



Alumina-Silica Cement Type AS-CEM

General Information

ZIRCAR Ceramics' Alumina-Silica Cement Type AS-CEM is a single-part, water-based coating cement with useful properties to 1260°C (2300°F). AS-CEM is a combination of finely-milled ceramic solids and inorganic binders. After applying to porous ceramic fiber bodies or porous refractory surfaces, AS-CEM exhibits good adhesion. Upon drying, it provides high thermal reflectance, dielectric strength, and hot gas erosion resistance. Coating ceramic-fiber-based products with AS-CEM can significantly increase surface hardness and lower particulate generation in numerous applications.

If thickened by evaporation but not allowed to dry out, water can be used to bring the cement to its original consistency. AS-CEM is nonflammable and is not affected by freezing.



Characteristics & Properties

| | |
|---|------------------------|
| Color | White |
| Chemical Composition, wt. % | |
| Al ₂ O ₃ | 37.2 |
| SiO ₂ | 59.1 |
| Na ₂ O | 0.7 |
| MgO | 0.3 |
| Fe ₂ O ₃ | 0.7 |
| TiO ₃ | 1.4 |
| Trace Organics | 0.6 |
| Maximum Use Temperature*, °C (°F) | 1260 (2300) |
| Mean Coefficient of Expansion, (in/in °F) Calcined. | 3.0 x 10 ⁻⁶ |
| Linear Shrinkage, % 24 hrs. at 1260°C (2300°F) | 3.2 |
| Dielectric Strength, (volts/mil) | ~39 |
| Shelf life in unopened original container | 2 years + |
| Shelf life after opened | < 1 year |

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.

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Suggested Applications

Coating surfaces of ceramic-fiber-based boards, blankets and papers for improved hardness, and resistance to abrasion and chemical attack.

Availability of Standard Cement

| ITEM # | DESCRIPTION |
|--------|---------------|
| D3300 | AS-CEM, 1 Qt |
| D3301 | AS-CEM, 1 Gal |

To Order

Standard items: order online or specify quantity, item # and description.
Standard items are available for immediate shipment from stock.

Custom preparations, such as a 5-gallon bucket, are available.

Use Instructions

- 1) Clean surfaces to be joined, making certain they are free of contamination and loose particles.
- 2) Mix contents gently yet thoroughly before using. Stirring with a spatula is usually sufficient. Passing AS-CEM through a screen/filter can help remove large solid particles that may have formed as a result of material drying on container walls above the fluid line during storage.
- 3) Thoroughly coat surfaces with cement. Application of thin layers of material can be achieved by brushing, spraying or dipping. Allow time for each layer to dry before applying more. Reapply the material as required to assure even coating and desired thickness.
- 4) Cure thoroughly before placing parts into service. Uniform curing at a temperature of 204°C (400°F) will result in strong bonds and permanent fixing of the material.



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