



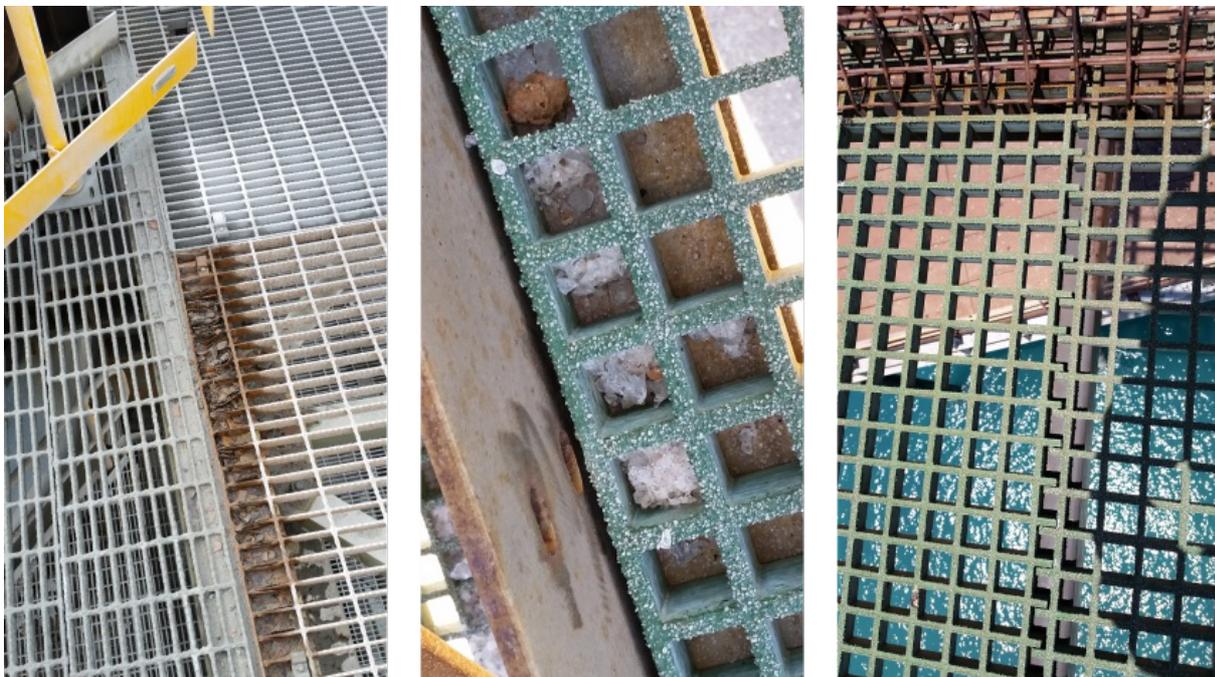
## Mines Safety Bulletin No. 176

**Subject:** Inspection and maintenance of accessway and platform gratings

**Date:** 10 August 2020

### Background

Since 2018, mines inspectors have raised many defects and notices related to the poor condition of accessway grating in plants at more than 60 mines. This is notable around sumps and drains, above leach tanks and in saline environments. Gratings are often corroded, deformed, inadequately secured and/or incorrectly installed. Grating supports are frequently cracked, corroded or missing.



1. Corroded load bars at support 2. Grating trapping corrosive material against the steel support 3. Grating trimmed with insufficient end bearing on support

### Summary of hazard

Poor installation or maintenance of accessway gratings and their supports may result in:

- a worker falling with potential for serious or fatal injuries. The fall can expose workers to other hazards including drowning, harmful atmospheres and hazardous materials
- the grating dislodging and falling onto workers below with potential for serious or fatal injuries.

There is also an increased risk of failure of the accessway or platform during maintenance activities when point loads associated with scaffolding or specialist equipment are in use. This exposes multiple workers to the hazards.

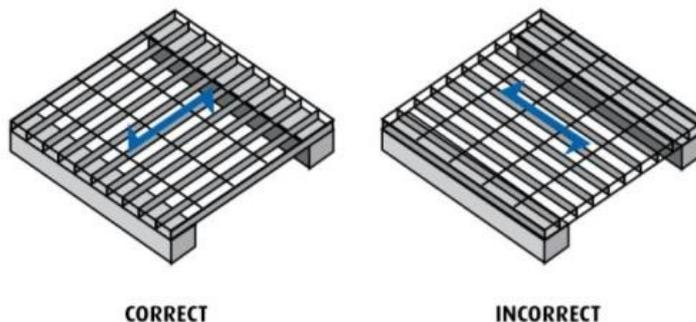
## Contributory factors

- Inadequate inspection and maintenance of accessways contributes to the poor condition of gratings and potential failure.
- Potential for failure is significantly increased when the load bars are damaged or corroded adjacent to a support or at midspan.
- Poor design and detailing of accessway, platform gratings and their supports may accelerate the deterioration of the grating, its fixings and supports.
- Corrosive environments associated with salt, acids and solvents, as well as regular exposure to moisture, accelerate the deterioration of steel gratings and supports.
- Ad hoc modifications and addition or removal of penetrations to accessways may cause the grating or its supports to be overloaded.
- Grating that is subject to vibration or lateral loads (e.g. on plant, ramps or adjacent to crushers) may not be suitable for fixing with screw or bolted fasteners.

## Actions required

The Department recommends the following actions are taken.

- All gratings and grid mesh panels should be inspected regularly by a competent person. The inspection should include sumps, drains, platforms, walkways and stairways.
- Competent persons inspecting accessways must be trained to identify:
  - the load capacity of the gratings and recognise when they are overloaded
  - the correct installation, the end bearing and fixing requirements, and the maximum span and minimum width of all grating types used on site.
  - when grating, or its support, should be referred to an engineer for further assessment.
- Ensure both the designer's and the original equipment manufacturer's (OEM's) specifications and manuals are available for the competent person inspecting the accessways.



Example of load bar direction from OEM literature

- Competent persons inspecting accessways and platforms must be able to assess:
  1. If the grating is damaged or deformed. This includes identifying:
    - twisted or deformed load bars
    - penetrations that have been cut into the grating

- corroded grating or loss of protective coating
  - damage of any sort to reinforced plastics, including cracks or chips that expose fibres and/or fraying.
2. If the grating is fixed securely. This includes checking whether:
- the grating moves under foot
  - there are sufficient fasteners. Generally, a minimum number of clips is specified by the OEM, which may be upgraded by the designer
  - the fasteners are in good condition, particularly whether they are corroded or deformed
  - the grating is vibrating or on an incline.
3. If the supports for the grating are in good condition. This includes checking whether:
- steel supports are twisted or corroded
  - the concrete is spalling or not level
  - the grating has sufficient length bearing on the support and has contact for the full length of the support.

## Further information

- Australian Standard AS 1657 Fixed platforms, walkways, stairways and ladders – Design, construction and installation
- Department of Mines, Industry Regulation and Safety

SIR No. 227 Grid mesh falls from drill mast

[www.dmp.wa.gov.au/Documents/Safety/MS-SIR\\_227\\_Grid\\_mesh\\_falls\\_from\\_drill\\_mast.pdf](http://www.dmp.wa.gov.au/Documents/Safety/MS-SIR_227_Grid_mesh_falls_from_drill_mast.pdf)

SIR No. 159 Fall through grid mesh floor – fatal accident

[www.dmp.wa.gov.au/Documents/Safety/MSH\\_SIR\\_159.pdf](http://www.dmp.wa.gov.au/Documents/Safety/MSH_SIR_159.pdf)

This Mines Safety Bulletin was approved for release by the State Mining Engineer on 10 August 2020