

# SAFETY BULLETIN

No 10/024

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## Deterioration and failure of cold / frozen food store ceilings

### Introduction:

HSE has recently completed a fatal accident investigation following the failure of the ceiling of a frozen food store.

Two men fell to the floor of the store when insulation panels separated from the steelwork, which supported the ceiling. One of the men died from his injuries.

### Background:

The store was constructed in the 1970s. The insulation panels consisted of a sandwich of steel sheets bonded to polyurethane foam. These were bolted to a metal support frame, with engineering grade plastic bolts. The manufacturer of the panels and bolts is unknown. The design is believed to have been common and there are likely to be many of these stores still in use.

Following the accident, the investigation revealed that the bolts had consistently failed at the point where the thread entered the metal nut which secured them into the supporting frame. Tests have identified fatigue and corrosion (due to oxidation and exposure to chlorine) as the main reasons for the deterioration of the bolts. Some of the bolts which had failed dropped down slightly but remained within the panels; others were flush but had also failed. Therefore there were no obvious signs of failure

### Action required:

Therefore I would like to bring to attention. Any one working on cold room store ceiling must adhere to Safe Work Instruction B95

All managers and safety representatives must ensure that this Safety Bulletin is communicated throughout.

Regards

Kevin Gratton  
HSQE Officer