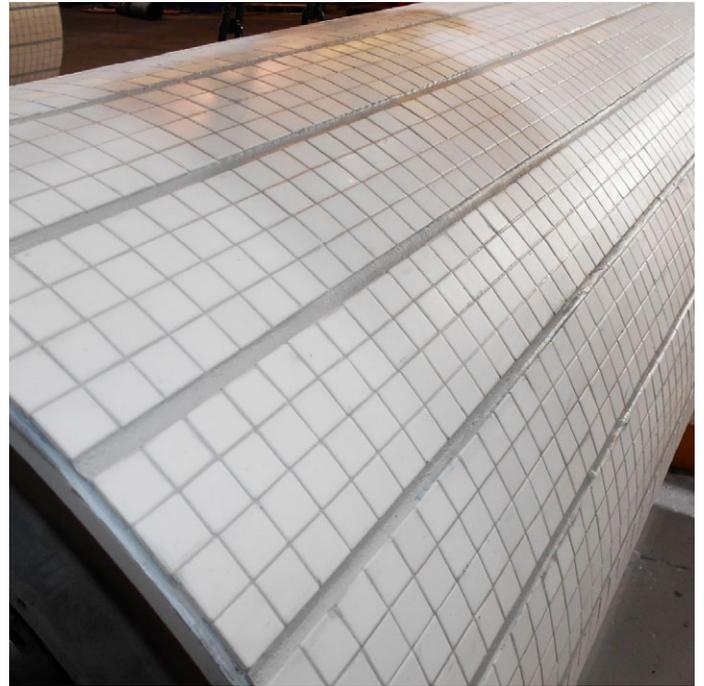


ELASTOTEC DIRECT BOND CERAMIC LAGGING (DBCL)



In an industry where reliability is crucial and unplanned down time can result in millions of dollars lost in a single day our focus is on manufacturing pulley lagging that provides the “Longest Possible Service Life” ensuring that conveyors are operational when required.

Key Features

- Australian developed product
- Australian made product
- Australian owned company
- Innovative application method
- Reduced application time
- Reduced application cost
- Reduced lead time

Our goal is to provide mining companies with:

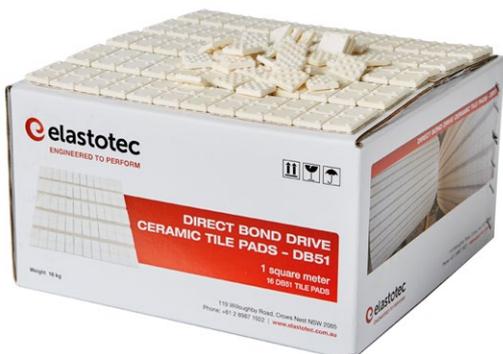
- ✓ Maximum production output
- ✓ Lowest possible operating cost and
- ✓ Lowest possible OH&S risk

Elastotec DBCL is designed for use on drive and non-drive conveyor pulleys. This lagging provides a maintenance free wear resistant surface that will provide increased traction for drive pulleys and a smooth low friction surface for bend and tail pulleys.

Technical Advantages

1.) Tiles

- High performance 95% Aluminium Oxide ceramic for increased abrasion and crack resistance to provide **longer service life** than the 92% Aluminium oxide tiles used by other suppliers.
- Tiles designed with 1 mm dimples on back surface to ensure consistent tile position and low Total Indicator Runout (TIR) – see photo below. Also ensures consistent thickness of adhesive layer.
- Tiles supplied in pads with clear backing tape to ensure accurate positioning.



