

THE MANY USES OF TIVAR IN MINING

AUSTRALIAN MINING SPEAKS TO EPLAS DIRECTOR LISA MARSHALL ABOUT WHAT MAKES TIVAR SO ENDURING (IN MORE THAN ONE SENSE OF THE WORD).

Plastic specialist Eplas is a leading Australian supplier of Tivar, a material primarily based on ultra-high-molecular-weight polyethylene (UHMWPE).

Available in several grades — standard (virgin grade), premium (modified grade) for bulk handling applications — Tivar polymers are ideally suited to a wide variety of engineering applications.

One of Eplas's standout products is Tivar 88, which leads the company's line of bulk material grade linings.

"Tivar 88 is the world-recognised premium lining product for bulk material handling, exemplified by its low coefficient of friction and excellent wear properties," said Lisa Morgan Marshall, director of Eplas. "It has extremely favourable sliding properties, is resistant to aggressive chemicals and has very high abrasion and impact resistance."

Tivar 88 is often used for lining in industrial bins, silos, loader buckets, hoppers, chutes, railway trucks and self-unloaders, where its properties are ideally suited to shifting orebodies and other such bulk solids often associated with the mining industry.

Tivar also possesses extreme flexibility with regards to heat resistance, retaining its properties at temperatures of -269C to +80C.

Last year, Eplas completed a major Tivar 88 hopper installation for Arrium Mining in Whyalla, South Australia, and has also supplied hopper and chute lining installations at docks for GORO Nickel in New Caledonia. Allegedly pleased with the results, Marshall said that more Tivar lining projects could be in the offing for the company in the future.

"The material's extreme wear and flow promotion efficiencies have proven to be extremely beneficial when handling abrasive minerals on such a large scale," said Marshall.

Types of Tivar

There are several varieties of bulk handling grade Tivar materials available from Eplas, all serving specialised functions and largely available to order.

VisiLiner for example, is a bulk handling option comprised of two

coloured, sandwiched layers of material, a 9mm top layer and 3mm bottom layer that acts as a wear indicator to show when the liner needs to be replaced.

Tivar 88 ANTI-STATIC is adapted for applications using explosive powders or other such incendiary materials, combining the durability of Tivar 88 with much lower surface resistivity.

Tivar 88 with BurnGard (aka FlamEx) adds a coat of flame retardant material to Tivar 88 that won't spread fires, proving particularly useful for lining applications where heat may be present. In mining terms, this most often means coal handling, especially in hot spots and stagnant coal environments where smouldering can occur.

When the source of the combustion is removed, Tivar 88 with BurnGard self-extinguishes and experiences no further impact.

Tivar Rubber-backed meanwhile is a composite material with 9mm Tivar + 2.1mm thick rubber backing designed to absorb high energy impacts, with the rubber backing providing impact absorption and thermal expansion that has the knock-on effect of minimising substrate corrosion.

It can also be glued to surfaces where metal fasteners could not be used. Within the purview of mining, this type of Tivar is especially useful for coal, mineral sands and cement handling.

Tivar 88 with QuickSilver liners help to reduce carryback during material transportation and unloading, being lighter and harder wearing than steel and aluminium. Elimination of the usual hang-ups associated with other lining systems also helps to increase safety by reducing risks associated with human intervention. It can also be fitted in a day and requires no ongoing maintenance.

"These materials are essentially self-cleaning," explained Marshall. "Installing chute and hopper linings makes the use of vibrators redundant; this helps to reduce noise levels substantially, which is much better for our ears."

"No sticking or carry-back also eliminates tip-over risk. Most loads dump clean by third ram stage —

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even wet clay and cement — and the reduced turnaround means more loads per day.”

These are just a few of the many types of Tivar polymer assisting the mining industry. ■

