



CEM9000

High Performance Non-Shrink Cementitious Grout
For Underwater Applications

PRODUCT DESCRIPTION

CEM9000 is a ready-to-use, durable, non-metallic, flowable, high strength, cementitious and one component non-shrink grout. It is designed for repair and grouting underwater structure with low washability characteristics.

CEM9000 comprises of a balanced blend of washed and graded silica sands, finely crushed Portland cement, flow improvement compounds and an inorganic shrinkage compensation additive, which densifies the grout.

FIELDS OF APPLICATION

CEM9000 can be used in many underwater application fields including:

- Structural columns
- Bearing plates
- Anchor bolts
- Tilt up panels
- Precast columns
- Foundations

PRODUCT FEATURES

- Requires only addition of water.
- Easy to mix and apply.
- High Cohesion characteristics
- Pumpable with adjustable consistency.
- Non-shrink eliminates shrinkage normally encountered in cement systems.
- Provides an early high strength.
- Contains no ferrous metal, and therefore will not stain due to corrosion.
- Resistant to oil and water penetration.
- Low permeability.

PACKAGING

Product	Packaging
CEM9000	50 Lb (22.7 kg) Bag

TECHNICAL DATA

Time of Setting, ASTM C-191 at 77 °F (°25)

Above water	Initial Set time	18 min
	Final Set Time	27 min
Under water	Initial Set time	22 min
	Final Set Time	42 min

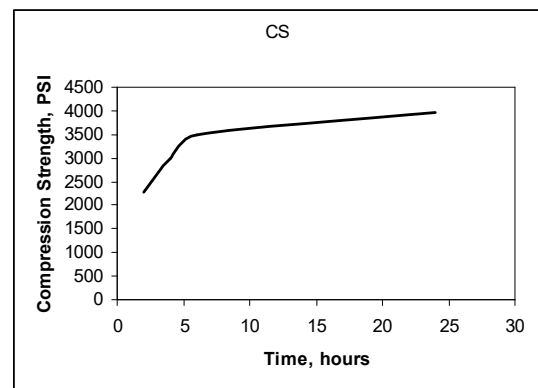
Water Demand: 0.9 gal /50lbbag (3.4 L/22.7 kg bag)

Mixed Density: 18.3 lb/gal (2.2 kg/L)

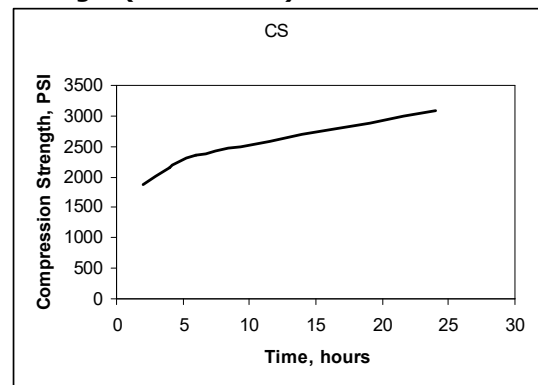
Compression Strength, ASTM C-109 at 77 °F (°25)

Application	Time	Psi	MPa
Above water	24 hours	3970	27
	7 days	6300	43
	28 days	8080	55
Under water	24 hours	3080	21
	7 days	3800	26
	28 days	6170	42

Initial Strength (Above water)



Initial Strength (Under water)



Gravel: grouting 3 inches cavities or more, add up to 50% by weight washed clean pea gravel of size 8-10 mm to CEM9000. Water mixing ratio remains the same.

APPLICATION DATA

Surface Preparation:

Concrete Surfaces: the concrete must be clean sound and free from oil, grease, laitance dirt and loosely adhering particles. The surface should be scabbled to remove the laitance and expose aggregate. Bolt pockets, gaps, etc. must be blown with oil free, clean compressed air to remove any dirt and debris.

