Product Data Sheet

Reference FC-CMA 72 -RE-GB-KFR-102011

Updated : 30/05/2012

CMA 72

1 Description

CMA 72 is a novel calcium aluminate binder in the system alumina – lime – magnesia. It contains an alumina magnesia spinel phase which is formed simultaneously with the calcium aluminate phases by reaction sintering

It is recommended for use in high purity systems where resistance to corrosion by molten steels and slags is required.

CMA 72 is a pure cement, comprised of calcium aluminate and magnesium aluminate spinel phases.

CMA 72 does not contain any additives. Its use is recommended for high technology refractories such as low cement, ultra low cement, self flow castables and shotcrete products.

2 Specifications

The specification limits are determinated with an Acceptable Quality Level (AQL) of 2.5% as defined in the sampling standard ISO 3951.

The usual range represents typical values of production.

Chemical composition

		Usual range	Specification limit
Al_2O_3	(%)	69-72	> 68
CaO	(%)	7,5-10,5	< 12
MgO	(%)	19-22	> 18
SiO_2	(%)	0,2-0,6	< 1
Fe_2O_3	(%)	-	< 0.5
TiO_2	(%)	-	< 0.4
K_2O+Na_2O	(%)		< 0.5

- Determined according to the standard ISO 29581-2: Cement-Test Methods – Part 2: Chemical analysis by X-Ray fluorescence. cement.

Fineness

	Usual range	Specification
Specific surface area Blaine (cm^2/g)	3700 - 4500	>3500
Residue 90 µm (%)	-	<5

- Determined in accordance with EN 196-6: Methods of testing cements - Determination of fineness.

Workability

The workability of CMA 72 has been determined by measuring the flow properties using the ASTM C230 flow table. The test is carried out using a standard siliceous sand mortar.

	Specification
Flow after 30 min (%)	> 60

- Composition and preparation of the sand mortar is determined by standard EN 196-1: cement 500 g, sand 1350 g, water 210 g (W/C = 0.42).
- Tested after 30 minutes with 25 shocks in ASTM cone mould, d1 (diameter of base) = 100 mm.
  % of flow = d2 (mm) - d1 (mm).

Setting time

	Usual range	Specification limit
Initial set (min)	160 - 400	> 140
Final set (min)	180 - 460	< 500

- Composition and preparation of the sand mortar is determined by standard EN 196-1: cement 500 g, sand 1350 g, water 210 g (W/C = 0.42).
- Setting time measurement according to NF P15-431: Vicat apparatus standard EN 196-3 but using a 1000 g test weight; temperature 20°C; samples immersed in water or cured at > 90% relative humidity.
- Final setting time measured in accordance with NF P 15-330: the Vicat needle no longer penetrates the mortar.

Mechanical strength

Compressive strength (MPa)		
Age	Usual range	Specification
24 h	25 - 65	>10

- Composition of mortar according to EN 14647: 1350g of sand, 500g of calcium aluminate cement, 200g of water
- Test conditions according to EN 196-1: test prisms 40x40x160mm; temperature 20°C ; prisms cured at >90% relative humidity for 24 hours (NF standard), followed by immersion in water.

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3 Additional data

This information is given for guidance only.

Mineralogical composition

• Principal phases*) : MA, CA
*) M = MgO, C=CaO, A=Al_2O_3

4 Storage and Shelf Life

In common with all hydraulic binders, CMA 72 must be stored in dry conditions, off the ground. CMA 72 is a time stable cement and stored correctly it retain its properties for at least 12 months.

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