



Thomas Greaves, General Manager of DYNA Engineering, explains how high-density polyethylene is revolutionising conveyor guards, with a number of safety, convenience and maintenance benefits.

**CONVEYOR SYSTEMS ARE CONSIDERED ONE OF** the highest risk areas on a mine site. Reducing time spent in and around the conveyors is a major benefit and helps reduce overall risk.

Traditionally, steel is used to manufacture the guards that keep the area around a conveyor clear and safe. However, steel conveyor guards have a number of safety and maintenance limitations.

Lifting heavy objects presents significant risks, especially in the mining industry. Lifting objects weighing 15 kilograms or more is considered a no-go, while most steel guards struggle to remain lighter than 12 kilograms. When site operators are consistently removing and re-installing guards to maintain conveyors, the repetitive nature and stress can add up and take its toll.

High-density polyethylene (HDPE) conveyor guards can offer a lighter, safer and easier to maintain alternative. Compared with conventional steel, HDPE conveyor guards can be up to 40 per cent lighter. They can also be removed in a matter of minutes, where special hot tooling is needed for costly welding and cutting on steel guards.

Installation is easy, with the guard simply sliding into place and fastened with two bolts so it can't be removed. No complicated instructions or special skills are required, reducing the likelihood and risk of accidents.

During maintenance shutdowns, HDPE guards can be safely and easily secured on the conveyor handrail.

This conveniently ensures they are out of harm's way and reduces the likelihood of them being misplaced, which sometimes occurs under maintenance shutdown pressures.

### **Manufactured in safety yellow**

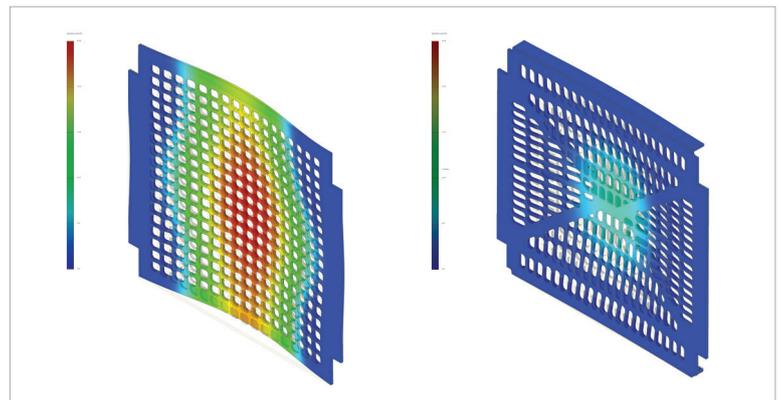
Conventional steel guards require a great deal of painting to maintain the safety yellow colour.

Due to the size of the mesh, it's a costly and wasteful process. A lot of paint is used, and a significant amount is lost in the process. Often, operators resort to hand painting, which is time consuming and expensive.

However, HDPE conveyor guards are made from safety yellow-coloured material, so no painting is required. This greatly reduces conveying system maintenance hours and cost.

**ABOVE:**  
DYNA Engineering's General Manager, Thomas Greaves, inspects some of the first HDPE "X" design conveyor guarding panels in its Perth workshop.

**BELOW:**  
The deflection differences between a conventional HDPE conveyor guard versus DYNA's new "X" design HDPE guard.



### Free of rust and corrosion

One of the major outright benefits HDPE has over steel results from it being a non-metallic material. HDPE is rust and corrosion free, further reducing long-term maintenance costs and minimising potential rectification works.

HDPE conveyor guards are also resistant to many chemicals, making them very applicable to conveyor



guarding in processing plants and facilities.

Chemicals commonly used in mining processing, to which HDPE is resistant, include caustic soda, hydrochloric acid, kerosene and sulfuric acid.

### No metal detector issues

Steel guarding can cause interference issues with metal detectors used on conveyors to detect fugitive materials. This can require lowering the detector's sensitivity to remove the problem, which can allow fugitive material to slip through.

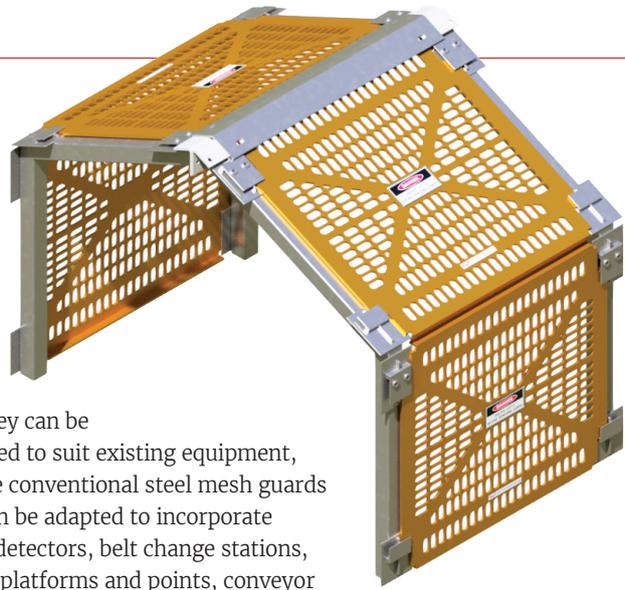
HDPE conveyor guards do not interfere with metal detectors. This allows for an increase in metal detector sensitivity and calibration to the optimum level.

### Additional DYNA Engineering "X" HDPE Conveyor Guard advantages

DYNA's exclusive and patented "X" shape design increases the guard's strength substantially (up to 60 per cent) when compared with others. It is engineered to be robust, suited to heavy-duty mining and industrial applications.

The "X" design guards are engineered to deliver reduced deflection and exceed Australian Standards:

- Series AS 4024 : 1 : 2014
- AS 4024 : 3610 : 2015
- AS 4024 : 3611 : 2015



They can be designed to suit existing equipment, replace conventional steel mesh guards and can be adapted to incorporate metal detectors, belt change stations, access platforms and points, conveyor trip wires, cabling and any other requirement. They can even be designed to incorporate retractable idler roller frames. In this case, access to the idler frame can be made via the simple removal of a single guard.

There is also a fully enclosed design option which incorporates hungry boards to contain rogue material on the conveyor.

DYNA Engineering HDPE conveyor guards can be as light as six kilograms for a one metre by one metre panel. The guard weight is engraved on the panel for quick and easy assessment by operators to help prevent the risk of lifting injuries.

Manufactured in Perth, a replacement guard for an existing conveyor can be manufactured in a couple of days, much faster when compared to the potential weeks or months with others sourced from overseas. **B**

### SUMMARY OF HDPE BENEFITS OVER STEEL

BENEFIT	HDPE CONVEYOR GUARDS	STEEL CONVEYOR GUARDS
Doesn't interfere with metal detectors	Yes	No
Lightweight	Yes	No
Minimised overhead lifting	Yes	No
Marked weight on panel	Yes	No
No painting	Yes	No
Corrosion free	Yes	No
Manufactured in colour	Yes	No
UV stable	Yes	No
Fade resistant	Yes	No
Can be removed in minutes	Yes	No
Only simple tools required	Yes	No
Convenient conveyor railing storage during maintenance	Yes	No

**ABOVE:**  
There is a fully enclosed design option available, which incorporates hungry boards to contain rogue material on the conveyor.

**LEFT:**  
HDPE guards can be installed by fastening two bolts.