



TECHNICAL DATA SHEET

FLEXOLITH[®], FLEXOLITH[®] LV, FLEXOLITH[®] GEL Low Modulus, Low Temperature, Epoxy Binder

03920
CONCRETE RESURFACING
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TAMMS INDUSTRIES
NOVEMBER 2003 (Replaces 3/02)

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1. **DESCRIPTION:** FLEXOLITH, FLEXOLITH LV and FLEXOLITH GEL are two component, 100% solids, low modulus, moisture insensitive epoxy binders. FLEXOLITH is designed for use as an epoxy polymer concrete overlay. FLEXOLITH LV is used for epoxy mortar patching of horizontal surfaces. FLEXOLITH GEL is designed for use in epoxy mortar patching and repairs of vertical and overhead concrete.

FEATURES AND BENEFITS

- *Fast Setting*
- *Low Modulus*
- *High Elongation and Flexible*
- *Provides Stress Relief*
- *Resistant to Mechanical and Thermal Movements*
- *Formulated for Low Temperature Applications*

APPLICATIONS

- *Warehouses, Loading Docks, Bridge Decks, Parking Garages*
- *Underlayments*
- *Repairs to Concrete Floors*
- *Bridge Nosing Repairs*
- *Crack Injection and Crack Sealing*

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

3. **COMPLIANCE:** FLEXOLITH meets ASTM C-881-90 Type III, Grade 1, Class A & B. FLEXOLITH GEL meets ASTM C-881-90 Type III, Grade 3, Class A & B. FLEXOLITH LV meets ASTM C-881-90 Type III, Grade 1, Class A & B.

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. Remove oil, grease smear and asphalt residue with trisodium phosphate or a strong detergent. For oil contaminated surfaces, steam cleaning in conjunction with a strong emulsifying detergent may be used. 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 200 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. (Consult Tamms Technical Service if earlier times are required). Remove any surface hardener or curing compounds, by using the recommended mechanical methods for surface preparation. Prepare surface as recommended above.

Old Concrete: If patching is required, ensure that the patching material is compatible. After patching, a light brush blast is recommended prior to coating. (Consult Tamms Technical Service for appropriate patching materials). For small rapid cure patching, use FLEXOLITH with 2.5-3 parts by volume of sand (20/40 mesh) or FLEXOLITH LV with 3-4 parts by volume of sand (20/40 mesh). For larger patching areas, cementitious patching materials may be used.

Steel: All oils greases, dirt, old coatings or chemical contaminants must be removed. All steel surfaces should be blasted to gray metal using clean dry basting media.

MATERIAL PROPERTIES

	FLEXOLITH LV	FLEXOLITH	FLEXOLITH GEL
COLOR, Part A	Clear	Clear	Lt. Gray
Part B	Amber	Amber	Amber
Mixing Ratio by Volume (Part A: Part B)	1:1	1:1	1:1
Mixed Viscosity @ 75°F, cps	500	1700	Gel
Brookfield Viscometer, Model RVT			
Gel Time, min., ASTM C881 Class B @ 50°F	>30	>30	>30
@ 75°F	20	20	20
Tensile Strength, psi, (ASTM D638)	2480	2700	2200
Tensile Elongation % min., ASTM D638	45	45	35
Compressive Strength, yield psi min., ASTM D695	3600	6000	5500
Compressive Modulus psi, max., ASTM D695	130,000	120,000	130,000
Compressive Strength, psi, Mortar (ASTM C109)	5400	7000	6500*
	(3 parts sand)	(2.5 parts sand)	(1 part sand)
Compressive Strength, Mortar			
4 hrs. at 75°F, psi	---	1400	---
Hardness, Shore D, ASTM D2240, minimum	60	65	65
Water Absorption, 24 hr. % ASTM D570	<0.5	<0.5	>0.5
Thermal Compatibility, ASTM C884	Passes	Passes	Passes
Effective Shrinkage, ASTM C883	Passes	Passes	Passes
Adhesion to Concrete, ACI Method 503R -30	Concrete Failure	Concrete Failure	Concrete Failure

Data presented are typical laboratory values.

