



VEXCON
CHEMICALS, INC.

Concrete solutions for architects, engineers and builders since 1974
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CERTI-VEX[®] CE 210

HI- MOD MEDIUM VISCOSITY • ASTM C-881 & AASHTO M235

DESCRIPTION

Certi-Vex CE 210 is a two component, 100% solids, solvent free, moisture tolerant, high modulus medium viscosity structural construction multi purpose epoxy adhesive. Meets ASTM C881 types I, II, IV & V, Grade 2, Classes B&C and AASHTO M-235.

BENEFITS

- High strength
- Moisture tolerant
- Excellent adhesion
- Meets requirements of USDA for food facilities
- 99.9 % reduction of ASTM C881 water absorption
- Medium viscosity, pourable and self leveling

RECOMMENDED FOR

- Bonding fresh and hardened concrete
- Vertical and horizontal structural bonding and patching
- Gravity feed crack repair for medium to large cracks

SURFACE PREPARATION - BONDING

- Substrate must be structurally sound, dust-free, and free of grease, oil, dirt, coatings or any other contaminants prior to application.
- To create the proper bond, develop a profiled textured surface by mechanical means (shot, sand blasting or high powered pressure wash) or chemical etch using **Certi-Vex Etch and Efflorescence Remover & StarSeal Neutralizing Rinse**.
- Check porosity of surface by applying water.
- If water penetrates surface continue with application.
- If the water beads additional profiling is required.
- Clean the surface with **Certi-Vex Super Degreaser & Cleaner** once the desired profile/texture is achieved.
- Air and surface temperature must be minimum 40°F (5°C).
- Exposed steel surfaces should be cleaned to remove contamination with Certi-Vex Super Degreaser & Cleaner and abraded to a bright metal finish using clean dry blasting media.

MIXING

- Condition material to 65 - 75°F (18° - 24° C).
- Pre-mix with a jiffy type mixer at slow speed (less than 400 rpm) to avoid air entrainment resin (part A) and hardener (Part B) for 3 minutes.
- In a clean container combine and mix the pre-mixed part B (hardener) into pre-mixed part A (resin) for 3 minutes @ 400 rpm and scrape sides while mixing. Material should be uniformly blended.
- Do not mix more material than can be used within the stated pot life @ 60-78°F (15-25°C).
- You will have less working time at higher temperatures or more at lower temp.

SPECIFICATIONS/COMPLIANCES

- ASTM D695 - Compressive Strength (yield) @ 40°F
 - 7,035psi @ 7 day
- ASTM D695 - Compressive Strength (yield) @ 75°F
 - 2,396 psi @ 24 hours
 - 7,892 psi @ 48 hours
 - 11,292 psi @ 7 day
- ASTM C109/C579
 - 24hr. cure @ 77°F, by volume, 1 part C778 sand : 1 part epoxy
 - Compressive Yield – 4,894 psi
- ASTM D695 - Compressive Modulus @ 40°F
 - 202,141 psi @ 7 day
- ASTM D695 - Compressive Modulus @ 75°F
 - 191,856 psi @ 48 hour
 - 255,869 psi @ 7 day
- ASTM C882 - Bond Strength
 - 2,301 psi @ 2 days Hardened to Hardened Concrete Failure
 - 2,863 psi @ 14 days Hardened to Hardened Concrete Failure
 - 2,236 psi @ 14 days Fresh to Hardened – Concrete Failure
- ASTM C307 - Tensile Strength
 - 2,287 psi @ 7 day
- ASTM D638 – 7 day cure @ 73°F
 - Tensile Strength - 5,514 psi
 - Tensile Elongation - 3.38% psi
 - Tensile Modules - 100,150 psi
- ASTM D638 – 7 day cure @ 77°F
 - Tensile Strength - 7,107 psi
 - Tensile Modules - 167,660
- ASTM D968 - Abrasion Resistance - >31 liters/mil
- ASTM D4060 - Taber Abrasion - CS-17 Wheel /1000 gr/ 1000 revs
 - 80 mg/avg.
- ASTM D570 - Water Absorption
 - 7 day 0.09%
- ASTM D2566 - Linear Coefficient of Shrinkage
 - 5.0 x 10⁻³ inch
- ASTM D648 - Heat Deflection 125.5°F- 51.9°C
- ASTM D790 - Flexural Strength
 - 10,343 psi @ 7 day
- ASTM C1202 - Chloride Ion Permeability
 - Negligible
- ASTM D3359 – Rating Adhesion by Tape Test
 - @ 7 day – 4A
- NCDOT – 1081 (D) (3)
 - 24hr cure @ 77°F, 3 parts C778 sand : 1 part epoxy
 - Compressive Yield – 6,089 psi
 - Compressive Yield – 6 days water immersion – 9,382 psi
- VOC – 0
- Laboratory results. Field application results can be affected by temperature and application methods.

SHORT SPECIFICATION

Epoxy bonding adhesive/ ASTM C-881, two component epoxy resin, capable of humid curing and bonding to damp surfaces, of class suitable for application temperature and of grade to suit requirements, and types IV and V, load bearing, for bonding hardened or freshly mixed concrete to hardened concrete.

