



Specifications and Data

DIEDRICH 300-C CONCENTRATE WATER-BASE SILOXANE WATER REPELLENT - VOC COMPLIANT



1. **PRODUCT NAME:**
DIEDRICH 300-C CONCENTRATE
WATER-BASE SILOXANE

2. **MANUFACTURER:**
Diedrich Technologies, Inc.
7373 S. 6th Street
Oak Creek, WI 53154
Phone: (414) 764-0058
(800) 323-3565
Fax: (414) 764-6993
E-mail: diedtech@execpc.com
www.diedrichtechnologies.com

3. **PRODUCT DESCRIPTION:**
DIEDRICH 300-C Concentrate Water Repellent is VOC compliant, water dilutable, penetrating, breathable solvent-free microemulsion concentrated alkoxy siloxane material, specially formulated for use on precast and site cast concrete, clay and concrete masonry, sandstone and stucco surfaces where surface darkening is unacceptable. DIEDRICH 300-C Concentrate is not recommended for polished or unpolished marble, travertine, limestone and polished granite, gypsum, plaster or synthetic resin paint. DIEDRICH 300-C Concentrate Water Repellent reduces bonding of airborne dirt and hydrocarbons; water damage caused by freeze/thaw cycles is reduced. Provides protection against efflorescence and exhibits excellent resistance to ultraviolet rays and chlorine ions. **Exceeds requirements of NCHRP 244, meets SSW 110C Federal Specification and ASTM E514 (test results on back).**

ADVANTAGES:

- ★ VOC compliant contains no organic solvent.
- ★ Concentrate - minimize storage, transportation and container disposal requirements.
- ★ Dilutions of up to 19 parts fresh water are possible. One gallon of concentrate can treat up to 4000 sq. ft.
- ★ Alkaline Stable - suitable for new concrete.
- ★ Deep penetration - ideal on vertical or horizontal surfaces.
- ★ Ideal for on-site or in-plant treatment of precast concrete or GFRC.

TECHNICAL DATA:
SOLIDS: 100% concentrate
APPEARANCE:
Clear yellow/orange liquid
SPECIFIC GRAVITY: 1.0

FLASH POINT:
90°F (in concentrate)
>208°F (in 1:9 dilution)
>208°F (in 1:14 dilution)
VOC: 318g/l (EPA Method 24 - ASTM 2369) @ 100% concentrate

4. **LIMITATIONS:**
Air and surface temperatures must be 40°F (7°C) or higher at time of application. Repointing should be done and allowed to dry before application. Caulking must be done and allowed to cure or until material is set as per manufacturers instructions. Protect surrounding non-masonry surfaces such as glass, anodized aluminum, painted surfaces, etc. Any inadvertent drips, splashes or sprays should be removed with water immediately before solution dries and may bond to the surface. Application of the product should not occur when rain is expected within 4 hours. Do not allow product to freeze, store at room temperature (65°F). Once diluted with water the 300-C Concentrate product must be applied within 24 hours for maximum effectiveness. Product will not prevent water penetration through structural cracks, defects or open or missing joints. Variations in texture and porosity of the substrate will affect coverage, appearance and performance of the product.

5. **PRECAUTIONS:**
Protect all adjacent non-masonry surfaces. Adjacent vegetation should be protected by covering to protect in the event of overspray and/or excessive runoff. CAUTION: Product must be diluted with clean, fresh water only. Workers should wear chemical splash goggles to prevent contact with eyes. Do not breathe vapors or spray mist. NIOSH/MSHA approved respirators must be used for indoor and/or enclosed unventilated areas. Care must be taken to prevent overspray and wind drift on to adjacent buildings, pedestrians and vehicles. NOTE: 300-C Concentrate has a flash point of 90°F in undiluted form (minimum temperature at which fuming is sufficient for ignition). When applying in unventilated enclosed areas vapors may ignite. Make sure all pilot lights and other sources of spark and flames are eliminated before application process commences. KEEP OUT OF REACH OF CHILDREN AND ANIMALS.

