

## Safety Alert 13: Falling over of wall panel on truck platform

### Accident sequence

When unloading an inloader truck, a wall panel considerably lower than the others (height 160 cm, length 6.7 m, weight 5.1 tons) was the last one to be unloaded. It was the only panel that had been loaded in the rear section of the rack.

The driver decided to remove the locking key of the pin supporting the panel, presumably to speed up the lifting of the last panel. The driver obviously considered the single chain pulled round the panel to secure it adequately. The crane was unloading the previous panel into the worksite stacking rack.

As the driver got the key loose, the panel immediately fell on him. The driver was crushed under the panel until the worksite crane managed to lift the panel off him. The driver was left with broken ribs on his left side and a fractured spleen.



## Investigation findings

There was no safe place for the driver beside the panel on the platform floor. The panel was on one side of the platform and the driver hit the key out standing beside the panel on the platform floor. The key could also have been removed from outside the platform, but apparently the driver trusted the securing chain to hold the panel and in order to speed up work, decided to stay on. It was thus easier to hit the key out from inside the platform.

The securing chain had been placed asymmetrically round the panel. On the side which was facing the driver and which fell down, the chain was almost horizontal and fixed to the platform structures at a height of about 140 cm, while the other end of the chain was almost vertical and fixed to the platform floor. As a result of the abnormal placing of the chain, the forces in the tensioned chain contributed to the falling of the panel. The driver probably did not realise this when he removed the pin. As the panel moved slightly, the single securing chain became loose and the part of the chain chafing against the top corner of the panel could no longer hold the falling panel. If the panel had been of the same height as the other panels, the position of the chain would not have been such a big problem, and the panel would probably have remained upright even without the pin.

The correct securing position for the other end of the chain would have been on the platform floor where also the other end was secured.

The other panels had already been unloaded. They would probably have prevented the panel from falling, as the front end of the panel was between the other panels.

The driver was familiar with the way the chains of the worksite crane are fastened to the panel before the last guards preventing it from falling are removed. The securing chain is usually removed from the wall panels once the chains of the crane have been tightened. The pins of the stacking racks are also loosened when the lifting chains are tightened.

In other words, the worksite crane was not helping the panel stay upright.

## Matters brought up in interviews

The driver had had only about six months of experience in the transport of precast panels.

Several factors contributed to the occurrence of the accident, such as

- the driver went down to the danger area on the platform floor
- chain placed asymmetrically
- lack of additional securing by a crane
- other trucks waiting to be unloaded
- pins had been borrowed and did not fit properly in the pin row
- the other end was not supported (either by panels or securing chains)
- the last panel which fell was placed on one side of the platform
- the plastic corner guards of the chains slipped when the panel started to fall over.

Due to the slight sense of hurry, the driver with his relatively limited experience was not able to sum up all the risk factors, but decided to hit the locking key out with disastrous consequences.

## **Conclusions**

The securing chain only provided appropriate support to the panel in one direction. The panel fell over, when the rack pin was removed from the weaker side.

The essential thing was the combined effect of several risk factors and the inexperienced driver's inability to identify the obvious danger these caused.

## **Actions to prevent recurrence of a similar accident**

Clear lists shall be drawn up for each company and product of all the do's and don'ts at every stage of unloading and loading.

Safety Managers shall verify that the list is carefully studied with every driver.

It shall be ensured that also self-employed contractors are given adequate training in the safe handling of precast panels.

It shall be checked that new employees of transport firms have been provided with adequate induction in safety matters.