

Refractory applications

Ciment Fondu® Lafarge

Applications

- CIMENT FONDU® LAFARGE is a hydraulic binder with an alumina content of approximately 40%.
- Composed mainly of the calcium aluminate phase, CIMENT FONDU® LAFARGE is ideally suited for refractory applications.
- CIMENT FONDU® LAFARGE also contains secondary mineralogical phases containing combinations of CaO, Al₂O₃, iron oxide and SiO₂.
- The high proportion of mono calcium aluminate (CaO•Al₂O₃) in CIMENT FONDU® LAFARGE imparts excellent mechanical strength to refractory mortars and concretes. Despite the approximately 16% iron oxide content of CIMENT FONDU® LAFARGE, it is suitable for refractory applications where iron oxide can be tolerated. However, its use cannot be recommended for reducing atmospheres. The rheological properties of CIMENT FONDU® LAFARGE are well adapted to all types of placing methods, particularly for casting and gunning.
- It is recommended for applications requiring rapid hardening properties, resistance to abrasion and mechanical shock, and exposure to intermediate temperatures.

General characteristics

1 Mineralogical composition

C = CaO A = Al₂O₃ S = SiO₂ F = Fe₂O₃

- Principal mineralogical phase:
Monocalcium aluminate CA
- Secondary phases:
C₁₂A₇, C₂S, Ferrites, C₄AF

2 Chemical composition

| Main constituents (%) | | | |
|--------------------------------|--------|------------------|--|
| Al ₂ O ₃ | CaO | SiO ₂ | Fe ₂ O ₃ |
| ≥ 37.0 | ≤ 39.8 | ≤ 6.0 | ≤ 18.5 |
| Minor constituents (%) | | | |
| TiO ₂ | MgO | SO ₃ | K ₂ O+Na ₂ O soluble |
| < 4.0 | < 1.5 | < 0.4 | < 0.4 |

3 Physical properties

- Pyrometric cone equivalent (on neat cement paste):
8-9 or approx. 1270°C (2320°F)
- Bulk density: 1.16 – 1.37 g/cm³ (72.4 – 85.5 lb/ft³)
- Specific gravity: approx. 3.24
- Fineness: 3600-4400 cm²/g (ASTM C204)
- Residue at 90 microns: < 8% maximum

4 Sand mortar properties (EN-196)

- Flow at 15 min: ≥ 30% (ASTM C1437)
- Vicat set: 120 – 240 min.
- Compressive strength (ASTM C349)
6 hr ≥ 2900 psi (20.0 MPa)
24 hr ≥ 4900 psi (33.8 MPa)

Packaging

CIMENT FONDU® LAFARGE does not contain any additives. CIMENT FONDU® LAFARGE packaging is designed to protect it from humidity. However, it is recommended that CIMENT FONDU® LAFARGE not be placed in direct contact with the ground. When correctly stored, the shelf life of CIMENT FONDU® LAFARGE is at least 6 months. In most cases, its properties are retained for over a year.

The above listed properties typically represent the product manufactured by LCA. For warranty information and current product specifications per our ISO 9001 manufacturing environment, please contact an LCA technical manager for a copy of the current *Specification Sheet*.



LAFARGE CALCIUM ALUMINTES, INC.
1316 Priority Lane, Chesapeake, VA 23324
Phone: (757) 284-3200 FAX: (757) 284-3300

