



DURAL 335

**ULTRA-LOW VISCOSITY, HIGH MODULUS,
EPOXY CRACK HEALER-SEALER**

COATINGS - TRAFFIC DECK

DURAL 335

MASTER FORMAT #: 03 64 23

DESCRIPTION

DURAL 335 is a solvent-free, two-component, 100% solids, moisture insensitive, ultra-low viscosity epoxy penetrating healer-sealer for damp and dry cracks.

PRIMARY APPLICATIONS

- Bridge decks
- Roadways
- Re-bonding of delaminated concrete toppings
- Airport runways
- Parking garage decks and ramps

FEATURES/BENEFITS

- Penetrating epoxy crack healer-sealer
- Alternative to methyl methacrylates
- Solvent free, no odor
- Ultra-low viscosity
- High strength
- Moisture insensitive
- Protects treated surface from salts, chemicals, and water absorption

TECHNICAL INFORMATION

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

Mixing Ratio (A : B) by volume	4:1
Mixed Viscosity cp	80 to 120
Gel Time (60 gms), mins	70 to 90
Pot life (1.25 gal unit), mins	20 to 25
Tensile Strength, 7 days ASTM D638, psi (MPa)	7,500 to 8,500 (51.7 to 58.6)
Tensile Modulus, 7 days psi (MPa)	300,000 (2,068)
Tensile Elongation, 7 days ASTM D638, %	1 to 5
Compressive Strength, 7 days ASTM D695, psi (MPa)	11,000 to 11,500 (75.8 to 79.3)
Compressive Modulus, 7 days ASTM D695, psi (MPa)	380,000 (2,620)
Compressive Strength, 7 days ASTM C109, psi (MPa) mortar (3 parts sand)	9,500 to 10,500 (65.5 to 72.4)
Slant Shear Bond Strength, ASTM C882, psi (MPa) 2 days	1,450 to 1,600 (10.0 to 11.0)
14 days	2,100 to 2,300 (14.5 to 15.9)
Flexural Strength, 7 days ASTM D790, psi (MPa)	9,000 to 10,500 (62.1 to 72.4)
Water Absorption, 14 days ASTM D570, %	0.10
Water Absorption, 7 days ASTM C413, %	0.19
Heat Deflection Temperature, 7 days ASTM D648	124°F (51°C)
Linear Coefficient of Shrinkage, ASTM D2566, in/in	0.002
Abrasion Resistance, ASTM C779 Abrasion Depth @ 30 minutes, % improvement88.5%
Abrasion Depth @ 45 minutes, % improvement85.7%
Abrasion Depth @ 60 minutes, % improvement83.3%
Chloride Resistance, AASHTO T259 & T260 Chloride Content @ 0.5" (12.7 mm), % improvement90.6%
Chloride Content @ 1.0" (25.4 mm), % improvement99.7%

PACKAGING

DURAL 335 is available in 1.25 gal 2 pack/case (4.73 L) and 5 gal (19.9 L) units.

SHELF LIFE

1 year in original, unopened containers

SPECIFICATIONS/COMPLIANCES

DURAL 335 complies with ASTM C881 Types I and IV, Grade 1, Class C

Canadian MTQ

Canadian Food Inspection Agency compliant

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.

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 335 to the joint surface. Surfaces and cracks must be visibly dry before DURAL 335 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: Mix DURAL 335 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 4 to 1 ratio by volume, then mix thoroughly for 3 to 5 minutes. Scrape the bottom and sides of the containers at least once during mixing, but do not scrape bottom or sides of the container after mixing; doing so may result in application of unmixed Part A or Part B. 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: Slab Sealing: Pour or pump properly mixed DURAL 335 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 (recommended gradation: 16/30 or 20/40 mesh) into the wet epoxy to provide a skid-resistant surface, or where subsequent toppings or coatings will be applied. Broadcast the silica sand at an approximate rate of 0.2 to 0.8 lbs/ycd² (0.11 to 0.43 kg/m²) and/or until there are no wet spots. Wait until at least 20 minutes have elapsed since DURAL 335 application before broadcasting aggregate, but broadcasting must be completed before DURAL 335 has become tack free. Ensure that subsequent coatings or toppings are applied no earlier than 3 to 5 hours (at 75°F (24°C)) after DURAL 335 application, but no later than 24 hours after application. Before opening to traffic, remove any loose aggregate and verify that the skid-resistant properties are adequate for the intended purpose of the substrate.

Crack Grouting (Gravity Feed): Pour properly mixed DURAL 335 into "V"-notched cracks until completely filled.

Crack Grouting (Pressure Injection): Set appropriate injection ports, depending on the system used. Seal the face of the crack and around ports using DURAL 452 GEL or DURAL FAST SET GEL. Inject properly mixed DURAL 335 using automated or manual injection equipment. Maintain slow, steady pressure until the crack is filled with the epoxy. After the DURAL 335 cures, remove the ports from the crack, and remove the epoxy on the face of the crack, if required.

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 335 will require mechanical abrasion for removal.

PRECAUTIONS/LIMITATIONS

- Store DURAL 335 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)
- Temperature of DURAL 335 should be at least 50°F (10°C)
- Do not apply DURAL 335 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 335
- Do not apply DURAL 335 if the substrate or cracks are subject to hydrostatic pressure
- Although DURAL 335 is chemically resistant, surface staining of the coating may occur after contact with some chemicals. Consider the use of a urethane topcoat such as EUCOTHANE for improved stain resistance.
- Application of a test area is recommended to confirm final appearance and texture of the system with the end user
- Do not mix or apply DURAL 335 when rain is expected within 12 hours after application
- Multiple applications of DURAL 335 must be done within 24 hours of the preceding application
- DURAL 335 will darken substrate upon application
- Excess DURAL 335 left on the surface will reduce skid resistance
- In all cases, consult the product Safety Data Sheet before use

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