

### Recommendations

1. Builders, supervisors and engineers must closely inspect all panel fixings and temporary bracings.
2. Grano-workers must correctly position inserts in panels as they are poured.



3. Riggers and erectors must ensure that fixings comply with design requirements to every panel.
4. Existing owners of tilt-up buildings should have a competent person check the fixings and connections of their premises.
5. Demolition contractors must pay particular attention to the adequacy of the fixings prior to commencing work. Temporary propping is considered essential.
6. Exercise extreme care when removing existing fixings for inspection or in the vicinity of either a tilt-up building during fire fighting or after fire damage.

## Further Information

Further information can be obtained from the WorkSafe internet site [www.worksafe.wa.gov.au](http://www.worksafe.wa.gov.au), or by contacting customer service on 1300 307 877 or email: [safety@docep.wa.gov.au](mailto:safety@docep.wa.gov.au).

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Date: April 2000

