ROMAN CEMENT / NATURAL CEMENT

PRODUCT SHEET

NFP 15 - 314: 1993
Very quick hydraulic setting
High initial resistance
100% free from additives

Excellent breathability
Faster lime setting time
Compatible with historical materials

BRIEFLY

Roman cement or natural cement is a natural hydraulic binder, produced from a single raw material. It is the result of the low-temperature combustion process of marly limestone, with a regular and very finely ground composition. It is characterized by rapid setting and excellent mechanical strength.
The chemical-mineralogical composition of the Roman Cement is very close to a natural hydraulic lime and therefore makes it absolutely suitable for restoration works of historic buildings and green building. The Roman Cement can therefore be considered a natural hydraulic lime with high mechanical strength.

ORIGIN

Discovered in England at the end of the eighteenth century, it is a material that belongs to the European building tradition. It is a historical material, different from modern artificial cements like Portland.
An exceptional field has been used in the Chartreuse mountains for the production of "natural cement" for 160 years. This limestone massif located north of Grenoble, in France, is part of the subalpine chain. It consists of sedimentary layers formed during the Alpine orogeny.

BURNING

After crushing, stones with a grain size between 0 and 150 mm are mixed with coal. The process takes place in traditional vertical kilns at low temperature (500 ° C and 1200 ° C) and with a wide thermal spectrum. Burning process is similar to that of natural hydraulic limes (NHL), but stones containing a low lime content don't undergo slaking process. This peculiarity distinguishes it from a hydraulic lime.

CERTIFICATION

Conforms to the French standard NF P 15-314.
Since 2007 it has received European Technical Approval (ETA).

USES

For environments in direct contact with water, even marine; waterproofing; fast fixing of elements and anchorage; grouting and bedding mortars; mortars for plasters mixed with lime; injection mortars; restoration of frames or facades sculpture with fresh mortar; screeds.

STORAGE

Store in a dry environment, avoiding extreme temperature conditions.

PACKING

25 kg paper bags. Packing on euro pallets.

CAUTION

Application temperature between 5 ° C and 35 ° C of the support and the air. Before laying, wet particularly absorbent surfaces, but avoid water stagnation. Use only on clean, resistant and compact surfaces, carefully cleaning the walls and eliminating friable and inconsistent parts.

SAFETY INSTRUCTIONS

Irritating to eyes and skin. Do not take internally. Wear suitable gloves and eye/face protection; in case of contact with eyes rinse immediately with water and seek medical advice - keep out of the reach of children.

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CHEMICAL & PHYSICAL DATA

Physical state	Powder
Color	Light hazel
Bulk density	0,7 - 1,0 g/cm^3
Specific weight	2,97 g/cm^3
Fineness (Blaine)	7000 g/cm^2
Toxicity	non-toxic
Hydration heat at 1 hour	120 J/g
Setting beginning time (pure paste)	1,5 min
Expansion at 80 ° C	5 mm
Shrinkage after 28 days (mortar 1: 1 by weight)	700 µm/m
SiO_2	18,4%
SO_3	3%
Loss on ignition	9%
Insoluble residue	3%
Fe_2O_3 / Al_2O_3	2%

TYPICAL COMPRESSIVE STRENGTHS OF ROMAN CEMENT AND LIME PUTTY MIXTURES

MIXTURE SAMPLE (WEIGHT)	STRENGHT AT 28 GG (MPA)	STRENGHT AT 90 GG (MPA)	STRENGHT AT 365 GG (MPA)
Roman Cement 100%	3,47	6,06	11,50
Roman Cement 60% / Lime putty 40%	3,32	5,29	8,80
Roman Cement 35% / Lime putty 65%	2,62	4,11	6,30
Roman Cement 15% / Lime putty 85%	1,74	3,00	3,85

ULTIMO AGGIORNAMENTO 03/09/19