



Product Information Concretum® D-ZERO / D-ZERO Plus Concrete with Low Shrinkage

Description

Concretum® D-ZERO und D-ZERO Plus are concretes which feature very low shrinkage and very low risk of cracking. They can be used for all concrete structures in which cracking must be controlled.

Unlike D-ZERO, D-ZERO Plus is used for massive structures (smallest dimension greater than 25 cm) with intense heat of hydration.

Both types of concrete are produced in concrete plants.

Applications

- Construction and repair of concrete structures in building and civil engineering with high requirements regarding durability and crack prevention.
- Concrete structures with a reduced number of joints or entirely without joints.
- Manufacturing of precast concrete elements with high requirements regarding crack control or crack prevention.
- Construction and repair of concrete structures which are known to be sensitive to cracking when built with conventional concretes (e.g. shoulder walls and curbs, concrete pavements, inner curbs of roundabouts etc.)
- Waterproof concretes (e.g. groundwater structures).
- Manufacturing of bottom plates, warehouse floors and industrial floors (homogeneous concrete).

Material properties

- Concretum® D-ZERO and D-ZERO Plus are concretes according to EN 206-1 which meet the highest requirements.
- Due to shrinkage reduction and limited heat of hydration, they feature low risk of cracking, high impermeability and high durability.
- Depending on the application, Concretum® D-ZERO and D-ZERO Plus can be reinforced by Concretum® SUPERFIBER. The use of these high modulus polymer fibers (Young's Modulus higher than concrete) allows the replacement of secondary reinforcement and yet an efficient cracking control.
- Depending on the requirements, Concretum® D-ZERO and D-ZERO Plus are available with high resistance against frost and deicing salts.



Norm classification

SN EN 206-1: Concrete - Part 1: Specification, performance, production and conformity:

Class of strength	at least C30/37
Classes of expositions	to XC4, XD3 to XF4 (depending on the application)
Maximum size of aggregate	D _{max} = 8 to 32 mm (depending on the application)
Class of consistence	C2 or C3 (depending on the application)
Class of Chloride concentration	CI 0.20
W/Z-value	max. 0.45 (depending on the application)
Water supply capacity (SIA 262/1 Anh. A)	q _w max. 10 g/m ² h
Chloride resistance (SIA 262/1 Anh. B)	DCI max 10 ⁻¹⁰ m ² /s
Frost and de-icing salt resistance (SIA 262/1 Anh. C)	medium to high (depending on the application)
Cement	CEM I, CEM II A/LL or CEM III/B
Cement concentration	≥300 kg/m ³ (depending on application and production)
Shrinkage coefficient (SIA 262/1 Anh. F)	D-ZERO: ε _{cs} (t=∞) max. 0.2 ‰ D-ZERO Plus: ε _{cs} (t=∞) max. 0.1 ‰

Working information

- Like traditional concrete, Concretum® D-ZERO und D-ZERO Plus is delivered by mixer truck from the ready-mix plant.
- Processing time: approximately 2.0 hours, delay possible.
- No addition of water or additives on the building site!
- Temperature of fresh concrete at the installation: 5 bis 30 °C.
- Underground: clean, compact, raw, wet in advance, dull-wet, no puddles.
- It is necessary to work the surface and begin the curing immediately after the installation. This must be carried out step by step!
- For the compaction apply the same regulations as for the installation of traditional high-quality concretes.
- Striking time: at least 72 hours (in exceptional cases it is possible to take less time - please contact us for further information).
- Curing: The application of a liquid sealing compound (white pigmented) directly after the installation (free surfaces) or directly after the striking (stripped surfaces) is recommended depending on the building material. If the following layers won't allow the application of a sealing compound it is possible to alternatively cover with polythene sheets. Free surfaces have to be additionally covered with termo mats. Wetting is no use.

More curings can be useful depending on the installation situation - You are welcome to contact us for further information!

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