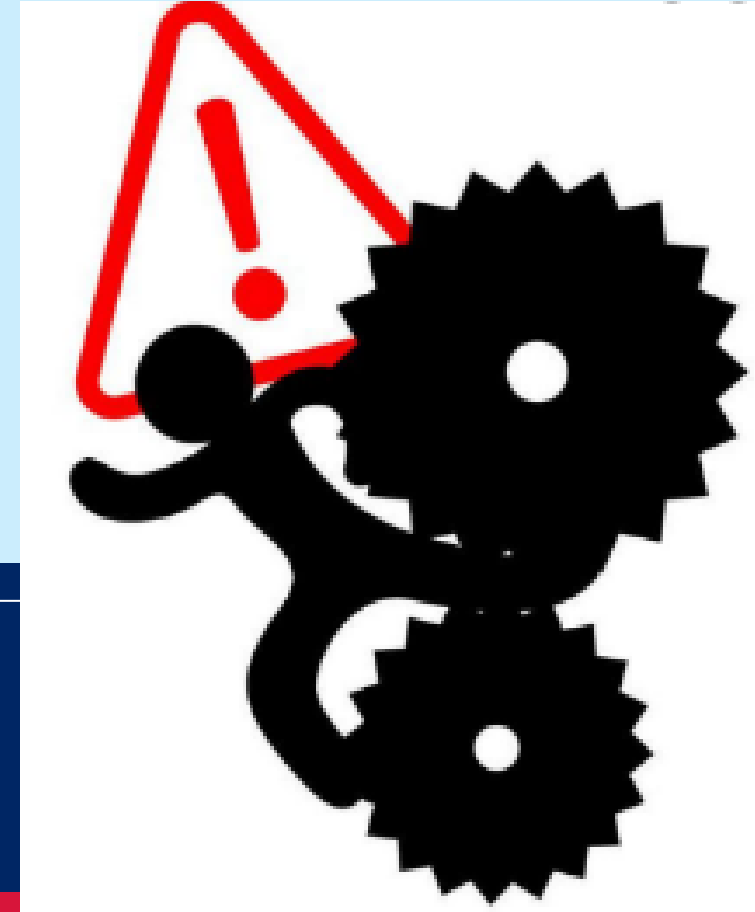


Plant Guarding – Entanglement Hazard Machine Failure Hazard

Small mines roadshow

ALWAYS try to eliminate and then
apply the hierarchy of controls



February to March 2023

Regional.nsw.gov.au

Who had a mum that said:

“An ounce of prevention is better than a pound of cure”

Types of Preventative Controls

- Guarding and other physical barriers
- Isolation / Lockout
- Inspections and defect / hazard management

