

## General information

ALUMINITE is a refractory cement specifically designed for the production of heatresistant, insulating mortars and concretes. ALUMINITE is made up of calcium aluminates and aluminium rich minerals, both triturated to micron size. When increasing the working temperature, their components are sintered and ceramized, and with that, refractoriness and mechanical resistance are increased. ALUMINITE hardens quickly, which contributes to its rapid demolding and/or application.

## Quality

Like all other Calucem products, the production of ALUMINITE is subject to stringent quality control. Constant monitoring of all components ensures a consistent quality. The production plant is certified according following standards: ISO 9001:2015; ISO 14001:2015 and ISO 50001:2018.

ITEC certifies compliance of this cement with the specifications of the EAD 150002-00-0301, evaluating it in accordance with what is established in ETA 17/0007. Accordingly, it also has the corresponding certificate of CE compliance. This cement do not need an additional reducing agent of Chrome (VI). ITEC also certifies the fulfillment of the regulation limit of the soluble Cr (VI) content according to UNE-EN 196-10.

## Technical data

The following information represents typical values for the quality control carried out in our plant.

### Chemical composition (%) - Standard value

SiO <sub>2</sub>	5.5
Al <sub>2</sub> O <sub>3</sub>	40
Fe <sub>2</sub> O <sub>3</sub> total	18
CaO	32
Cl	0.01
SO <sub>3</sub>	0.1
S <sup>2-</sup>	0.02
Alkalis	0.1

### Mineralogical composition

ALUMINITE contains mainly monocalcium aluminate (CA). This mineral phase is responsible for the high early strength. When mixed with water ALUMINITE forms calcium aluminate hydrates as its hydration products.

### Mineral phases of ALUMINITE

Main mineral phase:	CA
---------------------	----

### Cement technical properties - Standard value

Laser granulometry D(v,0.9):	<90 µm
Fineness (Blaine):	3300 cm <sup>2</sup> /g
Bulk density:	1.2 g/cm <sup>3</sup>
Specific gravity:	3.2 g/cm <sup>3</sup>
Refractoriness in cement approx.:	1295 °C

### Setting time - Standard value

The setting time is determined according to EN 196-3

Initial set	140 min
Final set	150 min

## Development of strength

After setting, strength develops very rapidly. ALUMINITE is a cement with very high early strength and high compressive strength. After one (1) day, the compressive strength is higher than that of high grade Portland cements CEM I 52.5 R after 28 days.

### Development of strength [MPa] - Standard value

Time	6 h	1 d
Compressive strength	45	65

### SHIPPING AND STORAGE

- Available in big bags and in bags of 25 kg.
- The bags must be stored in ventilated, dry conditions, protected from air and ground moisture.

### RECOMMENDED FOR MORTARS AND CONCRETES:

Heat-resistant, insulating mortars and concrete, including those resistant to thermal shock (with appropriate aggregates). Fields of use include:

- Iron and steel industry.
- Ceramics.
- Petrochemical industry.
- Incinerators.
- Aluminium industry.
- Chimneys and barbecues.

### NOT RECOMMENDED FOR:

- Non-refractory, non-insulating applications.
- Structural uses.

### PRECAUTIONS FOR USE:

- Given the high reactivity of this cement, it is very important to exercise extreme care in the curing process, especially in hot, dry and windy atmospheres. Intensive curing is recommended three hours after application and over the following 24 hours.
- The first temperature ramp rate should be gradual and appropriate in order to avoid fissures caused by the violent discharge of free and combined water. A ramp rate of 50°C per hour from room temperature up to 600°C is recommended and should be maintained for two hours. Finally, the temperature can be raised to the required level. Once the Aluminite is fired, subsequent temperature ramp rates are unaffected.

#### SALES OFFICE EUROPE

CN- 340 n° 2 al 38 Km 1242,3  
Sant Vicenç dels Horts  
Barcelona, 08620  
Tel. +34 93 680 60 00

Contact worldwide: [info@calucem.com](mailto:info@calucem.com)

#### SALES OFFICE NORTH AMERICA

6081 Hamilton Blvd, Ste 600  
Allentown, PA 18106  
USA  
Tel. +1-484-223-2950

#### SALES OFFICE ASIA

12 Marina Boulevard, #17-01  
Marina Bay Financial Centre Tower 3  
Singapore 018982  
Tel. +65-86-855-582