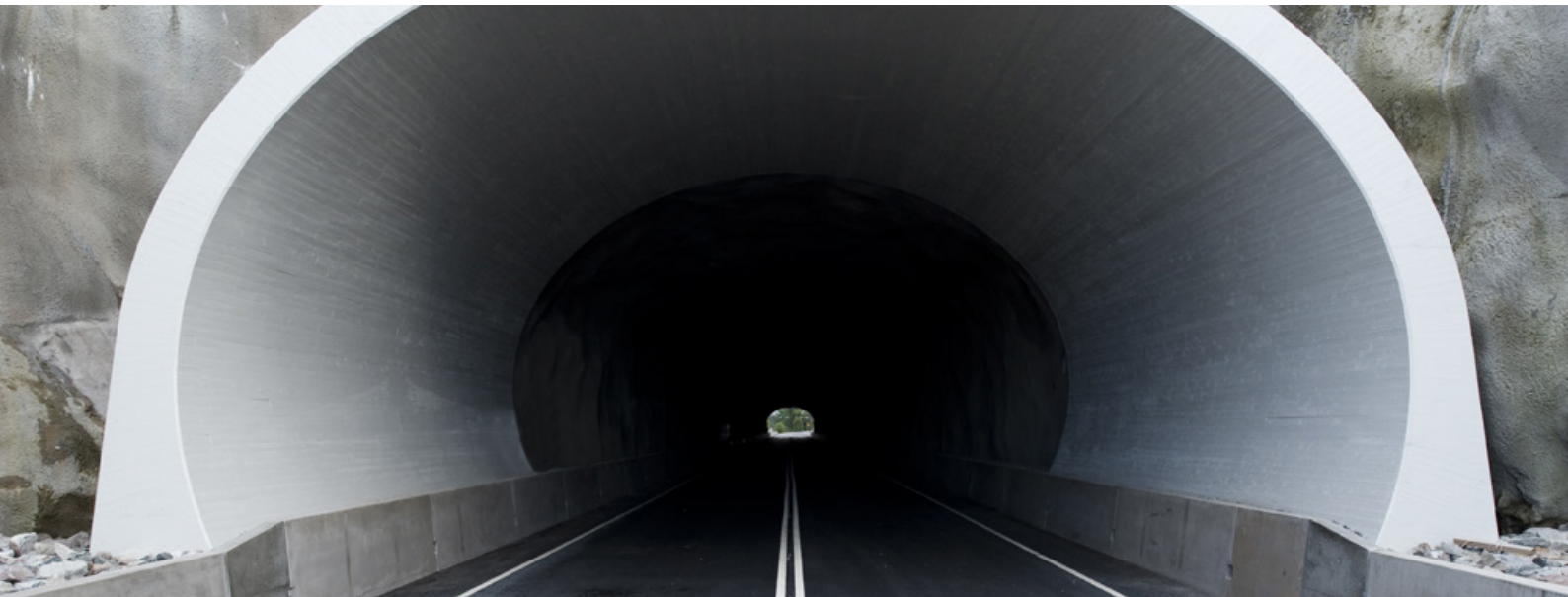


Ultrafin 12

CEM I 52,5 R - SR 3 LA



APPLICATIONS

Ultrafin 12 is a micro cement with excellent penetration characteristics ideal for extremely demanding injections. It has been extremely finely ground to a specific particle size distribution, that makes it ideal to meet the requirements for demanding injection applications. The unique combination of the special grinding process and the specially selected clinker produce a cement with an excellent penetration capacity in rock and soil.

Ultrafin 12 is sulphate resistant, chromate reduced and low alkaline injection cement.

INJECTION CHARACTERISTICS

Ultrafin 12 makes it possible to manufacture injection grout with extremely good flowing properties even at low water content ratios. Test results show excellent stability, flow and filtering characteristics at temperatures of 20 °C and 8 °C.

STANDARDS AND INSPECTION

Ultrafin 12 complies (with the exception of setting time) with the requirements in SS-EN 197-1 part 1: *Composition, Specifications and Conformity Criteria for Common Cements*.