Steel Surfaces: the base plates, machinery bolts, etc. must be clean and free from oil, grease and rusting. Degreasing shall be carried out thoroughly, in case of any contamination.

Formwork: before placing formwork, ensure the equipment is set and aligned. If any levelling shims are to be removed upon initial setting of grout, apply a thin layer of releasing agent such as grease for easy removal. Ensure the formwork is secure and firm as per the formwork design, maintaining the gap between formwork and the base plate. The gap should be wider on the pouring side than the opposite side. Slant forms at a 45° angle on placing side 6mm or more from bed plate base.

Mixing: CEM9000 is cement based. Do not exceed limitations set by ACI in mixing or placement of concrete. CEM9000 must be mixed mechanically, using a slow speed electric drill fitted with mixing paddle. Larger quantities may require conventional power mixers.

Measure the required quantity of clean water. Pour approx. 2/3 of the measured quantity of water into the container/mixer then add CEM9000 slowly while mixing. Add the remaining water and mix until a smooth, uniform homogenous consistency is achieved. Mix batch for a minimum of 5 minute and place immediately. Do not attempt to re-temper with the mixed CEM9000 by the later addition of water.

Placing: foundation, bedplate and CEM9000 shall be maintained above 5°C for 24 hour following placement.

To avoid air pocket formation, pour grout from slanted form surface or center entrance point only. Anchor support elements to prevent movements. Use sufficient vent holes to bleed off entrapped air when placing grout. CEM9000 may be pumped to extend movement without bleeding.

Maintain the continuity of grout flow preparing batches of mix CEM9000 grout made readily available. Lengths of chains may also be employed in the formwork prior to placing which enables grout for free flow over large areas and to ensure evacuation of entrapped air.

Use chains, rods, or tamping to compact grout and remove voids, strike off exposed areas.

Cover immediately after placement with wet burlap or polyethylene.

Curing: the surface of the freshly laid grout should be protected from direct sunlight and cured. To prevent rapid water loss, cover with wet Hessian with continuous water sprinkling is essential immediately after placement of the grout.

Large Scale Repairs and Renovations: CEM9000 grout may also be used in large scale repairs that can be shuttered, e.g.: retaining walls, column extensions, large honeycombs, etc.

Caution: measure water accurately to prevent strength reduction. Do not use additives such as retarders, set accelerators, calcium chloride or additional sand. Do not place CEM9000 when temperatures are below or expected to fall below 1-2 °C within 72 hours.

Notice: the information given in this publication is based on present state of our knowledge. Any recommendations and suggestions are made without guarantee since the conditions and procedures are beyond our control.

CLEANING

CEM9000 should be cleaned from tools, equipment, etc. with clean water immediately after use.

STORAGE

CEM9000 has a shelf life of 12 months when stored in cool and dry conditions in unopened bags.

SAFETY

CEM9000 is a non-flammable and non-toxic in nature. Avoid contact with eyes and skin as it may cause irritation due to its alkaline nature. Splashes of CEM900 should be washed off immediately with clean water. Wear necessary gloves and dust mask.

TECHNICAL ASSISTANCE

Please contact International Chem-Crete Corporation for Technical Personnel.

WARRANTY

LIMITED WARRANTY: International Chem-Crete Inc. warrants that, at the time and place we make shipment, our materials will be of good quality and will conform to our published specifications in force on the date of acceptance of the order.

DISCLAIMER: The information contained herein is included for illustrative purposes only and, to the best of our knowledge, is accurate and reliable. International Chem-Crete Inc. is not under any circumstances liable to connection with the use of information. As International Chem-Crete Inc. has no control over the use to which others may put its products, it is recommended that the products be tested to determine the suitability for specific applications and/or our information is valid in particular circumstances. Responsibility remains with the architect or engineer, contractor and owner of the design, application and proper installation of each product. Specifier and user shall determine the suitability of the product for specific application and assume all responsibility in connection therewith. AM22319.

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