#### **Purpose and Scope**

Instructions for the application of Auto-Dex 500. Auto-Dex 500 is a fluid applied elastomeric surfacing designed for waterproofing concrete parking decks and high traffic areas. The material consists of a water based epoxy primer, polyurethane basecoat, polyurethane wearing coat with sand aggregate and polyurethane topcoat. A second polyurethane topcoat with backrolled aggregate is recommended for ramps and other high use areas.

#### Thickness

40 mils (1.02mm) Exclusive of Aggregate
46 mils (1.17mm) Including Aggregate
50 mils (1.26mm) High Use System Exclusive of Aggregate
56 mils (1.42mm) High Use System Including

Aggregate

#### **Colors:**

Gray and Tan

#### Approximate Quantity of Materials Required

#### To Cover ONE HUNDRED SQ. FT (9.3 sq. meters) @ 46 mils

Description	/Packaging	Amount Requ	ired @ 1/4"
AF Bondee	at (5 Gal Bull	x)	0
(Comp A)	5 gal pail		0.048 Unit
(Comp B)	5 gal pail		0.032 Unit
Auto-Dex 5	500 Basecoat/	Topcoat	

(Comp A)	5 gal pail	(18.90 liters)	66 Unit
(Accelerato	r) Pint	(0.47 liters)	66 Unit
20 Mesh Sil	lica Sand		
100 # bag		(45.45 kg)	125 Bag

**NOTE:** These figures are accurate for concrete finished by power trowel or hand steel trowel, and textured with a soft hair broom producing a light texture or "sidewalk" finish.

#### **Equipment Required:**

Brooms, Air Blowers Muriatic Acid (15% Solution) Moisture Meter Power Washer (2500 PSI) 4 Mil Plastic Crack Router or Grinder Caulking Guns Brushes (4") Rollers (9" or 18" 1/2" Nap) **Roller Extension Poles** Spiked Shoes Notched Rubber Squeegees Polyurethane Sealant (Sika Flex 1-A or equal) Air Compressor and Sandpot (Faster Method of Tape (Duct Tape) Broadcasting Sand Aggregate) Hand Truck (Dolly for moving buckets) Mixing Barrel Mixing Blade Drill Motor Extension Cord

#### **Surface Preparation**

A. <u>Concrete:</u> Concrete decks should be cured for a minimum of 28 days or have a minimum 7% moisture content. Concrete should be finished by power or hand trowel followed by a light broom or "sidewalk" finish. Steel decking over which concrete is poured should be perforated or "vented" to allow moisture to escape. Concrete should be visibly dry and pass a 4 hour ASTM D4263 rubber mat test (no condensation) prior to application of the coating system. A moisture meter or Calcium Chloride

Moisture test kit (consult Crossfield) can also be used to gauge moisture content. Moisture vapor emissions should not exceed 3lbs/1000SF/24hr or moisture content should not exceed 7%. Concrete must be clean, dry and free of ridges, sharp projections or other defects. Concrete must be water cured only and structurally sound (3000 PSI compressive strength minimum). Any grease, oil, curing compound, surface hardener, foreign matter or laitance must be removed by shot blasting, sand blasting or grinding of the surface.

- B. <u>Underlayments:</u> Any areas that require additional leveling or sloping should be done with A-81 latex cement or epoxy mortar. Underlayments must be approved by Crossfield Products Corp.
- C. <u>Metal:</u> Flashing should have a bondarized finish and must be adhered down flat and true with no buckling (nail down 4" o.c. with flat headed fasteners or adhere with flash cement as approved by Crossfield Products Corp.) Rust should be mechanically removed where present (around drains) and primed with Metal Seal.
- D. Crack Detail: Cracks over 1/16" should be routed to form a 1/2" x 1/4" joint, which then shall be primed with 500W Primer and filled flush with Dex-O-Tex SC Membrane. After curing (overnight), apply a 30 mil stripe coat of Auto-Dex 500 polyurethane material in 2 coats. Extend this "stripe coat" 2" on either side of all cracks, control joints and cold joints. Ensure that saw cuts or control joints are cut over all "Double-T" or "Span-Crete" joints, and detail as above. (See Crossfield for specific recommendations).
- E. <u>Cove Details at Deck To Wall, Drain and</u> <u>Penetration Details:</u> Prime with 500W Primer and apply a 1/4" x 1/4" minimum polyurethane sealant "cant" at all deck to wall or deck to penetration junctures. Caulk around all drain flanges where metal meets concrete. Ensure that all drains or penetrations are rigid, use epoxy mortar to grout solid before detailing. Apply detail coat of Auto-Dex 500 into fiberglass reinforcement to bridge across the transition.

