

# Fortescue Metals Group – Elastotec Direct Bond Ceramic Lagging Case Study



**Fortescue Metals Group (FMG) is the world's fourth largest iron ore producer with mines located in the Pilbara region of Western Australia. Founded in 2003 Fortescue has discovered and developed significant iron ore deposits and has constructed some of the largest mines in the world.**

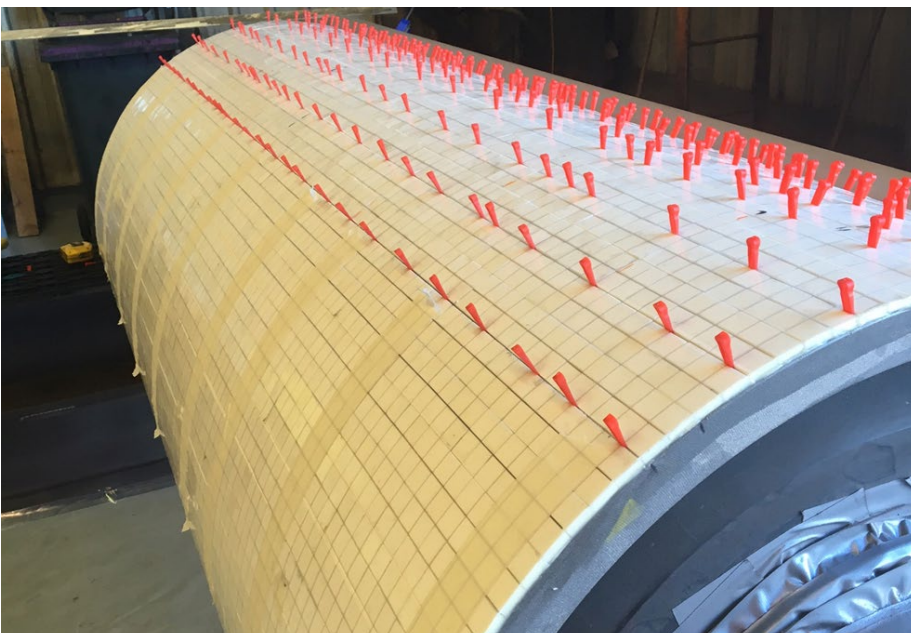
FMG today produces 165 million tonnes per year of high grade iron ore from four mines:

Cloudbreak, Christmas Creek, Firetail and Kings Valley.

Fortescue has constructed world class facilities for loading bulk carriers at its five berth Herb Elliott Port in Port Hedland. This facility is connected to the FMG mines via a 620 km heavy haul railway network that is the fastest in the world.

The FMG port loading facility operates 24 hours a day, 365 days a year so the reliability of the conveyor system is critical.

In April 2015 FMG decided to upgrade the tripper pulleys at their Port Hedland loading facility. Nepean Mining was awarded the contract to manufacture these pulleys and the work was done at the Nepean manufacturing facility in Mackay QLD. For the lagging FMG specified Direct Bond Ceramic Lagging based on its field service history where this lagging had provided in excess of 10 years operational life across a wide variety of iron ore handling operations.



Application of the DBCL tiles to the pulley shell

The engineers at Nepean selected the Elastotec Direct Bond Ceramic Lagging for these pulleys based on a number of technical advantages that included:

- Elastotec metal primer to prevent oxidation of the pulley surface after sand blasting and to promote high levels of adhesion.
- High strength Elastotec adhesive that provided adhesion of the tiles to the pulley shell above 20 MPa.
- Ceramic tiles manufactured with 96% aluminium oxide for increased crack and abrasion resistance
- An innovative application system that greatly reduced the man hours required to apply the lagging

Following successful installation and operation of the six tripper pulleys, and positive feed back from FMG, Arun Bangalore the Nepean Mining W.A. Service Manager expects that the pulleys will easily meet the clients service life expectations. A further four pulleys have been ordered and will also be supplied with the Elastotec DBCL.



Grouting the DBCL to finish the lagging



The Nepean Mackay lagging team with a finished DBCL pulley