



TECHNICAL DATA SHEET

FLEXOCRETE®, FLEXOCRETE® GEL Low Modulus, Epoxy Mortar Binder

03930
CONCRETE REHABILITATION
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TAMMS INDUSTRIES
NOVEMBER 2003 (Replaces 3/02)

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1. **DESCRIPTION:** FLEXOCRETE and FLEXOCRETE GEL are two component, 100% solids, low modulus, epoxy resin compounds. FLEXOCRETE is designed for use as an overlay for floors and for epoxy mortar patching of horizontal surfaces. FLEXOCRETE GEL is a non-sag formulation designed for use in epoxy mortar patching and repairs of vertical and overhead concrete.

FEATURES AND BENEFITS

- *Low Modulus*
- *High Elongation and Flexible*
- *Provides Stress Relief*
- *Resistant to Mechanical and Thermal Movements*

APPLICATIONS

- *Warehouses, Loading docks, Bridge Decks, Parking Garages*
- *Repairs to Concrete Floors and Walls*
- *Bridge Nosing Repairs*
- *Non-Structural Crack Injection and Crack Sealing*

3. **COMPLIANCE:** FLEXOCRETE meets ASTM C881 Type III, Grade 1, Class B & C. FLEXOCRETE GEL meets ASTM C881 Type III, Grade 3, Class B & C.

4. **SURFACE PREPARATION:** Concrete must be structurally sound, dry, free of grease, oils, coatings, dust, curing compounds and other contaminants. Surface laitance must be removed. The preferred method of surface preparation is abrasive blasting or shotblasting. For oil contaminated surfaces using steam cleaning in conjunction with a strong emulsifying detergent may be considered. Rinse thoroughly with potable water. After cleaning, remove defective concrete, honeycombs, cavities, joint cracks, voids and other defects by routing to sound material. Smooth, precast and formed concrete surfaces must be cleaned, roughened and made absorptive by abrasive blasting or shotblasting. If it is not possible to sandblast or shotblast, acid etch with a 15% Hydrochloric acid solution. Follow by pressure washing or flushing the surface with copious amounts of water to neutralize the surface. Care must be taken to ensure that all salts and residue from the reaction have been removed. The pH of the surface should be checked, as per ASTM D4262, following acid etching. Following surface preparation, the cleaned surface must have a minimum surface tensile strength of 250 psi when tested with a pull tester or an elcometer (ASTM D4541). Before application of the coating, use the "Visqueen test" (ASTM D4263) to evaluate moisture level in concrete. New concrete should be allowed to cure for a minimum of 28 days before overlaying with FLEXOCRETE. Consult TAMMS Technical Service if earlier times are required. To fill small patches, mix FLEXOCRETE with 3 parts by volume of 20/40 mesh sand. For larger patches, cementitious patching materials may be used. Consult TAMMS Technical Service for appropriate patching materials. Before applying FLEXOCRETE to steel, remove all oils, grease, dirt, old coatings and other chemical contaminants. All welds should be ground to remove splatter, sharp edges, laps and other surface irregularities. Steel surfaces should be blasted to a near white metal finish using clean dry blasting media.

Material Properties at 75°F		
	FLEXOCRETE	FLEXOCRETE GEL
COLOR, Part A & B	Amber	Lt. Gray
Mixing Ratio (A&B) by volume	2:1	2:1
Viscosity: A & B mixed, cps	700-1,000	Gel
Gel Time min. (100 gms sample)	35-45	35-45
Pot Life, 3 gal. unit, mins.	15-20	15-20
ASTM D638, 7 Day		
Tensile Strength, psi	2,500	-----
Tensile Elongation, Pct. min.	30	-----
ASTM D695, 7 Day		
Compressive Strength, psi, min.	5,000	5,000
Compressive Modulus, psi	90-130,000	90-130,000
ASTM C109, 7 Day		
Compressive Strength, psi, min.	6,000	6,000
Parts sand, by volume	3	1
Hardness, Shore D, min (ASTM 2240)	65	65
Water Absorption, 24 hr, % (ASTM D570)	<0.8	<0.8
Thermal Compatibility (ASTM C884)	Passes	Passes
Effective Shrinkage (ASTM C883)	Passes	Passes
Adhesion to concrete ACI Method 503R-30	Concrete Failure	Concrete Failure

Data Presented are typical laboratory values

2. **COMPOSITION AND MATERIALS:** FLEXOCRETE and FLEXOCRETE GEL are two component, moisture insensitive, 100% solids epoxy compounds.

