
High strength, high modulus, Nano-engineered Ultra-High Performance Concrete enhanced with Carbon NanoFibers for critical construction, protective structure and marine applications.

Product Description

ce200™ is a two phase, low-shrinkage, Ultra-High Performance Concrete with excellent fresh concrete features and superior final (i.e. 28 days) strength and modulus without shrinkage throughout the curing process. ceEntek's advanced Nano engineered binder and packing optimization produces an UHPC best in class performance, superior rheological properties and extended lifetime.

Application Areas

ce200™ has been developed to meet the most stringent requirements for infrastructure and protective applications with cost of ownership in mind.

- UHPC joints (stitching)
- Protective coatings
- Marine structures
- Building mantles

Please contact us for your specific projects and requirements.

Features and Benefits

- Excellent fresh concrete features
- Self-leveling
- Pumpable
- Compressive strength > 150MPa (28days)
- Outstanding flexural strength > 20MPa (28days)
- High Modulus and excellent fatigue resistance
- No bleeding or segregation

Application Method

ce200™ can be used for pre-cast or in-situ applications. It can be cast in molds or formwork. Installations should be by trained, experienced contractors. ceEntek will ensure this training is provided to qualified parties.

Consumption

ce200™ is a two-phase system delivered in jumbo bags and pails or, for volume applications in silos and tanks. The CNF paste is diluted with a controlled amount of water resulting in a black, ink like mixture. Washing water disposal needs to be through a sedimentation tank.

Description

ce200™ is a Carbon NanoFibers enhanced Ultra-High Performance Concrete optimized for critical construction, protective structure and marine applications.

Features and Benefits

- High early strength
- E-modulus 40-50GPa
- Superior adhesion to steel
- Autogenous shrinkage < 0.01%
- Total porosity < 5% (mercury intrusion method)
- No water carrying capillaries, impermeable, negligible chloride penetration, UV resistant.
- Self-compacting
- Easily pumpable
- Lifetime: 100+ years

Typical Uses

- Protective layer
- Composite construction
- Severe exposure construction
- Joints (stitching)

Advantages

- Chemical Resistant
- Epoxy-Free
- High-Strength
- Durable
- Acid Resistant

Availability

ce200™ is available in three product versions:

- ce200™ for optimum density and long-term strength
- ce200™- Q for standard UHPC applications
- ce200™- Q1 the most economical UHPC system available

Mechanical Properties

PROPERTIES		ce200™	ce200™- Q	ce200™- Q1
Compressive strength ¹ (MPa)	7-day	>120	>120	>120
	28-day	>150	>150	>150
Flexural strength ² (MPa)	7-day	>15	>15	>15
	28-day	>24	>24	>24
Elastic modulus ³ (GPa)		40	40	35
Water absorption ⁴ (%)		1	1	1
Air content ⁵ (%)		<1	<1	<1
Density (kg/m ³)		2450	2350	2350
Flow ⁶ (mm)		280	280	280
Shrinkage (%)		<0.03%	<0.03%	<0.03%

Glossary

- ¹ Compressive strength in accordance to NF P18-470 test in a 100mm cylinder specimen.
- ² Flexural strength in accordance to NF P18-470 test in a 40mm prism specimen
- ³ Elastic modulus in accordance to BS 1881-121:1983 test in a 100mm cylinder specimen.
- ⁴ Water absorption in accordance to BS 1881-122:2011 test in a 75mm cylinder specimen.
- ⁵ Air content in accordance to ASTM C231 test.
- ⁶ Flow in accordance to ASTM C230 test.