



Alumina-Silica Type AX Moldable

General Information

ZIRCAR Ceramics' Alumina-Silica Type AX Moldables are putty-like materials consisting of high-purity refractory ceramic fibers (RCF) dispersed in a sticky, water-based refractory binder. AX Moldables exhibit excellent adhesion and insulation properties and are characterized by their high strength, low shrinkage, and low thermal conductivity up to 1260°C (2300°F).

Type AX Moldable is useful as a hard surface coating on low-density high-temperature materials including insulating firebrick, ceramic fiber board and foams as well as ceramic fiber blankets. It also makes a very effective bonding cement on low-density insulation materials such as ceramic fiber boards or microporous silica materials.

Type AXAL Moldable contains non-wetting agents and is used in the assembly, construction and repair of molten non-ferrous metal transport components.

Non-critical drying of applied material usually results in a hard surface. See application information on page 2.

AX-Moldable has a shelf life of approximately 6 months and should not be allowed to dry out or freeze.



Characteristics & Properties

Nominal Composition, wt.% Solids	55
Dry Density, g/cc (pcf)	0.80 (50)
Maximum Use Temperature*, °C (°F)	1260 (2300)
Color	White
Modulus of Rupture, ** dry, psi	400
Thermal Conductivity, ** Wm°K (BTU-in/ft² hr °F)	
204°C (400°F)	0.082 (0.57)
427°C (800°F)	0.137 (0.95)
649°C (1200°F)	0.185 (1.28)
871°C (1600°F)	0.221 (1.53)
Shrinkage, †% after 24 hrs at 1093°C (2000°F)	4
Loss on Ignition, %	5

The data presented herein is intended to help the user to determine the appropriateness of this material for their application.

This data is a nominal representation of this product's properties and characteristics and therefore should not be used in preparing specifications.

* Maximum use temperature is dependent on variables such as stresses, both thermal and mechanical, and the chemical environment that the material experiences. ** Properties expressed parallel to thickness. † Properties expressed perpendicular to thickness.

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Technical Data Bulletin

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Suggested Applications

Bonding of low-density, porous, high-temperature materials in applications with temperatures to 1260°C (2012°F).
Coating surfaces of low-density boards, blankets and papers for improved hardness, and resistance to abrasion and chemical attack.

Repairing cracks and openings in furnace walls made of fibrous ceramic material and insulating firebrick.

Molding of shapes (rigid tubes, boats, setters, supports, process fixtures, molten non-ferrous metal transport parts etc.)

Availability of Standard AX & AXAL Moldable

ITEM #	DESCRIPTION
D3220	AX MOLDABLE, 1 GAL
D3221	AX MOLDABLE, 5 GAL
D3230	AXAL MOLDABLE, 1 GAL

To Order

Standard moldable: order online or specify quantity, item # and description.

Custom package sizes of AX & AXAL Moldables (55-gallon drums) are also available.

Use Instructions

When applying AX Moldable as a coating or when building linings or monolithic structures, best results are obtained when product is applied in thin layers (up to 1/2in. thick) and at room temperature. This ensures maximum adhesion and accommodates drying shrinkage. Non-porous mold materials should be used when making shapes. Once placed, the material should be allowed to dry prior to applying the next layer. It can be air -dried or dried with an electric heating device or low gas flame. Drying time is dependent upon material thickness and exposed surface area. Material must be thoroughly dried before contact with any molten metal is made.

When using AX Moldable as a bonding cement use a paint mixer mounted in a handheld drill and whip a 4:3 (by weight) mixture of AX Moldable and hot (66°C/150°F) clean water into a creamy consistency. For best results, this "AX Moldable Cement" should be applied using notched trowels and other tools commonly used by the tile and masonry trade. Bonded parts should be allowed to air-dry for 24 hours in a fashion that allows the AX Moldable Cement to collapse and consolidate as it dries. Do not clamp parts as this may result in too much AX Moldable Cement being squeezed out of the seam. Apply hand pressure or moderate weight. Strong, thin dried bond lines can be expected. If desired, bonded parts can be further dried (150°C /302°F) until dry or fired (600°C /1112°F) for 4 hours to remove all water of combination.



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