

SAFETY ALERT #361



Dated: Sunday, 1st NOVEMBER 2009

Title: FALL OF MATERIAL DURING LIFTING

Sample of the GRC panel on top of a trailer bed



GRC panel is to be lifted by tower crane attached to two (2) lifting points



Safety net gave way due to the excessive weight of the fallen material



One of the detached lift points



Pictures below show the damage sustained by three (3) cars, where cars 1 & 2 were heavily damaged



INCIDENT DETAILS:

This alert is based on a serious near miss incident. Glass-fibre reinforced concrete (GRC) panels were being lifted by crane from a trailer on the ground going to the upper levels for future installation. While a panel, weighing 1.03tons, was being lifted by the crane, the cast-in lifting points apparently got detached from the load and fell to the ground passing through a safety net and causing substantial damage to three (3) cars parked on the ground. A total exclusion zone underneath the lifting process was not possible due to *extenuating circumstances*. The incident scene was immediately barricaded and controlled. Senior management were immediately notified. Thorough investigations were conducted by the Authorities, Dubai Municipality Inspectors, Safety & Quality Team and the GRC subcontractor. As a result of this incident, all lifting operations using cast in lift points on precast panels have been suspended until all issues are resolved. This incident has the potential to be a lot more serious if there would have been personnel underneath the load. Fortunately, nobody was injured in this incident.

CAUSAL FACTORS:

The Primary Causes of the Accident were:

- ❖ Final analysis of the root cause of the incident is still pending. However, initial investigations into the failure of the lifting points cast into the panel and other design issues are currently under investigation.

The Secondary Causes of the Accident:

- ❖ No mention of the use of cast-in points in the method statement and risk assessment of the subcontractor.

LESSONS LEARNT:

1. Risk assessment and method statement to be reviewed and amended to be more specific and detailed showing control measures for elements of work.
2. A thorough redesign of the lifting points cast in to the panel to include a factor of safety in case one lift point fails in the future.
3. Tighter quality procedures from the manufacturer to minimize the likelihood of poor workmanship.
4. Specific design drawings and calculations to be provided for design check by engineer prior to any lifting of panels using cast in lift points.

This was a very serious incident and one which could have been catastrophic. There is a very unusual situation on this site in terms of there is a dwelling within the confines of the site. The position of which would not allow an exclusion zone to be implemented and only Fan Netting was in place. This type of protection was not suitable and sufficient to capture something of this weight. Hence the stationary vehicles which were damaged. A revision of the craning and lifting operation has been carried out and technical investigations are still ongoing with regards to the GRC panel manufacturing process and the integrity of the cast-in lifting bolts which allowed the panel to fall.

This is a dangerous occurrence as there was an alarming amount of serious property damage. Cars should not be parked below the lifting area as this will force people to that area to retrieve a vehicle.