#### **Job Site Survey**

- A. Perform moisture testing in accordance with one of the following methods:
  - ASTM F1869 Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride. Verify and document the results in accordance with the specification. If MVER

exceeds 3 lbs./24 hrs./1000 sq. ft. and is under 10 lbs./24 hrs./1000 sq. ft., apply Dex-O-Tex VaporControl Primer 200 as per Application Specification S-970. If MVER exceeds 10 lbs./24 hrs./1000 sq. ft. and under 15–22\* lbs./24 hrs./1000 sq. ft., apply VaporControl Primer 100 as per application specification S-972.

ASTM F2170 Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes. Verify and document the results in accordance with the specification. If the insitu relative humidity (rh) of the substrate is greater than 75% and less than 84%, apply Dex-O-Tex VaporControl Primer 200 as per Application Specification S-970. If the insitu relative humidity (rh) is greater than 84%, and less than 89–99%\*, apply VaporControl Primer 100 as per Application Specification S-972.

\*Apply VaporControl Primer 100 at the specified thickness required as per Application Specification S-972 for the level of MVER or insitu relative humidity percentage of the substrate.

- B. Inspect substrate to verify proper preparation before applying any materials.
- C. Measure and record ambient temperature and humidity, surface temperature and the temperature of the material being used Do not proceed with the application if the conditions are outside the recommended parameters.
- D. Inspect materials to be used. Verify material is the proper material and all components and sizes are correct. Inspect all containers and verify a proper factory seal with no signs of damage or leakage. Premix liquid materials into a smooth homogenous blend before uses.

#### **Environmental Conditions**

All materials are mixed, applied and cured at the job site. Minimum environmental conditions are required to facilitate proper curing and Performance of the Products. Ensure conditions are in accordance with the following requirements.

Ambient	Min	Max
Temperature	$45^{\circ}F$	$100^{\circ}$ F
Relative Humidity	20% rh	85% rh
Wind	NA	30 mph
Substrate		
Temperature	55 <sup>o</sup> F	90 <sup>o</sup> F
Relative Humidity	NA	78%
MVER	NA	3 lbs.*
Materials		
Temperature	63 <sup>o</sup> F	83 <sup>0</sup> F

\* 3 lbs of MVT, per 1000 sq. ft., during a 24 hr., period as measured by ASTM F1869.

Materials should be delivered in original packages and containers with seals unbroken and bearing manufacturer's labels containing brand name and directions for storage and mixing with other components. Check materials immediately upon receipt; verify all the correct materials in the correct packaging are accounted for in good condition. Sort the materials and store them in a tempered storage area.

#### <u>Application Of Dex-O-Tex Auto Dex 500</u> <u>Polyurethane Vehicular Traffic Deck Coating</u> <u>System</u>

#### **STEP ONE - Bondcoat Primer**

#### AF Bondcoat

Mix Ratio: 3A:2B	Pot Life: 35 min
Cure Time: 8 hrs	Recoat Time: 8 - 36 hrs.
Coverage: $250 \text{ ft}^2$	DFT: 7 mils

A. Mix together the following materials:

AF Bondcoat Comp A...... (3 parts by Volume) AF Bondcoat Comp B...... (2 Parts by Volume)

Measure out the required amount of Component A and Component B and pour into a clean mixing container, scraping the sides and bottom of cans to insure all materials are used. Mix with a low speed electrical mixer for approximately three minutes to a homogenous blend. B. Apply a thin coat of AF Bondcoat using trowel, squeegee, or roller over the area to be coated. Do not allow primer to puddle or be applied too thick. A two and a half gallon (1-1/2 gal A:1 gal B) mixture should cover approximately 625 square feet (250 ft2./mixed gallon) over smooth surface. If surface is very porous, two coats may be required. Allow to cure as described below before proceeding with the application.

