



Significant Incident Report No. 274

Subject: Structural failure of fixed conveyor stacker

Date: 18 March 2019

Summary of incident

Note: The Department of Mines, Industry Regulation and Safety's investigation is ongoing. The information contained in this significant incident report is based on materials received, knowledge and understanding at the time of writing.

In February 2019, a fixed conveyor stacker collapsed during normal operation. Other than the temperature reaching 47°C, there were no extreme weather events at the time nor any abnormal operational loads. It was not running at full capacity at the time of failure although it had run close to its limit earlier in the day.

The failure has halted use of the stockpile and subsequent processing and production. It has also created a hazardous environment for demolition of the stacker.

There were no personnel in the vicinity at the time of the failure.



Collapsed stacker resting on stockpile and showing product build-up on bottom chord.

Direct causes

- The structural integrity of critical members had deteriorated substantially due to corrosion.

Contributory causes

- Inadequate inspection and maintenance of the structural members.
- Failure to remove product build-up on structural members.
- Failure to provide access to inspect all parts of the structure.

Actions required

The following actions are recommended to manage the structural integrity of structures according to relevant Australian Standards and having regard to the designer's specifications:

- Ensure all practicable efforts are made to prevent:
 - build-up of product or other material on structures
 - exposure of the structure to corrosive materials.
- Prior to integrity inspection of plant and structure, ensure all product is removed from members and joints and the area is cleaned to allow for inspection and identification of all types of defects.
- Ensure access is provided to all parts of the structure for viewing and testing as required by the competent person(s) undertaking the inspections. This may require elevating work platforms (EWPs), scaffolding, confined space permits, isolation of moving equipment and appropriate PPE.
- Engage competent person(s) to undertake the inspection and testing, where required. The competent person(s) must have the knowledge and understanding to identify whether a member has been structurally compromised and the rate at which deterioration of the member is occurring.
- The competent person(s) inspecting the plant and structure must ensure they have sufficient time to undertake the inspection, copies of the structural drawings, and the performance requirements of the structure and plant.
- Ensure repairs are undertaken within the timeframes recommended by the competent person(s).

Further information

Visit www.dmp.wa.gov.au/ResourcesSafety for information on occupational safety and health in the resources sector.

- Mines Safety Bulletin No. 43 Structural safety of buildings and plant
www.dmp.wa.gov.au/Documents/Safety/MSH_SB_043.pdf
- Mines Safety Bulletin No. 124 Structural safety of buildings, plant and other structures
www.dmp.wa.gov.au/Documents/Safety/MSH_SB_124.pdf
- Toolbox presentations from the 2015 Structural Integrity Forum
www.dmp.wa.gov.au/Safety/Toolbox-presentations-16177.aspx

This Significant Incident Report was approved for release by the State Mining Engineer on 18 March 2019

Talk to AME to arrange your structural steel audit and save embarrassing down time.