Guarding



Poor guarding – exposed shaft and keyway

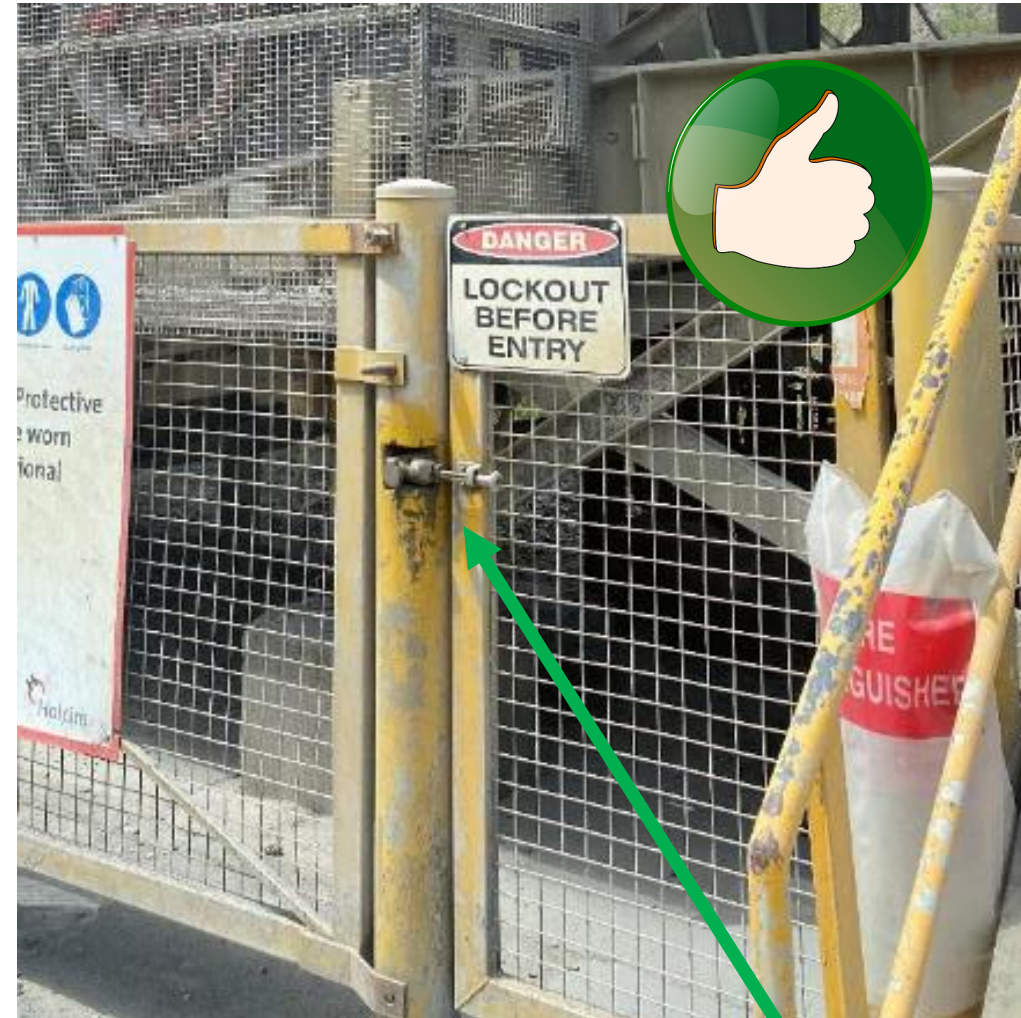


Improved guarding – preventing access to undersides

Preventing Unauthorised Access



Barrier from entering an area – signposted but not secured



Barrier from entering an area – secured (lockable)

Preventing Unauthorised Access



Perimeter fence – not secured (no nut on bolt)



Perimeter fence – secured by chains

Guarding



Poor guard security – cable tie and missing nut



Good signage on guard and full coverage of pinch points

Access



No protection under belt
Would signage be adequate?
Think: Hierarchy of Control



Hard barrier preventing access
underneath conveyor with good
signposting

Guards and Interlocks



Hinged guard to assist in cleaning
(but what if it was hinged on the opposite side? Hint: pinch point)



