



## ALUMINATES

Calcium aluminates are rapid setting, corrosion-, abrasion- and heat resistant.

Calcium aluminates, “alumina cements” or “high alumina cements” are obtained by the reaction at high temperature of lime (from limestone) and alumina (contained in natural minerals like bauxite). The product obtained after cooling is a hard mineral: calcium aluminate clinker.

Crushed or screened, it is used as an aggregate. The composition and colour - ranging from the purest white to jet black - depends on the proportion of each raw material.

Ground into a fine powder, the clinker becomes calcium aluminate cement (CAC) which forms a paste when mixed with water. This has the ability to harden very quickly: it forms a rigid solid within 24 hours.

There are two distinct ways to use calcium aluminates: as high-performance binders and as mineral reagents in a variety of industries.

As binders, calcium aluminates are used in concretes and mortars for specialised applications for their properties of resistance to corrosion, abrasion and heat combined with rapid hardening and the ease of controlling grading variations.

Calcium aluminate cements are also used in combination with other fine components. Hydraulic binders with new properties are then obtained. In this way, aluminates act as both a complex hydraulic binder and a mineral reagent interacting with the other components in the mix.

As reagents, calcium aluminates are found in non-hydraulic systems. This is the case in metallurgical treatments (iron and steel industry, foundry) where specific grades of calcium aluminate are used for their low-temperature melting properties and for trapping molten metal impurities.

## CIMENT FONDU®

CIMENT FONDU is a calcium aluminate-based hydraulic binder, in contrast to Portland cements, which contain calcium silicates.

CIMENT FONDU is used in a wide range of applications:

- as a reagent in formulated products
- as a hydraulic binder base for refractory and specialty concrete
- as an accelerator for Portland cements.

When it is used on its own or as a hydraulic binder base for specialty concretes, CIMENT FONDU can produce a number of specific properties:

- quick setting
- excellent resistance to heat, thermal cycles and abrasion.

When CIMENT FONDU is used in combination with specialty aggregates, such as ALAG® synthetic aggregates, superior performance can be achieved.

Unlike Portland cement, CIMENT FONDU does not release lime during hydration. This property gives it good chemical resistance to acid corrosion and to a large number of aggressive substances.

The flow characteristics of CIMENT FONDU are suited to all types of application processes, in particular casting and spraying.

In refractory applications, CIMENT FONDU is primarily used in concrete insulation. When used in combination with suitable aggregates, it can be used at temperatures of up to 1,250° C.