

Data sheet

ENGLISH

Albond® & Alcast® Extra HS Monolithics

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Description

Alcast Extra HS is a 2400°F (1316°C) 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.

Albond is a high temperature molten aluminium resistant monolithic product with excellent strengths throughout the temperature range.

It is designed to run at high temperatures when holding furnaces are drained and higher temperatures are seen by the areas below the melt line. Its chemistry, densely packed structure, and low permeability produce excellent resistance to severe hot abrasion, mechanical impact and slag/metal contact. A proprietary additive particularly inhibits the penetration of molten aluminum and its alloys.

Features

- Excellent resistance to molten aluminum metal
- Superb resistances to abrasion or mechanical impact
- Excellent thermal shock resistance
- Excellent resistance to corundum formation
- Stronger bond formed when heated
- Porosity rivals that of dense firebrick

Instructions for Use

Highest strength is obtained with castable refractory by using the least amount of clean mixing water that will allow thorough working of material into place by vibrating.

A mechanical mixer is required for proper placement (paddle type mortar mixers are best suited).

After adding the recommended water to the mixer for 6 minutes, place the material within 20 minutes after mixing.

For maximum strength cure 24 hours in a damp condition before initial heat-up. New monolithic installation must be heated slowly the first time.



Data sheet

Albond® & Alcast® Extra HS Monolithics

Monolithic Product Name	Alcast Extra HS	Albond
Material method of installation	vibratory cast	vibratory cast
Physical Properties		
Temperature use limit, °F	2370	2550
Temperature use limit, °C	1299	1399
Placement, average lb to place 1 ft ³	180	174
Placement, average kg to place 1 m ³	82	79
Pounds per bag, lb	50	50
Pounds per bag, kg	23	23
Shelf life, months	6	6
Water, %, recommended		
casting by vibrating	5.0-5.8	5.5-6.5
Density, ASTM C 134, pcf		
fired @ 1500°F	176-184	170-178
Density, ASTM C 134, kg/m ³		
fired @ 816°C	2819-2947	2723-2851
Cold crushing strength, CCS, ASTM C 133, psi		
dried 24 hrs @ 220°F	9500-14000	9000-13000
fired 5 hrs @ 1500°F	10000-17000	9500-14000
fired 5 hrs @ temperature use limit, °F	12000-18000	11000-17000
Cold crushing strength, CCS, ASTM C 133, MPa		
dried 24 hrs @ 104°C	66-97	62-90
fired 5 hrs @ 816°C	69-117	66-97
fired 5 hrs @ temperature use limit, °C	83-124	76-117
Permanent Linear Shrinkage, ASTM C 113, %		
dried 24 hrs @ 220°F (104°C)	0.0 to -0.2	0.0 to -0.2
fired 5 hrs @ 1500°F (816°C)	-0.1 to -0.3	-0.1 to -0.3
fired 5 hrs @ temperature use limit, °F (°C)	-0.2 to -0.6	-0.2 to -0.5
Chemical Analysis, % weight basis after firing		
Alumina, Al ₂ O ₃	77	82
Silica, SiO ₂	12	11
Ferric Oxide, Fe ₂ O ₃	1.1	1.2
Calcium Oxide, CaO	1.4	1.8
Thermal Conductivity, BTU•in/hr•ft², per ASTM C201		
1000°F	15.9	15.9
Thermal Conductivity, W/m•K, per ASTM C201		
538°C	2.4	2.4

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They are supplied as a technical service and are subject to change without notice.

Therefore the data contained herein should not be used for specification purposes.

Check with your Thermal Ceramics office to obtain current information or a Compliance Data Sheet where guaranteed property specifications are required.

Before using these materials, it is strongly recommended that the installer consults Thermal Ceramics manual "storage and installation manual" copies of which are obtainable from Thermal Ceramics offices or distributors.

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