

September 2017

Grain Silos

This Safety Alert highlights the serious health and safety risks of entering and working in a grain silo.

What happened?

A worker was trapped in grain when an unloading auger was turned on while the worker was inside a grain silo.

The incident occurred when two workers were working inside the silo and a third worker started up the auger, causing the grain to move. The first worker sank into the grain and became trapped. The second worker went for help. By the time the second worker returned with help, the first worker was already under the surface of the grain.

This incident highlights the risks for workers (and any other person) when effective controls are not set up and safety procedures are not followed when working in a confined space, such as a grain silo. A person can easily become trapped and sink into the contents of the silo.

In these circumstances, it is likely that the person will suffocate.

What we know

Silos present a number of risks that must be managed appropriately. Entering into silos, either from the ground or the top, presents a significant risk to workers. Workers can easily be engulfed by bulk materials such as grain, sand, flour, fertiliser and sawdust. Bulk materials are not solid and there are often unstable areas (voids) that may collapse under the weight of a worker. This can cause a worker to become trapped or buried in the silo.

WorkSafe advice

Before climbing up, or working in a grain silo, PCBUs must complete a risk assessment and review their controls.

It is important to consider:

- Can the work be done in another way without the need to climb or enter the silo?
- Does the silo have appropriate lockout controls to ensure that augers and other equipment cannot be turned on when workers are inside a silo?
- Has adequate information, supervision, training and instruction been provided for workers? This requirement applies for all workers, including contractors, for all procedures and equipment they may work with.
- Have communication and emergency procedures been set up and discussed with workers?

PCBUs should:

- Ensure that the risks are managed and minimise the need to enter silos where possible.
- Ensure that people are appropriately trained to work inside silos.
- Take advantage of new technology, such as sweep augers or vacuums, that reduce the need for physical entry.
- Understand the contents in the silo as different grains can react differently and may require different risk management actions.
- Test the rescue system they intend to use so they know it will work in an emergency.
- Test the atmosphere to determine the oxygen level and presence of any hazardous contaminants before entering the silo.
- Ensure that suitable forced ventilation and respiratory protective equipment (RPE) is used for the specific conditions identified during testing.

- Have a standby person observe the work from outside the silo and is able to assist if needed.
- Put up warning signs denying entry to anyone who has not been given appropriate training.

Workers should:

- Ensure that they are adequately trained to do the work being asked of them
- Understand the procedures for entry and do a risk assessment before entering the silo
- Ensure communication between all parties working in or near a silo

Guidance

WorkSafe New Zealand endorses the following guidance:

AS 2865 Confined spaces. (Available from SAI Global at www.infostore.saiglobal.com)

Additional guidance can be found:

WORKSAFE NEW ZEALAND

Confined spaces: planning entry and working safely in a confined space (www.worksafe.govt.nz)

SAFEWORK AUSTRALIA

Confined Spaces: Code of Practice (www.safeworkaustralia.gov.au)

WORKSAFE VICTORIA

Your health and safety guide to Confined spaces (www.worksafe.vic.gov.au)

SAFETY ALERT: CONFINED SPACES ON FARMS

Health and Safety Executive UK
Managing confined spaces on farms (www.hse.gov.uk)

Workplace Safety and Prevention Services (Ontario)
Silo Safety (www.wsps.ca)

**AUTHORISED BY JO PUGH, DEPUTY GENERAL MANAGER, ASSESSMENTS
ISSUED BY WORKSAFE NEW ZEALAND
GRAIN SILOS ALERT - VERSION 1**