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5. **MIXING INSTRUCTIONS:** Premix Part A and Part B separately.

- Binder: Combine Part A (Base) and Part B (Hardener), 1:1 by volume in a clean container and mix thoroughly with slow speed motor and "Jiffy" Mixer. Make sure to scrape the sides and bottom of mixing container, as well as blades of the mixer. Do not aerate mix.
- Mortar: Gradually add aggregate to the mixed binder, and mix thoroughly.
- Aggregate Mixing Ratio:
Mixed Binder: Aggregate by volume*
FLEXOLITH: Silica Sand 1:3
FLEXOLITH LV: Silica Sand 1:4
FLEXOLITH GEL: Silica Sand 1:1

* May be slightly varied depending upon desired consistency.

6. **APPLICATION TECHNIQUES:** Condition FLEXOLITH, FLEXOLITH LV and FLEXOLITH GEL at 75°F for at least 24 hours prior to application. **Broadcast:** Apply mixed FLEXOLITH binder to the prepared surface using roller, notched squeegee or spray equipment. Eliminate any puddles with a quick light roller pass. Immediately broadcast clean, dry aggregate to full saturation until no wet spots appear. After the binder has cured, broom or vacuum excess aggregate. Repeat the procedure to build overlay thickness typically to 3/8". For heavy traffic areas or where specific chemical resistance is needed, consult TAMMS for sealer coat recommendations. **Trowel down:** A prime coat of FLEXOLITH should be applied. While still tacky, place the FLEXOLITH mortar and screed or trowel to desired thickness. Do not over trowel and ensure proper termination and edge details. **Aggregate for Skid Resistant Overlay:** Recommended aggregate for heavy duty application is "Basalt", containing at least 10% aluminum oxide as supplied by TAMMS. For light duty application, or where specified, silica sand aggregate may be used. **Patching and Mortar:** Prime surface with premixed binder (no sand). While still wet apply epoxy mortar with a trowel or screed. For vertical and overhead applications use FLEXOLITH GEL, for horizontal applications use FLEXOLITH or FLEXOLITH LV mortar. For more detailed information on the use of these products consult TAMMS Installation Guidelines, which are available upon request.

7. **COVERAGE:** FLEXOLITH 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	Seal Coat
Flexolith (sq. ft./gal)	40-50	20-30	80
Aggregate (lbs./sq. ft.)	1.2-1.5	1.5-2.0	-
Trowel down	Flexolith	Flexolith/ Aggregate	Seal Coat
Prime Coat	200 sq.ft./gal	-	-
Mortar - Silica Sand	-	1:3 by volume	-
Mortar - Tamms 5H	-	1:5 by volume	-
Flexolith	-	-	200 sq.ft./gal
Mortar/Patching	Flexolith	Flexolith LV	Flexolith Gel
Primer	250 sq.ft./gal.	250 sq.ft./gal	50 sq.ft./gal
Resin/Aggr (by Vol.)	1:3	1:4	1:1
Approx. Gals/Cu.Ft.	2.6:8.0	2.2:9.1	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 solvent. Dried FLEXOLITH will require mechanical abrasion for removal.

9. **PACKAGING:** 4 gallon case.

Storage: 40-90°F (4-32°C). FLEXOLITH must not be stored below 40°F. Protect from moisture.

Shelf Life: 2 years in protected storage in unopened containers.

Freight Class: 60.

10. **CAUTIONS:** Do not aerate FLEXOLITH during mixing. When using sand, in an overlay application, blotchiness may occur if not mixed or broadcast uniformly into the surface. If FLEXOLITH is to be exposed to chemicals contact Tamms Technical Service for a suitable top coat. Do not store below 40°F. Condition FLEXOLITH at 75°F for 24 hours prior to use. Remove surface blush, if any, prior to application of subsequent coats.

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 or 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:

TAMMS INDUSTRIES, INC.
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