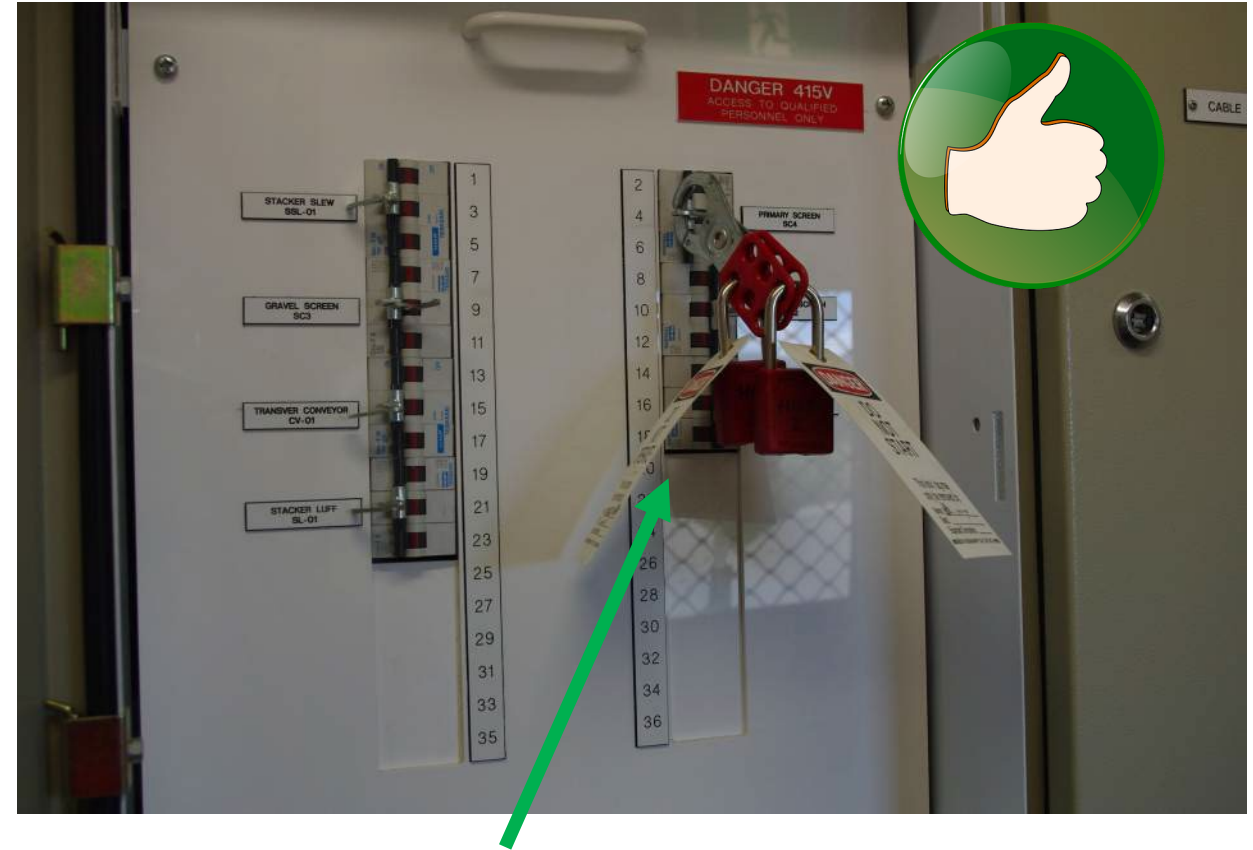
Interlock on gate
(plant must need to be restarted if opened)
What if others close the gate and restart?
How is personal isolation applied?

Isolation



No isolation under conveyor while cleaning

Are there other ways of safer cleaning?