6. **PREPARATORY WORK:**
Masonry, concrete and sandstone type surfaces should be clean, dry, sound and free of oil, grease, sand, surface dirt/dust, chemical films and coatings. Remove loose and or deteriorated mortar, repoint and allow to dry for at least 72 hours before application. Caulking and sealant work must be done prior to application of diluted 300-C Concentrate Water Repellent and

allowed to dry 6 to 12 hours for curing (or until material is set) in accordance with manufacturers instructions. If there is evidence of efflorescence or alkali deposits on the surface it should first be neutralized with either DIEDRICH 101WN, 200, 202, or 202V depending on the substrate to be treated. New concrete should be allowed at least 14 days to cure before the application.

7. **TEST AREA:**
A test area of the job must be test coated (generally 5' x 5' [1.5m x 1.5m] section) and approved by the architect and building owner before beginning full scale application and then remain the standard for the project. Application must be done using the same equipment as would be used during full scale application. Individual surface types must be tested. Inspection of the test areas should occur after the surface has thoroughly dried. Allow approximately 4 days or more prior to testing for the product to fully react. A pressure washer or garden hose with a straight stream nozzle shall be directed at the test patch areas for approximately 5 minutes or use a Rilem tube to confirm penetration resistance. There must be hydrophobic resistance of water penetration into the masonry. A water bucket splash method or spray bottle spritz are unacceptable.

8. **COVERAGE:**

Architectural concrete Block:	
Smooth	600-985 sq. ft.
Burnished	600-1200 sq. ft.
Ribbed	600-850 sq. ft.
Concrete:	
Brick	600-850 sq. ft.
Tile	600-850 sq. ft.
Precast Panels	1500-2000 sq. ft.
Pavers	600-850 sq. ft.
Cast-in-place	600-850 sq. ft.
Fired Clay:	
Brick Paver, Terra Cotta & Tile	1250-1750 sq. ft.
Granite:	
Unpolished	2000-4000 sq. ft.
Sandstone	750-1000 sq. ft.
Slate	2000-4000 sq. ft.

*Coverage rates indicate average per gallon of concentrate.

DILUTION:
DIEDRICH 300-C Concentrate Water Repellent is to be diluted with clean, fresh water only. Mixing containers must be clean, dry and free of any contaminates. As the 300-C Concentrate is added to water a milky white solution will result. To produce a uniform dispersion of the concentrate in the water lightly but thoroughly mix the solution.

Dilution Ratios = Solids %

Vertical surfaces:

Porous

1 part concentrate: 9 parts water = 10%

Semiporous

1 part concentrate: 14 parts water = 7%

Dense

1 part concentrate: 19 parts water = 5%

Horizontal surfaces:

Porous

1 part concentrate: 4 parts water = 20%

Semiporous

1 part concentrate: 7 parts water = 15%

Dense

1 part concentrate: 9 parts water = 10%

9. APPLICATION:

Surface and air temperature must be above 40°F (7°C) when being applied. To insure uniformity and even solids distribution the product must be thoroughly mixed before application. **Spray apply from the bottom up to assist in uniform distribution of the sealer.**

APPLICATION TECHNIQUE: There is a human tendency to use quick arm movements while spraying a mist to the point darkening the substrate. This is not sufficient to apply the amount of material required to achieve optimum product performance. The best method to achieve sufficient product application is a wet on wet application. This involves a mist application, using slow arm movements to break surface tension which results in a darkening of the surface. This is followed by spraying again using slow arm movements, material to the point a 6" to 8" (20cm) (floodcoat) controlled rundown occurs on a vertical surface and on a horizontal surface with a saturation spray so the surface stays wet for a few minutes prior to penetration into the surface. This is the proper procedure required for ultimate performance in accordance with DIEDRICH specifications. Spray application is best achieved with the DIEDRICH ACID EXPRESS APPLICATOR PUMP, a low pressure 40 psi corrosive resistant sprayer.