5. **MIXING INSTRUCTIONS:** Premix Part A and Part B. **Binder:** Combine 2 parts by volume of Part A (Base) to 1 part by volume of Part B (Hardener) in a clean container and mix thoroughly with a slow speed motor and "Jiffy" Mixer. Make sure to scrape the sides and bottom of the mixing container. Do not aerate mix. **Mortar:** Gradually add aggregate to the mixed Binder and blend thoroughly.

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Mixing Ratios for Mortar:

Mixed Binder: Aggregate (by volume)

FLEXOCRETE 1:3
 FLEXOCRETE GEL Max. 1:1

Mix ratios may be varied depending upon desired consistency.

6. **APPLICATION TECHNIQUES:** Skid Resistant Overlay: Spread premixed FLEXOCRETE binder over the cleaned surface with a squeegee. Immediately follow with a light roller pass to eliminate puddles and achieve uniformity. Before FLEXOCRETE becomes "tacky," broadcast appropriate aggregate to full saturation until no wet spots appear. Following initial cure, approximately 8 hours at 75°F, remove excess aggregate by brooming or vacuum. Repeat the above application for the second coat. For high traffic areas, a third coat is recommended by repeating the procedure. Recommended aggregate for heavy-duty application is "Basalt" containing at least 10% aluminum oxide as supplied by TAMMS. For light duty application, silica sand aggregate may be used. **Patching and Mortar:** For vertical and overhead applications use FLEXOCRETE GEL. For horizontal applications use FLEXOCRETE. Prime surface with binder (no sand). Before the prime coat becomes tacky apply epoxy mortar with a trowel or screed. For more detailed information on the use of these products consult TAMMS Installation Guidelines, which are available upon request.
7. **COVERAGE:** FLEXOCRETE coverage rates are approximate, and for estimating purposes only. Surface temperature, porosity, and texture will determine actual material requirements.

Overlays: Broadcast Method	1st Coat	2nd Coat	Optional 3rd Coat	Optional Sealer
FLEXOCRETE (sq.ft./gal)	35-40	20-25	20-25	80
Basalt #8 Aggregate (lbs./sq.ft.)	1.2	1.5	1.5	-
Mortar/Patching/Trowel down Primer (sq.ft./gal.)	FLEXOCRETE 200		FLEXOCRETE GEL 50	
Resin/Aggregate (by volume)	1:3		1:1	
Approx. gals. to make 1 cu.ft.	2.7:8.0		4.7:4.7	

8. **CLEAN-UP INSTRUCTIONS:** Clean tools and application equipment immediately after use with methyl ethyl ketone or Xylene. Clean spills or drips while still wet with same solvent. Dried FLEXOCRETE will require mechanical abrasion for removal.
9. **PACKAGING:** FLEXOCRETE: 3 gal. case, and 150 gal. units. FLEXOCRETE GEL: 3 gal. case.
Storage: 50 - 90°F. Protect from moisture.
Shelf Life: 2 years, unopened in protected storage.
Freight Class: Class 60.
10. **CAUTIONS:** Do not mix or apply FLEXOCRETE or FLEXOCRETE GEL below 50°F. Do not aerate FLEXOCRETE materials during mixing. When using aggregate in an overlay application, blotchiness may occur if not mixed or broadcast uniformly into the surface. Remove surface blush, if any appears, prior to subsequent coating applications. For applications at tempera-

tures between 40-50°F, or where quicker cure is needed at higher temperatures, use FLEXOLITH or FLEXOLITH GEL.

11. **ENVIRONMENTAL AND SAFETY PRECAUTIONS: Industrial Use Only.** Component A: Contains epoxy resin. Vapors can cause respiratory irritation. Skin and eye irritant. Can cause sensitization after prolonged or repeated exposure. Use of safety goggles and chemical resistant gloves is recommended. Use only with adequate ventilation. **Component B: Is CORROSIVE.** Contains amines. Contact with eyes and skin may cause severe burns. Can cause sensitization after prolonged or repeated use. Use of safety goggles and chemical resistant gloves is highly recommended. Use only with adequate ventilation. **First Aid:** In case of skin contact, wash immediately and thoroughly with soap and water. For eye contact, flush immediately with plenty of water for at least 15 minutes. Consult physician immediately. For respiratory problems, remove person to fresh air. **Disposal:** Collect with absorbent material. Dispose of in accordance with current local, state and federal regulations. READ MATERIAL SAFETY DATA SHEET BEFORE USING. FOR INDUSTRIAL USE ONLY. **KEEP AWAY FROM CHILDREN AND ANIMALS.** EMERGENCY RESPONSE PHONE NUMBER: (800) 862-2667 TAMMS OR (800) 424-9300 CHEMTREC.
12. **TECHNICAL SERVICE:** For application procedures or surface conditions not specified above, please contact:

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