

Product Description

Alcast Extra HS is a 1300°C (2370°F) molten aluminium resistant product with high hot strengths. Its chemistry, densely packed structure, and low permeability produce optimum resistance to hot abrasion, mechanical impact, and slag/metal contact.

A proprietary additive particularly inhibits the penetration of molten aluminum and its alloys. All of these factors combine to make Alcast Extra HS an ideal product for aluminum holding or reverb furnaces at or below the melt line.

Instructions for using

Casting: Highest strength is obtained with monolithic refractory by using the least amount of clean mixing water that will allow thorough working of material into place by vibration. A mechanical mixer is required for proper placement (paddle type mortar mixers are best suited). After adding the recommended amount of water, wet mix for 5-6 minutes. Place material within 20 minutes after mixing.

Watertight forms must be used when placing material. All porous surfaces that will come in contact with the material must be waterproofed with a suitable coating or membrane. For maximum strength, cure 24 –48 hours in a damp condition before initial heat-up. Keep freshly placed monolithic warm during cold weather, ideally between 16°C and 27°C (60°F and 80°F) until it has taken a firm set and wet curing is complete. New monolithic installations must be heated slowly the first time.

For detailed installation instructions and commissioning schedules, please contact your Morgan Advanced Materials-Thermal Ceramics representative.

| Properties | Alcast Extra HS | |
|---|----------------------|---------|
| Region of Manufacture | Americas | |
| Bond type | Hydraulic | |
| Raw material base | Bauxite | |
| Method of installation | Cast | |
| Maximum grain size, mm | 7 | |
| Maximum service temperature, °C (°F) | 1300 (2372) | |
| Net material requirement, kg/m ³ (pcf) | 2883 (180) | |
| Water addition, % by weight | | |
| | casting by vibrating | 5.0-5.8 |
| Packaging in bags, kg (lbs) | 25 (55) | |

The product(s) represented are intended for industrial refractory applications. The values and application information in this datasheet are given for guidance only. The values and the information given are subject to normal manufacturing variation and may be subject to change without notice. Morgan Advanced Materials – Thermal Ceramics makes no guarantees and gives no warranties about the suitability of a product, and you should seek advice to confirm the product's suitability for use with Morgan Advanced Materials.

Alcast[®] Extra HS Monolithic

Product Data Sheet



| Properties | Alcast Extra HS |
|---|--------------------------|
| Bulk Density, kg/m³ (pcf), ASTM C134 | |
| fired 5 hours @ 816°C (1500°F) | 2819-2947 (176-184) |
| Cold Crushing Strength, MPa (psi), ASTM C133 | |
| dried 24 hours @ 105°C (220°F) | 65.5-96.6 (9500-14000) |
| fired 5 hours @ 816°C (1500°F) | 69.0-117.2 (10000-17000) |
| fired 5 hours @ maximum service temperature °C (°F) | 82.8-124.1 (12000-18000) |
| Permanent Linear Change, %, ASTM C113 | |
| dried 24 hours @ 105°C (220°F) | 0 to -0.2 |
| fired 5 hours @ 816°C (1500°F) | -0.1 to -0.3 |
| fired 5 hours @ maximum service temperature °C (°F) | -0.2 to -0.6 |
| Chemical Analysis, %, Calcined Basis | |
| Alumina, Al ₂ O ₃ | 77 |
| Silica, SiO ₂ | 12 |
| Ferric Oxide, Fe ₂ O ₃ | 1.1 |
| Titanium Oxide, TiO ₂ | 2.7 |
| Calcium Oxide, CaO | 1.4 |
| Alkali as, K ₂ O+Na ₂ O | 0.5 |
| Thermal Conductivity, W/m•K (BTU•in/hr•ft²•°F), ASTM C417 | |
| 600°C (1112°F) | 2.30 (15.9) |

Storage and Shelf Life

- Monolithics should be stored in a dry, well-ventilated area and held off the ground on pallets ideally with the original packaging intact. Keep out of rain and damp conditions.
- Normal shelf life is 6 months from date of manufacture when properly stored.

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