

The HMA Greenbank AeroTech ceramic bonding process produces components with the wear resistance of ceramic and the impact resistance of steel. It has proven itself in applications such as high-speed dynamic fan blades in the dust extraction and cement industries. AeroTech allows the ceramic lined item to flex and bend without compromising the integrity of the bond. When alumina ceramic lining is used the weight of the equipment can be reduced as our exclusive process enables us to reduce the thickness of the steel and replace a portion of the thickness with the ceramic, which is 50% lighter.

AeroTech offers two distinct benefits over standard ceramics bonded with epoxy adhesive:-

- 1) More consistent and predictable operating life, and
- 2) Expands the scope of applications where ceramic tiles can be applied.

AeroTech bonded ceramics have proven themselves to be more cost effective than conventional epoxy adhesive branded ceramics in applications where continual maintenance is required and when reliability and predictable maintenance is important.

Combined with HMA Greenbank's engineering and design service, AeroTech provides a major improvement in equipment operating life and reducing maintenance costs.

Advantages AeroTech Bonding Offers:

- Increased impact resistance
- Solutions in dynamic applications
- Lining existing equipment without redesign
- Light weight designs
- Many substrates & materials
- Extremely high reliability in critical processes

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Typical Uses of HMA Greenbank and AeroTech

- Fans & Blowers
- Vibratory Equipment
- Pug Mill Paddles
- Screw Conveyors
- Mixers & Agitators
- Coal Valves
- Coal Feeders
- Wear Panels
- Rotary Airlocks
- Classifier Cones
- Cyclones
- Pipework
- Chutework

PHYSICAL PROPERTIES

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|---|--|---|
| Wear Materials: | High Density Alumina Ceramic Tungsten Carbide Boron Carbide Sintered Silicone Carbide | |
| Base Materials: | Carbon & Stainless Steel Aluminum Fiberglass | |
| Service Temperature: | 200°F/ 93°C – Dynamic 250°F/ 121°C – Static | 150°C Dynamic 175°C Static |
| Average Lap Shear Strength: | 5240 psi at 70°F / 36.12 MPa at 21.1°C 3410 psi at 180°F / 023.53 MPa at 82°C 1620 psi at 250°F / 11.17 MPa at 120°C | 5900 psi at 75°F / 40.7 MPa at 23.9°C 5300 psi at 180°F / 36.6 MPa at 82°C 3730 psi at 250°F / 25.7 Mpa at 120°C 2300 psi at 300°F / 15.8 MPa at 148.9°C |
| Average Bond Strength: (ASTM D 4541-89) | 5540 psi at 70°F / 38.20 MPa at 21.1°C | 6237 psi at 75°F / 43.0 MPa at 23.9°C |
| Service Temp. | GT73-93° Dynamic | GT300-150°C Dynamic |
| Tensile Shear (Psi, MPa): Fed Standard MMM-A132A | -67°F/-55°C....6670/46.7 75°F/24°C....6840/47.2 180°F/82°C....4770/32.9 250°F/120°C....810/5.6 | -67°F/-55°C....5080/35.0 75°F/24°C....5145/35.5 250°F/120°C....3995/27.6 300°F/150°C....2910/20.0 |
| Blister Detection (Psi, MPa): Fed Standard MMM-A132A | -67°F/-55°C....5290/36.5 75°F/24°C....5050/34.8 180°F/82°C....4120/28.4 250°F/120°C....1240/8.6 | Not Tested |
| Climbing Drum Metal-to-Metal Peel (in. lbs/in., Nm/m) ASTM D-1781-76 | -67°F/-55°C....88/390 75°F/24°C....150/650 180°F/82°C....160/690 250°F/120°C....70/310 | Not Tested |
| Floating Roller Peel: (lbs/in., Nm/m) | -67°F/-55°C....52/91 75°F/24°C....79/13.8 180°F/82°C....110/20 250°F/120°C....59/10.4 | -67°F/-55°C....28/4.9 75°F/24°C....29/5.1 300°F/150°C....25/4.4 |

Applications:

Valve Gates
Mixer Housings
Blades Eddy Current Separator Drums
Mill Paddles
Cyclones Pump Volutes
Grain Chutes/Hoppers

Coal Fired Power Applications:

Exhauster Fan Blades
Whizzer Disc & Blades
Spider Arms
Periphery Liners
Bullnoses
Inlet Elbows
Exhauster Housing
Riffle Housing