

Engineered Tiles and Monolithic Cylinders

ISO Pressed Alumina is HMA Wear Solution's most frequently specified wear material.

ISO Pressed Alumina is an extremely dense ceramic material that has remarkable resistance to both sliding and impact abrasion.

ISO Pressed Alumina has exceptional toughness and durability which has made it the recognised standard for long term economic lining in industrial equipment subject to high wear.

ISO Pressed Alumina high purity Alumina crystals are bonded together with a crystalline alumina silicate that ensures the integrity of the ceramic shape after firing.

ISO Pressed Alumina is ideally suited for the most demanding slurry and pneumatic applications.

ADVANTAGES

Pre-engineered and advanced processing techniques enable HMA Wear Solutions to manufacture ISO Pressed Alumina in a variety of geometries from simple to complex shapes. Combined with the appropriate attachment method, Alumina can overcome temperature limitations, impact and abrasion problems in many different environments. Weldable systems permit use of Alumina liners to temperatures in excess of 550°C, and are supplied with tapered hole, metal insert and an Alumina cap.

ISO Pressed Alumina offers three distinct benefits over standard ceramics:

1. Tiles can be pre-engineered to minimise wear points and increase service life
2. Remarkable resistance to sliding and impact abrasion
3. Weldable systems for high heat, impact or corrosion environments

OTHER ADVANTAGES INCLUDE:

- High hardness
- Extended wear life
- High temperature applications
- No dimensional variances during manufacturing



TYPICAL PROCESSES UTILISING ISO ALUMINA

- | | |
|------------------|----------------|
| • Rock | • Glass Cullet |
| • Coal | • Lime |
| • Gravel | • Rice |
| • Minerals | • Sinter |
| • Sand | • Taconite |
| • Cement Clinker | |

APPLICATIONS

ISO Pressed Alumina can be cast and moulded into almost any shape and is well suited for the following applications

- Lining of piping for mineral slurries and pneumatic conveyed materials
- Chute linings under screen
- Cyclone linings
- Scraper conveyors
- Conical sumps
- Blast furnace bunkers
- Coal load out facilities, Ports and rail junctions
- Ash sluice linings

PHYSICAL PROPERTIES - ISO PRESSED ALUMINA

Material Properties	Units	Value
Alumina Content	Weight %	92
Surface Finish: As Fired	mm	1.27
Density	g/cm ³	3.60
Young's Modulus @ 20°C	GPa	277
Shear Modulus @ 20°C	GPa	113
Vickers Hardness @ 20°C	GPa	10.3
Flexural Strength	MPa	310
Weibull Modulus @ 20°C	-	20
Compressive Strength @ 20°C	GPa	2.13
Fracture Toughness @ 20°C	MPa.√m	3.95
Thermal Conductivity @ 20°C	W/(m.K)	20
Coefficient of Thermal Expansion (20-800°C)	10 ⁻⁶ /K	8.36
Critical Temperature Drop ΔT _c	°C	210
Maximum Use Temperature	°C	1250
Water Absorption		None
Gas Permeability		None
Grain Size (Equivalent Diameter)	μm	4.8
Manufacturing tolerance		+/- 1%