Designation in accordance with SS-EN 197-1 and SS 13 42 03.

QUALITY AND ENVIRONMENTAL MANAGEMENT SYSTEM

Production and sales are covered by Cementa's quality system in accordance with SS-EN ISO 9002. The system indicates quality supervisors, routines for in-house inspection, and documentation routines. The buyer is fully entitled to make sure that the seller implements quality routines in accordance with the system. Cementa is also environmentally certified in accordance with SS-EN ISO 14001 and continuously works for the environmental improvement of products and production. Both systems are certified by DNV, Det Norske Veritas. The certificate for the quality system is; No. 2001-SKM-AQ-1623 and for the environmental management system is No. 2001-SKM-AE-480.

MANUFACTURING

Ultrafin 12 is manufactured at Cementa's plant in Degerhamn using a fine grinding process developed by Cementa. Ultrafin 12 is based on the same clinker as Anlåggningscement. The grinding is done in mills specially developed for Ultrafin cement.

PACKING AND DISTRIBUTION

Ultrafin 12 is supplied in 20 kg sacks, in big bags or in bulk, in order to meet the needs of our customers wide variety of construction applications. The 20 kg sacks are supplied in unit loads of 48 sacks on pallets completely enclosed in plastic. Ultrafin 12 is supplied direct from Cementa's plant in Degerhamn.

STORAGE

Ultrafin 12 is a finely ground product. Its high reactivity makes it more sensitive than normal cement. The reduction of chromate means that it successively loses its effect and should therefore not be stored for longer than six months.

Storage in environments with damp air or direct contact with ground moisture damages the cement very quickly (within days or weeks) and should therefore be avoided.

SETTING TIME AND BET SPECIFIC SURFACE AREA

	Setting time, guideline value (min)	Specific surface area guideline value (m ² /kg)
Ultrafin 12	30	2200

The specific surface area of Ultrafin 12 is determined using the BET method (nitrogen absorption). The product has a very high specific surface area and difficult to determine using the traditional Blaine method.

PARTICLE SIZE DISTRIBUTION

Ultrafin 12 has a particle size distribution where 95 percent of the material is less than 12 µm.

SULPHATE RESISTANCE

Ultrafin 12 has a low C₃A content and satisfies the requirements for sulphate resistance of SR 3 type cement in EN 197-1. Ultrafin 12 normally has tricalcium aluminate (C₃A) content of 2 percent.

ALKALI-SILICA REACTIONS

Ultrafin 12 complies with the requirement for low alkaline content in accordance SS 13 42 03 (≤0.6 percent by weight calculated as equivalent to Na₂O). The cement therefore does not contribute to the concrete

damaging reactions with alkali reactive aggregate. Ultrafin 12 has an alkali content of approx. 0.5 percent.

CHROMATES

Portland cement normally includes small quantities of chrome compounds of both the sparingly soluble and soluble types. The latter are considered to be able to contribute to hypersensitivity to chrome and cause eczema in persons already allergic.

Since 1983, therefore, CEMENTA has produced cement with a reduced chromate content. Nevertheless persons with a developed hypersensitivity to chrome should avoid all contact with cement.

PHYSICAL PROPERTIES

Compact density	approx 3100 - 3200 kg/m ³
Bulk density	approx 800 - 1500 kg/m ³

CHEMICAL PROPERTIES

The chemical composition of the different types of cement manufactured by CEMENTA in Degerhamn is basically the same, but can vary in detail. A type analysis is obtainable upon request.

MgO	max. 5,0 % by weight
SO ₃	max. 3,5 % by weight
Chlorides, calculated as Cl	max. 0,1 % by weight

HEALTH RISKS

Cement should be stored out of reach of children. It is dangerous if consumed. If cement gets into the eyes it can lead to serious eye injuries. Moist cement forms calcium hydroxide which is an irritant to the skin.

For detailed information and safety instructions please see the *Material Safety Data Sheet*.

CEMENTA AB

P.O. Box 47210
SE - 100 74 Stockholm
Tel. +49 (0)8-625 68 00
Fax +49 (0)8-753 36 20
E-mail info@cementa.se
Website www.cementa.se