



Mines Safety Significant Incident Report No. 185

Serious entanglement injury sustained during calibration of conveyor belt weightometer

Summary of incident

A worker was cleaning a calibration weight, a routine task completed before calibrating the conveyor belt weightometer, a task that required the conveyor to be running. The broom being used to clean the weight, which was located about 30 cm beneath the conveyor, touched the running conveyor, causing the handle to “flick” the worker’s hand into the return roller, trapping his arm.

The worker received third-degree burns to his arm and fractures to his hand. Five months after the incident, he was still unable to return to work, had lost significant arm function and was in constant pain.



Photographs showing location of weightometer under conveyor belt



Photographs showing calibration weight requiring cleaning (left) and nearby return roller (right)

Probable causes

Direct:

- The conveyor was not isolated during cleaning of the calibration weight.

Contributory:

- There was no separation of the weight cleaning task from the weightometer calibration task.
- The guarding of moving and rotating parts near the conveyor weightometer was inadequate.
- There was no approved work instruction for this routine task.
- The site was overly reliant on "shop floor" low-level risk assessments.
- There was a lack of training and competency assessment for the task being performed.

Actions required

Conduct a team-based risk assessment for tasks where there is the risk of exposure to rotating and moving parts, and develop an approved safe work instruction where all practical measures have been taken to eliminate or mitigate the hazard. For the cleaning of conveyor belt weightometers, such measures might include:

- isolation of the conveyor belt to allow the weights to be cleaned manually without risk of entanglement
- installation of a hose point to facilitate cleaning of the weights without the need to use tools
- an audit of the conveyor where this task is undertaken, and implementation of a plan to replace, modify or install guarding to control the risks associated with rotating and moving parts.

Develop a safe system of work to allow calibration of the weightometer while the conveyor is running.

Implement competency-based training for work done on conveyors where there is the risk of exposure to rotating and moving parts.

Further information

Visit the publication section of the Resources Safety website at www.dmp.wa.gov.au/ResourcesSafety for the following safety alerts and code of practice:

- Mines Safety Bulletin No. 96 *Conveyor guarding*
- Mines Safety Significant Incident Report No. 55 *Conveyor belt – fatal accident*
- Mines Safety Significant Incident Report No. 2 *Conveyor belt – fatal accident*
- *Safeguarding of machinery and plant – code of practice*

The industry standard practice for conveyor safety is captured within Australian Standard AS 1755 *Conveyors – Safety requirements*. Note, however, that an employer's duty of care obligations under the *Mines Safety and Inspection Act 1994* and *Mines Safety and Inspection Regulations 1995* are paramount and, in some circumstances, compliance with AS 1755 alone may not be sufficient.



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