

BIO-DUR®

563

FOR APPLICATION
ABOVE OR BELOW
WATER



Thin Film Technology, Inc.

PRODUCT DATA SHEET

BIO-DUR® 563 is based on a unique blend of liquid epoxy polymer and aliphatic polyamine curing agents, which is able to displace water from wet surfaces in order to make a permanent bond. The formulation is solvent-free to ensure safety and maximum technical performance. Kevlar™* fibers are incorporated for reinforcement and viscosity management to achieve high application rates -even underwater!

BIO-DUR® 563 provides permanent protection under the most adverse conditions. The formula is uniquely field-friendly and uses advanced low toxicity ingredients in a high build brushable/rollable product. The sister product BIO-DUR® 561 is available if a higher viscosity; "light paste" consistency is required. All colors including White are available and can be shipped "Non-Regulated" by USDOT, IATA and IMO.

* *Kevlar is a trademark of E. I. Dupont de Nemours Co.*

RECOMMENDED USES

ANTICORROSIVE COATING: Splash zone, excellent abrasion resistance above or below water.

REPAIR COMPOUND: Patching, leak sealing etc. above and below water.

FIELD JOINT COMPOUND: Rapid curing, surface tolerant and excellent cathodic disbondment properties.

ENCAPSULATING COATING: Smooth, dense, easily decontaminated coating for steel and concrete.

WASTEWATER: Reinforces, smooths and protects concrete exposed to chemical or municipal waste.

TECHNICAL INFORMATION

VEHICLE TYPE	Epoxy/Aliphatic amines
PIGMENTATION	Color/Inert/fibrous reinforcement
COLORS	Standard White, Black, Gray – other available
FINISH	Slight texture
THINNER	Not normally required
CLEANER	MEK or lacquer thinner
MIXING RATIO	1.0/1.0 v/v
INDUCTION TIME	Not required
POT LIFE	Approx. 20' / 77°F
FLASH POINT	Over 200°F
SOLIDS BY VOLUME	100%
SPREADING RATE/GAL.....	1604 mil/sq.ft./gal, 53.5 sq.ft./gal @ 30 mils
DRY TIME, (Dust free)	4 hours at 77°F
DRY TIME, (Service).....	3 hrs. light, 24 hrs. heavy service at 77°F
APPLICATION METHOD.....	Brush, roller, heated plural airless spray
STORAGE CONDITIONS.....	Normal, Freezing OK
VOC	Essentially zero
DENSITY	Base 9.6 lb/gal; Cure 13.0 lb/gal, Mix 11.3 lb/gal

APPLICATION NOTES

SURFACE PREPARATION: Remove marine biological settlement and corrosion by >5,000 psi water jetting with or without abrasive. Conventional air/abrasive blasting works well at shallow depths however efficiency falls off sharply below, say, 10'. Hand held power tools such as needle guns or grinders can give good results if applied conscientiously in small areas but will be inadequate in large areas. Plan to apply the BIO-DUR®563 within 45 minutes maximum after surface preparation to minimize rerusting or initial settlement of fouling slime, which interferes with initial adhesion.

Application above water requires similar high pressure water blasting or dry abrasive blasting to yield a firm, granular surface free of loose contamination.

MIXING PROCEDURE: BIO-DUR® 563 is supplied in 2 gallon kits of 2x1 containers each of epoxy base and curing agent. These components are formulated in contrasting colors to facilitate complete mixing. Visible streaks of either component seen during the course of mixing indicate "hotspots" of unmixed components. It is imperative to properly mix the components since unmixed "hotspots" of either base or curing agent **will never cure**.

Remove equal quantities of base and curing agent from their cans and place them in a clean plastic or steel container. Mixing is accomplished by stirring with a "Jiffy" type mixer in a geared down, (high torque), 1/2" electric drill. Once mixing begins, there will be about 20 minutes of working time available at 77°F. This time may be extended by keeping the components and mixture cool, rather than leaving it in a hot area.

APPLICATION:

- 1) Using a stiff brush or roller apply mixed components from a tray aiming for a coverage rate of about 50 sq.ft. per gallon.
- 2) Apply by heated plural component airless spray using the following equipment setup:
 - Spray Unit: Graco "King" or similar with heated hoses.
 - Mix ratio: 1/1 by volume
 - Fluid pressure: 2,500 psi
 - Fluid temp: 140°F
 - Filters: Remove all filters
 - Tip size: .031" -.039" orifice

CURING BEFORE SERVICE: BIO-DUR® 563 may be immersed in fresh or salt water immediately after application. It will cure to a hard film within about 8 hours and is suitable for traffic after this time. Allow at least three (3) days at 77°F before subjecting to aggressive chemical service from industrial solvents and similar materials.

TYPICAL PHYSICAL PROPERTIES OF THE CURED FILM:

Compressive strength:	7,380 psi (50.9 N/mm ²)
Tensile Strength:	6,000 psi (est.)
Flexural Strength:	4,550 psi (31.4 M/mm ²)
Abrasion Resistance:	34.0 mg/1,000 cycles (CS17 wheels with 1,000 gram weights)
Tensile Adhesion:	>2,000 psi ("Near White" SA2.5 abrasive blasted dry steel)
“ “	>1,000 psi (>5,000 psi water jetted steel applied/cured underwater)
“ “	>1,000 psi (Power tool cleaned then >2,500 psi water jetted dry steel)

WE URGE YOU TO READ THE MATERIAL SAFETY DATA SHEET (MSDS) BEFORE USING PRODUCT AND TO CALL THIN FILM TECHNOLOGY, INC. AS NECESSARY FOR ADVICE OR INFORMATION BEFORE ANY ACTUAL OR CONTEMPLATED APPLICATION.



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SAFETY: This is a hazardous material if misused. Read and understand the Material Safety Data Sheet (MSDS) before use.

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