



EUCLID CHEMICAL

DURAL 50 LM FS

ULTRA-LOW VISCOSITY, LOW MODULUS, FAST SETTING,
CRACK HEALER-SEALER/PRIMER

DESCRIPTION

DURAL 50 LM FS is a two-component, low modulus, 100% solids, fast setting epoxy resin formulation designed to penetrate concrete and seal it from the ingress of chlorides and water. DURAL 50 LM FS heals and seals hairline cracks through its penetration. The DURAL 50 LM FS can also be used as a fast setting primer for Epoxy Polymer Overlay Systems.

PRIMARY APPLICATIONS

- Bridge decks
- Parking decks
- Consolidation of porous and dusting surfaces
- Primer for epoxy toppings
- Pressure injection projects
- Gravity feed hairline cracks
- Re-bonding of delaminated concrete toppings

FEATURES/BENEFITS

- Extremely fast setting
- Safer alternative to methyl methacrylates
- Substantially less shrinkage compared to MMA
- Penetrates cracks by gravity
- Heals and seals concrete
- Increases wear resistance
- Significantly reduces chloride intrusion
- Reduces water absorption
- Easy mixing
- Non-flammable
- Moisture tolerant

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Mixing Ratio (A:B) by volume.....	2:1
Mixed Viscosity, cps.....	100-120
Gel Time (60 gms), 75°F/50°F, mins.....	10/27
Tensile Strength, ASTM D638, psi (MPa), 7 days.....	3,400 (23.6)
Tensile Elongation, ASTM D638, %, 7 days.....	35%
Compressive Strength, ASTM D695, psi (MPa), 7days.....	>4,500 (31.3)

Cure: Tack Timer, 20 mil film thickness	75°F	50°F
Set to Touch	1-1/2 hrs.	4 hrs.
Tack Free	1-3/4 hrs.	5 hrs.
Dry Hard	2 hrs.	5-1/2 hrs.

PACKAGING

DURAL 50 LM FS is packaged in 3 gal (11.3 L), 15 gal (56.8 L) and 150 gal (568 L) units.

SHELF LIFE

2 years in original, unopened containers

COVERAGE

Slab Sealing: 100 to 200 ft²/gal (2.5 to 4.9 m²/L) for the first coat (typical concrete surface). 150 to 300 ft²/gal (3.7 to 7.4 m²/L) for a second coat in cases of extensive cracking or high porosity.

Crack Grouting: Coverage will be determined by depth and length of cracks.

Primer: 100-150 ft²/gal (2.5 to 3.75 m²/L) in one coat.

Note: Coverage rates are approximate. Actual coverage depends on temperature, texture, and substrate porosity.

DIRECTIONS FOR USE

Surface Preparation: The surface must be structurally sound, clean and free of grease, oil, curing compounds, soil, dust and other contaminants. New concrete and masonry must be at least 28 days old. Surface laitance must be removed. Concrete surfaces must be roughened and made absorptive, preferably by mechanical means, and then thoroughly cleaned of all dust and debris. If the surface was prepared by chemical means (acid etching), a water/baking soda or water/ammonia mixture, followed by a clean water rinse, must be used for cleaning, in order to neutralize the substrate. The Concrete Surface Profile (CSP) should be equal to CSP 2-5 in accordance with Guideline 310.2R-2013, published by the International Concrete Repair Institute (ICRI).

Blow debris and residue out of cracks and from the surface with a moisture-free and oil-free air jet. Mask expansion joint sealants to prevent adhesion of DURAL 50 LM FS to the joint surface. Surfaces and cracks must be completely dry before DURAL 50 LM FS application to obtain full penetration.

Following surface preparation, the strength of the surface can be tested if quantitative results are required by project specifications. An elcometer or similar tensile pull tester may be used in accordance with ASTM C1583, and the tensile pull-off strength should be at least 250 psi (1.7 MPa).

After surface preparation, a test section application of the coating system is recommended to confirm good adhesion and compatibility of the coating with the surface, and also to confirm appearance and aesthetics.

Mixing: Due to the fast setting nature of this product, it is suggested that plural component mixing pumps be used to mix and pump the DURAL 50 LM FS. **Hand Mixing:** Mix DURAL 50 LM FS using a low-speed drill and a mixing paddle. Pre-mix Part A and Part B separately for approximately 1 minute each. Combine Part A and Part B in a 2 to 1 ratio by volume, then mix thoroughly for 2 to 3 minutes. Scrape the bottom and sides of the containers at least once during mixing. Do not scrape bottom or sides of the container once mixing operations have ceased; doing so may result in unmixed resin or hardener being applied to the substrate. Unmixed resin or hardener will not cure properly. Do not aerate the material during mixing. To keep aeration to a minimum, the recommended mixing paddles are #P1 or #P2 as found in ICRI Guideline 320.5R-2014.

Application: Healer/Sealer: Pour or pump properly mixed DURAL 50 LM FS onto the properly prepared surface in a wave form, and spread uniformly with a squeegee or a short nap roller to fill voids, cracks, and porous areas. Allow epoxy to penetrate into the surface, re-applying to cracks and porous areas if necessary. Before the epoxy becomes tacky, use a squeegee (on a smooth surface) or a broom (on a textured or tined surface) to remove any excess epoxy that has not penetrated the surface. Broadcast clean, oven-dried silica sand into the wet epoxy to provide a skid-resistant surface. Broadcast the silica sand at an approximate rate of 0.2 to 0.8 lbs/ft² (0.98 to 3.9 kg/m²) and/or until there are no wet spots. Wait 10-20 minutes after DURAL 50 LM FS application before broadcasting aggregate, but broadcasting must be completed before DURAL 50 LM FS has become set to touch. Before opening to traffic, remove any loose aggregate and verify that the skid-resistant properties are adequate for the intended purpose of the substrate.

Primer: Allow resin to penetrate into the surface, re-applying to cracks and porous areas if necessary. Before the DURAL 50 LM FS becomes tacky, use a squeegee (on a smooth surface) or a broom (on a textured or tined surface) to remove any excess epoxy that has not penetrated the surface. Subsequent epoxy toppings should be applied within 3 hours (at 75°F (24°C)) after Dural LM FS has been applied.

Crack Grouting (Gravity Feed): Pour properly mixed DURAL 50 LM FS into "V"-notched cracks until completely filled.

CLEAN-UP

Clean tools and application equipment immediately with acetone, xylene, or MEK. Clean spills or drips with the same solvents while still wet. Hardened DURAL 50 LM FS will require mechanical abrasion for removal.

PRECAUTIONS/LIMITATIONS

- Store DURAL 50 LM FS indoors, protected from moisture, at temperatures between 50°F and 90°F (10°C and 32°C)
- Surface and ambient temperature during coating applications should be between 50°F and 90°F (10°C and 32°C)
- Material temperatures should be at least 50°F (10°C) and rising
- Do not apply DURAL 50 LM FS if surface temperature is within 5°F (3°C) of the dew point in the work area
- Working time and cure time will decrease as the temperature increases, and will increase as the temperature decreases
- Do not thin DURAL 50 LM FS
- Do not apply DURAL 50 LM FS if the substrate or cracks are subject to hydrostatic pressure
- Application of a test area is recommended to confirm final appearance and texture of the system with the end user
- Multiple applications of DURAL 50 LM FS must be done within 12 hours of the preceding application
- DURAL 50 LM FS will darken substrate upon application
- Excess DURAL 50 LM FS left on the surface will reduce skid resistance
- In all cases, consult the product Safety Data Sheet before use

Rev. 11.20

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