Correct isolation – 2 locks = 2 workers

Emergency signage & pulley tensioning



Emergency Stop clearly signposted



Pulley tensioning external to guard

Emergency Stops



Missing emergency stop lanyard

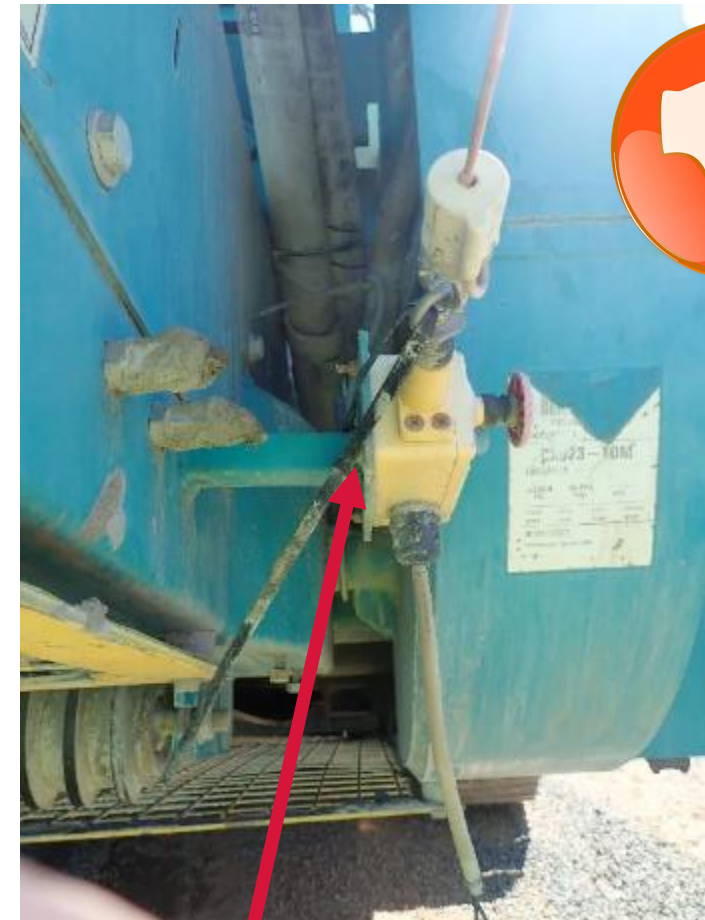


Types of signage for emergency stop lanyards

Emergency Stops

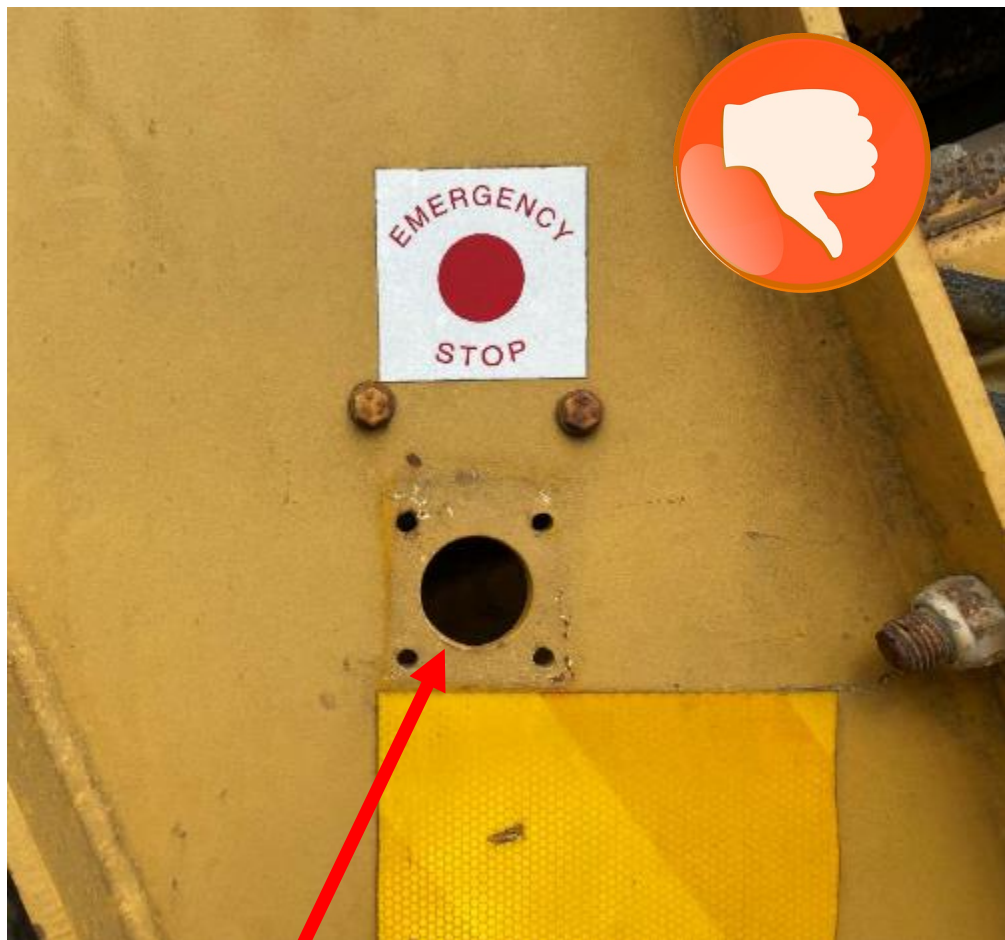


Is this a suitable emergency stop lanyard?