**NOTE:** It is common for moisture vapor to "gas" out of concrete and cause "pinholes" in the primer or basecoat as it sets up, especially if the air temperature is <u>increasing</u>. These pinholes can lead to leaks. To avoid pinholes, apply the AF Bondcoat and Auto Dex 500 basecoat when the temperature is decreasing, generally mid to late afternoon. Moisture vapor pressure is reversed as the temperature starts decreasing, and the AF Bondcoat is drawn down into the concrete forming a much stronger, more monolithic bond with the substrate.

#### **STEP TWO – Basecoat**

- A. Apply the first basecoat of Auto-Dex 500 as soon as the AF Bondcoat is dry enough to walk on (Within 4 hours). "Cove" or turn up AF Bondcoat and all subsequent coats of Auto-Dex 500 membrane 2" - 4" onto all adjacent vertical surfaces to create a waterproof cove base.
- B. Mix one pint Accelerator with each (5) gallon unit of Auto-Dex 500 material. Mix thoroughly with a power drill motor and Jiffy style blade and let mixture stand or (5) five minute induction. Mix again thoroughly before applying to the surface.

## **<u>NOTE</u>**: Take care not to entrain air into the Auto-Dex 500 during mixing.

C. Apply first basecoat of Auto-Dex 500 at 120 square feet per gallon (14 mils) wet film thickness over the tacky AF Bondcoat with notched rubber squeegees and backroll to level out material. Coat entire deck. Periodically check the wet mil thickness of the coating by use of a wet mil gauge and adjust as required to

comply with system specifications. Application should be applied in a monolithic pour during each step of the process. A continuous application will ensure complete waterproof integrity and a smooth and level coat with no lines or streaks to disfigure the deck. Let cure overnight. NOTE: High humidity and warm air temperatures speed up the curing process, low humidity and cold air temperatures retard the

D. Inspect the basecoat for pinholes or bubbles due to moisture vapor "out gassing". Grind or scrape off any bubbled material and fill flush with polyurethane sealant prior to applying the second basecoat Apply second basecoat of Auto-Dex 500 at same rate of coverage (120 sq. ft. per gallon - 14 mil wet film thickness) in same fashion (squeegee and backroll).

#### **STEP THREE - Wearing Coat**

curing process.

A. Apply Auto-Dex 500 wearing coat mixed with accelerator (1 pint per 5 gallon can), by squeegee and backroll at a rate of 150 square feet per gallon, 750 square feet per 5 gallon unit. Walk back out onto the wet material on spiked or "golf" type shoes and broadcast 10-15 lbs. per 100 square feet, of 16, 20 (preferred), or 30 mesh dry silica sand by hand, power broadcasting or sandpot spray. Sand should be broadcast in an even, uniform fashion, free of lumps or streaks.

#### **STEP FOUR - Topcoat/Sealer**

- A. Sweep or vacuum all excess sand. Scrape all sand lumps or streaks to match the surrounding sand surface profile.
- B. Apply Auto-Dex 500 topcoat mixed with accelerator by squeegee and backroll at 100 square feet per gallon, 500 square feet per (5) gallon unit. NOTE: Let coating system cure at least (72) hours before allowing traffic on deck. Curing time depends on temperature and humidity. Low temperature and low humidity retards (extends) cure.

# **STEP FIVE - Ramp and Turning Radius Areas**

A. An additional layer of sand aggregate is necessary over extreme high traffic or high use areas such as ramps, turning radius and ticket booths. Prior to application of the topcoat, apply an additional coat of Auto-Dex 500 at the rate of 100 square feet per (1) gallon, 500 square feet per (5) gallon unit. Broadcast aggregate at the rate of (5) lbs. per 100 square feet, then proceed with application of the topcoat.