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2.) Adhesive System

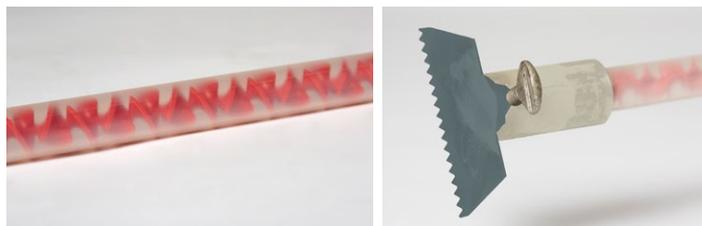
- High strength bonding system to provide adhesion of the ceramic tiles to the pulley shell >20 MPa



- Metal primer for application to the steel pulley shell immediately after sandblasting to prevent oxidation and ensure consistent adhesion.
- Automated mixing/dispensing system for the two part epoxy adhesive to ensure consistency and control – removes chance of operator error.



DBCL Pneumatic Adhesive Gun with Mixing Nozzle and Notched Spreader Head



DBCL Mixing Nozzle

DBCL Notched Spreader

3.) DBCL Application Process

- Elastotec developed an application procedure to ensure maximum service life.



- Elastotec trained operators with Checklist/Record for each pulley.

Aluminium oxide tiles are bonded directly to the pulley shell using a high strength epoxy adhesive. For drive pulley applications tiles with dimples are used and for non-drive pulleys plain/smooth tiles are used.

Elastotec Al₂O₃ Tiles

The Elastotec ceramic tiles are based on a high performance 96% aluminium oxide that is dry injection pressed and sintered under tightly controlled conditions. This produces a small particle size ceramic with outstanding physical properties, abrasion and flex crack resistance.

Typical properties of the Elastotec 96% Al₂O₃ are:

Flex Strength (MPa)	>300
Impact Resistance (MPa*m ^{1/2})	>4.5
Average Particle Size Distribution (um)	< 6.0
Vickers Hardness (Hv5)	>950

Application

As a specialist pulley lagging manufacturer Elastotec has developed the DBCL and the method of application. The method of application has been designed to ensure consistent and reliable results under a variety of application conditions.

In addition a network of approved applicators has been trained to use the Elastotec DBCL application method. This ensures that only trained operators using OEM materials apply the Elastotec DBCL. The result:

- Consistent application to OEM specifications
- Reliable result
- Long life trouble free lagging performance

Important Note

For drive pulleys with Elastotec Direct Bond Ceramic Lagging consideration must be given to ensuring the conveyor design does not create slippage between the conveyor belt and the Direct Bond Ceramic Lagging as this can cause belt cover wear. This is most likely on medium and high tension belting applications. Elastotec can assist conveyor users with computer modelling using the “Lagging Analyst” software to determine if slippage is likely to occur for specific conveyor pulley applications. Please contact our office for more detail on this.

ELASTOTEC DIRECT BOND CERAMIC LAGGING (DBCL)

Direct Bond Ceramic Lagging Adhesion System

DBC (Direct Bond Ceramic) Primer

To eliminate the risk of variable adhesion due to pulley shell corrosion after sand blasting Elastotec has developed a primer system that when applied immediately after the sandblasting of the pulley shell seals the pulley surface and prevents surface corrosion. Photo#1 shows surface corrosion on a pulley shell after only 16 hours from the time the shell was sand blasted.

The primer has no adverse effect on adhesion values of the tiles and the steel shell but it does provide a minimum of 4 weeks protection from corrosion for the shell (see Table #1).

Table #1

ADHESIVE TYPE	Metal Primer (%)	Adhesion (Mpa)
Multotec	NIL	19.35
Elastotec DBA Drive	NIL	21.44
Elastotec DBA Drive	Elastotec Metal Primer 2207	21.12



PHOTO #1

DBA (Direct Bond Adhesive) Drive Adhesive

The Elastotec DBA adhesive has been formulated to combine excellent adhesion to the steel pulley shell and the aluminium oxide tiles with robust processing characteristics. This adhesive has proven performance for out door service exposed to UV, water, dust, dirt etc.

The adhesive has good properties at both low and elevated temperatures and can operate in pulley lagging applications from -20 C to +70 C.

Bond strengths as tested (ASTM D4541)

- Adhesion to sand blasted mild steel >20.0 MPa
- Adhesion to Aluminium Oxide ceramic >20.0 MPa

