

LAGGING PERFORMANCE SPECIFICATIONS

DIRECT BOND CERAMIC LAGGING

Direct Bond Ceramic Lagging is the application of aluminium oxide tiles directly to the pulley shell using a two part engineering (epoxy) adhesive. The resulting lagging provides high levels of adhesion to both the ceramic tiles and the steel shell that results in a durable long lasting lagging.

As the tiles are bonded rigidly to the shell the risk of slippage between the ceramic tiles and the conveyor belt bottom cover is increased – as a result the risk of bottom belt cover wear also increases and should be checked using “Lagging Analyst” software to determine the extent of this risk.

Additionally the pulley shell must be designed to have less than 0.1 mm deflection at the pulley centre under maximum load to eliminate the chance of the tiles debonding and “popping off”.

CERAMIC PROPERTIES

Material	Aluminium oxide >92%	
Vickers Hardness	> 900	ASTM E384
Fracture Toughness	> 4.5 MPa*m ^{1/2}	Indentation method
Dry Wheel Abrasion 65 (Silicone Carbide 60 grit)	< 1.0 % weight loss	ASTM G65
Microscopic Particle Size Average	< 4 um	
Microscopic Particle Size Range	1-6 um	

ADHESIVE PROPERTIES

Material	Engineering grade epoxy adhesive %	
Adhesion to Steel @ 25 C	>15 MPa & 100% Epoxy Tear	ASTM D429 Method F
Adhesion to Steel @ - 40 C	>15 MPa & 100% Epoxy Tear	or equivalent
Adhesion to Steel @ +50 C	>15 MPa & 100% Epoxy Tear	ASTM D429 Method F
Adhesion to Ceramic @ 25 C (After outdoor ageing 12 months)	>15 MPa & 100% Epoxy Tear	ASTM D429 Method F
Adhesion to Ceramic @ - 40 C	>15 MPa & 100% Epoxy Tear	or equivalent
Adhesion to Ceramic @ +50 C	>15 MPa & 100% Epoxy Tear	ASTM D429 Method F
Adhesion to Ceramic @ 25 C (After outdoor ageing 12 months)	>15 MPa & 100% Rubber Tear	ASTM D429 Method F or equivalent