Cable tie preventing correct operation or just holding it

Emergency Stops



What Emergency Stop?
The pre-start was ticked 'OK'?



Emergency Stop
Guarded from accidental bumps
Well labelled and “stop and lock off”

Emergency Stop



Pre-start was ticked OK
AGAIN?



Alternate to using steel guarding products



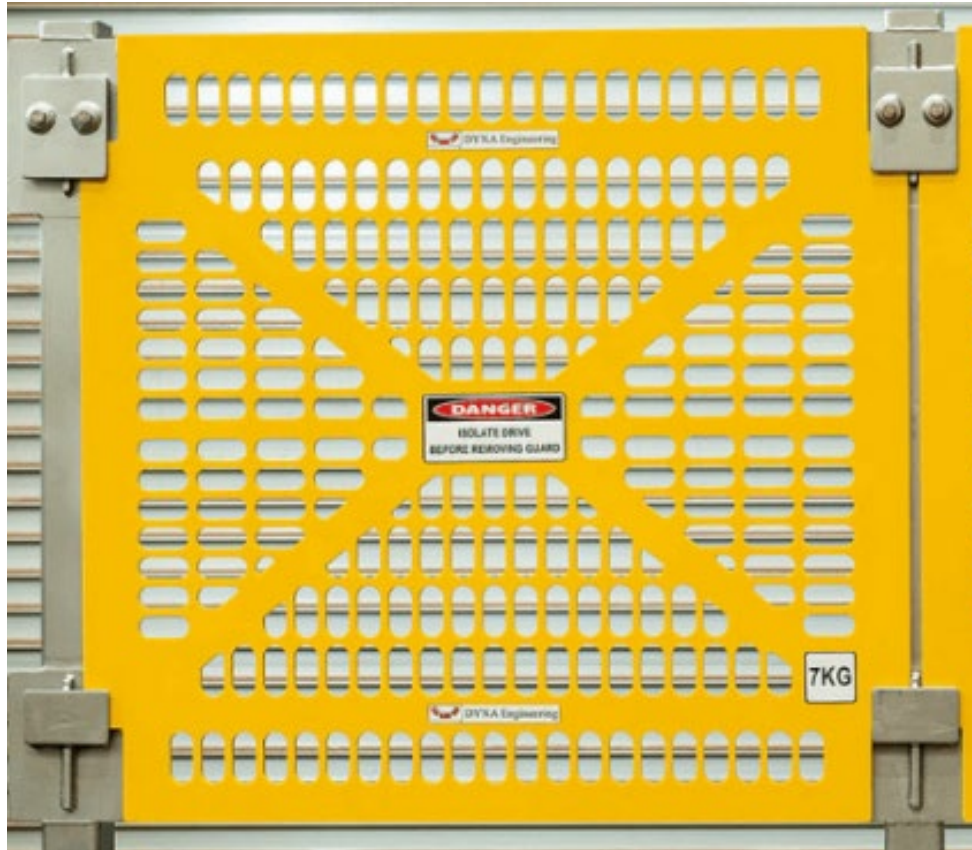
Alternative product to steel – Fibreglass Reinforced Plastic (FRP)

Becoming more commonly used in other industries so it is becoming easier to purchase what you want

Multiple uses in the quarrying industry for guarding and also walkway plates, handrails, gates, storage tanks, etc

Various properties that are improvements to steel eg lightweight, corrosion resistance, heat resistance, high strength (per ratio to weight compared to steel)

Preventing Unauthorised Access



Alternative product to steel – Polyurethane (HDPE)

Becoming more commonly used in other industries so it is becoming easier to purchase what you want

Multiple uses in the quarrying industry for guarding and walkway plates, handrails, gates, storage tanks, etc

Various properties that are improvements to steel eg lightweight, corrosion resistance, heat resistance, high strength (per ratio to weight compared to steel)



Any questions?