

SAFETY ALERT

FEBRUARY 2014

Insert Type Anchors on Cantilevered Scaffolding Platforms

Scope

This Safety Alert applies to all types of insert type anchors used to support cantilevered scaffolding platforms. Insert type anchors include:

- Screw bolts
- Expansion anchors (torque setting anchor)
- Coil bolts
- Chemical anchors

Issue

An incident occurred in Qld in 2013 where two workers fell from a cantilevered scaffolding platform and sustained injuries. A screw bolt type anchor used to support the cantilevered scaffolding platform pulled out of the concrete and allowed the scaffolding bracket to fall to the ground. The photograph below shows a cantilevered scaffolding bracket bolted to a concrete wall. The top anchor is mainly in tension (i.e. pull out load).



Actions

Insert type anchors are not recommended for work platform applications where the main force is a pull-out force, such as when the platform support bracket is bolted to a concrete wall. When using insert type anchors there are many critical factors which must be addressed. The likelihood of anchor failure occurring can be high.



The use of insert type anchors to support cantilevered working platforms off walls is not recommended for the following reasons:

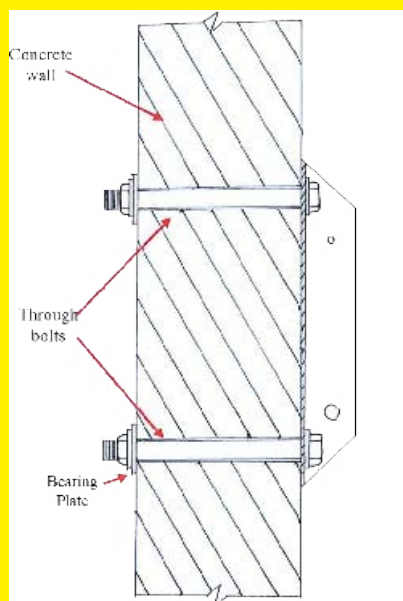
- Reliance on precise hole size and hole depth.

- Possibility of striking reinforcement steel in concrete when drilling the hole.
- Concrete dust can remain in the drilled hole if it isn't cleaned out properly.
- The required torque during the installation stage must comply with the manufacturer's specifications otherwise the anchor and concrete around the drilled hole could be damaged (this normally requires a torque wrench) .
- It is difficult to inspect the bolts to see if they are installed correctly.
- A professional engineer specifies the design of the anchorage system including the type and size of anchor and the anchor installation conditions.
- Every anchor used has been subjected to a tensile test specified by the engineer equal or greater than the design load, but does not damage the anchorage .
- A competent person visually inspects the installed anchor prior to use to verify that damage has not occurred.
- Anchors should only be used once and then discarded.
- The anchors in erected scaffolding are to be inspected at frequencies not exceeding one month or at more regular frequencies if specified by the engineer.

The preferred option for supporting work platforms off concrete walls is the use of through bolts. Through bolts are generally not prone to the same installation problems as those for insert type anchors listed above.

Where it is impracticable to use through bolts because access to the inside of the wall cannot be obtained, insert type anchors may be used under the following conditions:

* Note: Information gathered from Workplace Health and Safety Qld notice 31/01/2014



Typical Wall diagram showing through bolts



Close up view of bracket