

White FDA-approved Ceramic Lagging – bulk sugar ship-loading conveyor



MV “PIONEER”

As one of only three in the world, Sugar Australia operates a specialised food-grade bulk refined sugar vessel, MV “Pioneer”. The vessel operates in a Bulk-In, Bulk-Out/Bag-Out (BIBO) manner where refined sugar is loaded into the ship as a Bulk-In process and later unloaded either in bulk (Bulk-Out) or in bags (Bag-Out). MV “Pioneer” has a cargo capacity of 20,000 tonnes and has been designed to load and transport refined sugar in bulk to Australian and overseas destinations and discharge it in bulk at 500 tonnes per hour or in bags at 3,000 tonnes per day.

The operation of this ship-board conveyor presents a number of unique challenges, not least of which is the constant operation in a marine environment where corrosion is an ongoing problem. In addition, the conveyor had a unique requirement that the belt and lagging had to be white and had to be made from materials suitable for contact with food.

Elastotec developed a white ceramic lagging made from FDA materials approved by the U.S. Food and Drug Administration (FDA) for handling sugar on a ship-loading conveyor drive pulley. This project was carried out working closely with Global Product Supply – Mackay who had the contract to supply and install the lagging.

Elastotec developed this new lagging to meet a number of key requirements that were crucial to obtaining the required service life. These requirements included:

- Lagging had to be white as the material being transported was sugar and black lagging could be a source of unacceptable contamination
- Materials used in the lagging had to be suitable for direct contact with food i.e. FDA-approved
- Adhesion of the tiles to the white rubber backing had to provide a 100% rubber tear bond to eliminate the chance of tile loss due to de-bonding – this required new bonding systems and extensive testing by Elastotec
- Rubber tear adhesion of the lagging to the pulley to ensure long service life. The operation of this conveyor in a marine environment presented unique challenges as the lagging had to be applied to the pulley in-situ, therefore a room-temperature bonding system was required. Elastotec had previously developed a high performance cold vulcanised adhesion system consisting of metal primer, two part adhesive and a buffed CN bonding layer incorporated into the back of each lagging strip.

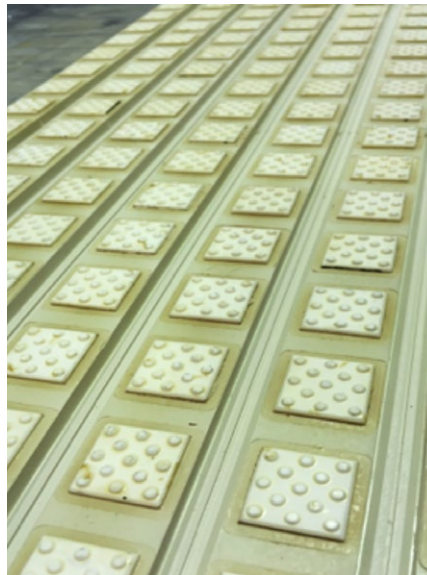
The Elastotec Cold Vulcanised (CV) bonding system provides a number of advantages over conventional adhesives used within the conveyor maintenance industry. These include:

- Metal primer, Cold Vulcanised Adhesive (CVA) and CN bonding layer components all include matched adhesion promoters to maximise bond strength
- Adhesive is coloured light blue to ensure uniform coverage on the surfaces to be bonded. The light colour makes it easy to see where the adhesive is thin as the grey metal primer and black lagging surface are easily visible. A uniform layer of adhesive on both surfaces being bonded is essential to achieve consistent high-strength bonds. This rarely happens when grey or black adhesives are used and is a significant factor in the inconsistent results seen with CV bonding systems that use dark coloured adhesives
- Detailed application procedure that includes specified adhesive drying times to ensure consistent and optimum bond strength.

The lagging team at Global Product Supply (GPS) have been trained by Elastotec in the Elastotec CVA Application Procedure. Glenn Singh Managing Director of GPS fully supports the Elastotec focus on providing longer service life. With more than 30 years of conveyor experience he sees this as essential in helping his customers obtain reliable conveyor performance.



White ceramic lagging with white conveyor belt



White FDA ceramic lagging



White CN bonding layer

For additional information on the application of white FDA approved CV lagging please contact:

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