#### **COVERAGE TABLES**

Coverage Rates	Per Gallon	Per 5 Gal Uni
AF Bondcoat	250 sq ft	1250 sq ft
Polyurethane Basecoat	120 sq ft	
Wearing Coat	150 sq ft	
Topcoat	100 sq ft	
High Use Topcoat	100 sq ft	
Silica Sand 20 lbs per	100 sq ft	600 sq. ft

Mil Thickness Coverage Rates:	<u>Dry</u>	Wet
AF Bondcoat	3 mils	6.4 mils
Basecoat	11 mils	13.3 mils
Wearing Coat	9 mils	10.7 mils
Topcoat	11 mils	16.0 mils
High Use Topcoat	11 mils	16.0 mils

Gallons Per 100 Square Feet:

AF Bondcoat	0.4 gal
Auto-Dex 500	2.5 gal
High Use Auto-Dex 500	3.5 gal

#### **General Cautions**

- 1. Read and follow Crossfield Products Corp. Specification S-900.
- 2. Consult application specification Material Safety Data Sheets and labels before using any products.
- 3. For proper workability it is important that the Dex-O-Tex materials be stored and mixed at a temperature of  $65^{\circ}F 80^{\circ}F (18^{\circ}C 26^{\circ}C)$ .
- 4. The substrate temperature should be between 65°F 80°F. A warm substrate will decrease the pot life and make the materials sticky. A cooler substrate will retard the cure and may cause a blush of the epoxy resins.
- 5. All concrete curing agents, sealers and hardeners must be removed from the concrete prior to application of the Bondcoat.
- 6. When mixing the epoxy resin components, be sure to use all of the provided resins. The resins

are pre-measured to the correct ratios. Scrape all of the hardener from the container into the resin.

- 7. Do not turn mixing vessels upside down to drain on the flooring surface. Unmixed resin from the side may produce soft or uncured spots on the flooring surface.
- 8. Keep the unfinished flooring surface clean. Do not track dirt, grease, or any other contaminate onto the unfinished flooring surface. Anv contaminate could effect the aesthetics of the finished flooring.
- 9. Good ventilation must be provided during application, particularly in confined spaces.
- 10. Always obtain, read and observe Manufacturer's Safety Data Sheets (MSDS) before handling materials. Become familiar with the products on paper before you open the cans.

#### Cautions for Safe Handling of Epoxy, **Polyurethane or Polyurea Materials**

- 1. Read and observe precautionary statements on product labels.
- 2. Keep containers tightly closed.
- 3. Keep out of reach of children.
- 4. For industrial use only. Do not allow application by untrained workers.
- 5. Remove contaminated clothing and shoes. Wash clothing before re-use.
- 6. Use of safety goggles and chemical resistant gloves is recommended. Wear only full-length trousers and long-sleeve shirts. Apply protective creams to exposed skin areas.
- 7. In general, prolonged contact of epoxies, polyurethanes or polyureas with skin may cause Contact with curing agents or irritation. polyurea resins may cause skin burns. Products may cause skin sensitization or other allergic responses. Avoid all contact with eyes.
- 8. In case of contact with skin, immediately remove the material with soap and water. Upon completion of work at lunchtime or end of day, carefully check all skin surfaces for any traces of resinous materials. Wash with soap and water. If wash facilities are not located nearby, establish water-washing station at work site. Do not use solvents to remove epoxy, polyurethane or polyurea materials from skin, as solvents will

drive material deeper into skin. If redness or a skin rash develops, consult a physician.

9. Mix and apply materials only in conditions of good ventilation. Avoid breathing vapors. Appropriate respiratory protection is required when exposure to airborne contaminants may exceed acceptable limits. Respirators should be selected and used in accordance with OSHA, subpart I (29 CFR 1910.134)



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**Dex-O-Tex Application Specification** S-700 Rev. 10/13