



CERAMOX

A division of  
Wonderstone Limited

# ADVANCED CERAMIC TECHNOLOGY

## ... OUT OF AFRICA

### TECHNICAL PRODUCT APPLICATIONS

#### Advanced Bonding Technology

Aero-Tech is an advanced bonding technology that combines speciality structural adhesives, wear resistant materials and controlled processing. Applications requiring high reliability, impact resistance, and wear protection are ideal candidates for Aero-Tech bonding solutions. Valuable features of Aero-Tech bonded materials: Include:

- Increased effective impact resistance of Ceramox fine grain ceramic tiles.
- Unparalleled performance in dynamic applications.
- Tested high shear strength.
- Proven performance in light weight designs.
- Economical repair of worn components.

#### Components Designed For Your Environment

Most Aero-tech applications are custom designed, based on operating environments and load conditions. Flat, concave, and convex surfaces are not a problem.

Our engineers use computer aided design to match the shape of the ceramic lining with the surface contour. Typical Aero-Tech applications include pulverizer liners, fan blades, spiders, hub protectors, electrostatic precipitator dust valves, impact plates, slurry pump liners, and pipe elbows.

## Aero-Tech Wear & Impact Resistant Liners



#### Lighter, Faster, Easier

Aero-Tech designs decrease the overall weight of systems because our exclusive process enables us to reduce the thickness of steel by replacing a portion of the thickness with alumina, which is fifty percent lighter. With light-weight Aero-Tech liners, installation is easier and faster. When used on rotating components, Aero-Tech bonding allows ceramic-faced blades to flex and bend.

#### Aero-Tech Specifications

Bonding Service Temperature	90°C - Dynamic 120°C - Static
Average Lap Shear Strength	36 MPa at 21°C 23 MPa at 80°C 11 MPa at 120°C
Average Bond Strength:	38 MPa at 21°C
Tensile Shear (MPa):	-55°C.....46.7 24°C.....47.2 82°C.....46.7 120°C.....5.6
Blister Detection (MPa)	-55°C.....36.5 24°C.....34.8 82°C.....28.4 120°C.....8.6
Climbing Drum Metal-to-Metal Peel (Nm/m)	-55°C.....36.5 24°C.....650 82°C.....690 120°C.....310
Floting Roller Peel (KN/m)	-55°C.....9.1 24°C.....13.8 82°C.....20 120°C.....10.4



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### Aero-Tech WEAR & IMPACT RESISTANT LINERS

#### We Sell Solutions

Analysing a wear problem is a complex process. Our design engineers understand wear problems and specify solutions to suit your operational environment. Material properties, engineering tolerances, attachment methods, and material costs are all considered in a Ceramox wear solution.

#### Applications

- Chutes/Hoppers
- Classifier Cones
- Cyclone Separators
- Elbows
- Fan Housing & Blades
- Lined Piping
- Nozzles
- Wear Panels

#### Markets

- Coal-fired Power Generation
- Abrasive Material Handling
- Chemical Processing
- Food Processing
- Iron/Steel Manufacturing
- Mineral Processing
- Powder/Bulk Solids Conveying
- Pulp & Paper Manufacturing
- Pulverising & Grinding



Slurry Pump



Impellor



Screw Conveyor

#### The Aero-Tech Solution

Ceramox is able to offer the unique technology of Aero-Tech bonding, a process that gives our Ceramox alumina optimum fracture toughness and high temperature bond strength, producing components with the wear resistance of ceramic and the impact resistance of steel.

For mill plates, our Aero-Tech process is used to bond Ceramox alumina ceramic tiles to curved steel plates. These curved liners are then bolted or welded into position.



WONDERSTONE

A member of the Assore  
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