

# SAFETY ALERT

<b>Number:</b>	VIC1007
<b>Subject:</b>	Anchor holding capacity
<b>Date:</b>	18 July 2010

## Hazard:

Designers are defined in the *National Code of Practice for Precast, Tilt-Up and Concrete Elements in Building Construction* section 2.3 “are responsible for two separate phases in the construction:

*Structural design, and  
design for erection”.*

It has come to RJB Industries Pty Ltd attention that some concrete panel erectors have deviated from the engineered design drawings without obtaining approval from the Designer. The *National Code of Practice* section 5.15 states “*Substitution of anchor or insert types and manufacture must not be made without the written approval of the shop detailer or an engineer”*

What has been happening is that some panel erectors are using a **lower** capacity load control anchor to fix the brace to its footing. These **lower** capacity load control anchors are too short to sustain the combined high load forces and cyclic loads acting on the brace and do not have the ultimate pull-out capacity to match the RJB brace load capacity.

Once the thickness of the brace foot and the positive engagement depth of the expansion sleeve into the side walls of the drilled hole are taken into account there is less than 55mm embedment with a corresponding reduction in ultimate pull-out capacity

To compound the safety hazard there are assortment of anchors in the market, all with different load capacities and no way to differentiate between them even between manufactures

Section 4.1.1 of the *National Code of Practice* covers Proprietary documentation and states “*All components used on site, within a particular system, should be compatible. Different proprietary components should not be mixed with confirmation of the compatibility from the supplier and the designer”*, same requirement is detailed in AS 3850 para 2.4.1



## Key Lessons:

- Ensure the person with control knows their duty to ensure that all hazards are identified and a Safe Work Method Statement has been prepared
- Ensure the bracing and fixing is “As-Built” to your design

## Recommendations:

- To overcome the identified safety hazards and to meet the minimum safety requirements as per AS 3850 and the new *National Code of Practice for Precast, Tilt-Up and Concrete Elements in Building Construction* for anchors in 20 Mpa concrete RJB braces requires a high capacity Grade 8.8 load control expansion anchor be used, with minimum length of 130mm and have a distinctive head design with marking to identify it as a certified and compliant anchor and have a lock out tag out system that can only be undone with a tool
- As part of the RJB Industries Pty Ltd Safety Brace System (SBS) ,RJB Industries only recommends the use of the BraceBolt - Grade 8.8, Dia 20x130 anchor and the BraceBolt – Grade 8.8 M20x55, Flanged Safety Bolt system.
- Inform erectors of their duties to comply with the requirements of AS3850 and the National code of Practice