COVERAGE

One gallon of neat Certi-Vex CE 210 bonding adhesive covers approximately:

- 20 MIL 80 sqft/gal - fresh to hard concrete
- 30 MIL 53 sqft/gal - fresh to hard concrete
- 125 MILS (1/8", 3.2mm) = 13 sqft/gal - hard to hard concrete

APPLICATION - BONDING

- **Bond fresh to hardened concrete**
 - Application and surface temperatures should be at least 40°F (10°C) and rising.
 - Review surface preparation and mixing sections above.
 - Apply an even coat of neat Certi-Vex CE 210 by brush, roller, squeegee or trowel working into the existing concrete surface at coverage rates below.
 - Apply fresh concrete when the Certi-Vex CE 210 is tacky. Do not place concrete over dried epoxy.
 - If application of fresh concrete is delayed for 1 day or less, apply an additional coat of Certi-Vex CE 210 over the 1st application. After 1 day Certi-Vex CE 210 will need to be profiled to accept the second application.
- **Bond hardened to hardened concrete**
 - Application and surface temperatures should be at least 40°F (10°C) and rising.
 - Review surface preparation and mixing sections above.
 - Ensure surfaces to be joined have a uniform application of Certi-Vex CE 210.
 - Apply an even coat to both surfaces by brush, roller, squeegee or trowel.
 - For optimum results the bond line should not exceed 1/8" (3.2mm).
 - Join surfaces and hold or clamp firmly until adhesives sets.
 - Ideally a small amount of adhesives should exude from the joint. Surfaces must be mated while the adhesive is still tacky.

STRUCTURAL PATCHING & REPAIR MORTAR

- **Mortar**
 - The mix ratio of aggregate to binder is approximately 1:1 by volume, but may vary depending upon the desired consistency of the mortar and temperature of material.
 - Pour two parts by volume of Part A and one part by volume of part B into a clean, dry container and mechanically mix for 3 to 5 minutes.
 - Scrape the sides and bottom of mixing container while mixing.
 - Do not whip or air entrainment while mixing.
 - Gradually add oven dry 20/40 mesh silica sand to mixed epoxy. Blend thoroughly.
 - One gal (3.8L) of neat Certi-Vex CE 210 epoxy mixed with 1 gal (3.8L) of oven dry 20/40 mesh silica sand will yield approximately 736 in³ (0.012 m³) of mortar.
- **Vertical and Horizontal Repairs**
 - Apply Certi-Vex CE 210 neat as a primer coat to the prepared concrete surface.
 - Mix the Certi-Vex CE 210 into an epoxy mortar as described above.
 - While the primer is still tacky, apply to the area by trowel in lifts of 1" to 1½" (25mm to 38mm).
 - Allow each lift to reach initial set before applying subsequent lifts.

CRACK REPAIR

Gravity feed medium to large size cracks.

- Prepare a v-notched crack and remove all dust and dirt.
- Slowly pour mixed Certi-Vex CE 210 until the crack is completely filled and level.

PHYSICAL PROPERTIES

- Components Resin(A) & Hardener(B)
- Mix ratio - 2:1 by volume*

	% by Wt.	% by Vol.
• Part A	71.45%	66.6%
• Part B	28.55%	33.4%

* Use weight or volume % to break down units
- Color Grey
- Mixed Viscosity 2900-3100 CPS
- Gel Time@ 77°F 37 minutes
- Mix @77°F, Cure @40°F 65 minutes
- Pot life @75°F (500grams) 23 – 26 minutes
- Product can be applied to substrates from 40-55°F (4-12°C)

PACKAGING

3/gallon ,5 /gallon and 15/gallon kits

SPECIAL NOTES

- The NTSB has stated that epoxy adhesive products are approved for short term loads only and should not be used in sustained tensile load adhesive anchoring applications where adhesive failure could result in a public safety risk. Consult a design professional prior to use.
- New concrete must be a minimum of 28 days old.
- Do not thin material.
- Air & substrate temperature will affect working and cure times.
- This data sheet does not supersede engineering recommendations and/or drawings.
- Not intended for submerged or continuously saturated conditions.
- Shelf Life: If properly stored in its original sealed container, one (2) years from date of manufacture. Rotate your stock.
- Storage/Handling: Store in tightly sealed original factory container. Keep from freezing & exposure to moisture. Special care should be taken to keep dirt, water and contaminants away from the openings of containers.
- Proper application of Vexcon material is the responsibility of the installer or user. Telephone consultation and/or field visits by Vexcon personnel are for the sole purpose of making technical recommendations only, and not for providing quality control or supervision on location.
- Warranty: All products are sold subject to Vexcon's published materials Limited Warranty and Terms and Conditions of Sale and can be changed without notice. You may view our Warranty's and Terms and Conditions of Sale at vexcon.com.

HEALTH & SAFETY

Vexcon SDS is an integral part of the safety and application of our product. A short synopsis is provided in this product data sheet. Before using this Vexcon product, it is advisable to obtain a copy of the SDS .

CONTACT US@

Additional product information, technical assistance, and customer services are available by contacting Vexcon Chemicals directly, or our distributors.

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