VERTICAL SURFACES - The appropriately diluted DIEDRICH 300-C Concentrate requires a wet on wet application and should be applied with low pressure (50 psi

maximum) airless spray equipment. Apply a flood coat with a minimum of 4 to 8 inches rundown. Allow first application to penetrate surface for 2-3 minutes. Apply a second coat again using the 6 to 8 inch flood coat.

If application is to be by brush or roller extra care should be taken to assure sufficient material is applied to saturate the surface thoroughly. Heavy runs or drips should be brushed out if they do not penetrate.

HORIZONTAL SURFACES - When application is to horizontal surfaces the appropriately diluted DIEDRICH 300-C Concentrate should be applied in a single saturating application (equivalent to a wet on wet application). Care must be taken to insure sufficient material is applied. Usually the surface will remain wet for 2-3 minutes before penetrating. If pooling or puddles occur they should be broomed out until they thoroughly penetrate into the surface. To meet NCHRP 244 Specifications one part DIEDRICH 300-C Concentrate should be blended with 5 parts water. To meet Fed. Spec SSW110C dilute one part DIEDRICH 300-C Concentrate with 7 parts water. For damp proof protection a dilution of 1 part DIEDRICH 300-C Concentrate to 20 parts water is effective. Surfaces treated with DIEDRICH 300-C Concentrate will dry to the touch in 1 hour. Treated surfaces must be protected from rainfall for a minimum of 4 hours. Up to 72 hours (approximately 4 days) may be required for treated surface to achieve full water repellency. Equipment and tools should be cleaned immediately with soap and hot water.

10. STORAGE AND SHELF LIFE:

Undiluted DIEDRICH 300-C Concentrate can be stored under normal warehouse conditions for twelve (12) months in airtight container.

11. CLEANUP:

Clean equipment and tools with hot soapy water. Overspray can be cleaned with hot soapy water. Dried residue can be cleaned with a mild citric acid or very hot water, then scrubbed with a plastic sponge.

12. WARRANTY:

A written water proofing warranty of up to 10 years is available on an individual project basis. For information prior to any warranty being offered contact DIEDRICH TECHNOLOGIES INC., 7373 S. 6th St. Oak

Creek, WI 53154. **PRODUCT FREEZES BELOW 32°F, AND MAY BE ADVERSELY AFFECTED BY COLD WEATHER.** DIEDRICH TECHNOLOGIES INC., warrants that the product will conform to the description and specifications set forth on the product label and will be free from defects in material and workmanship. The exclusive remedy of the Buyer in the event that the product does not so conform shall be the replacement of the product. This warranty is expressly made in lieu of any and all other warranties, expressed or implied, including the warranties of merchantability and fitness, and Diedrich Technologies Inc. shall not be liable for any loss or damage, directly or indirectly, arising from the use of such merchandise or for consequential or incidental damages.

While Diedrich Technologies Inc. believes that the data contained herein is accurate and the information is based on test and data believed to be reliable, it is the user's responsibility to determine the safety, toxicity and suitability for his own use of the product described herein. Since the actual use, by others, is beyond our control, no guarantee, expressed or implied, is made by Diedrich Technologies Inc. as to the effects of such use, the results to be obtained, or the safety and toxicity of the product referred to herein. Manufacturer shall not be responsible for any contamination, or related testing or removal costs resulting from use of this lead-free product on any material containing lead or toxic or environmentally hazardous substances. Nor is the information herein to be construed as absolutely complete since additional information may be necessary or desirable when particular conditions or circumstances exist or because of applicable laws or governmental regulations.

All claims of any kind against manufacturer arising from or related to this product in any way shall be decided by binding arbitration in accordance with the Construction Industry Arbitration rules of the American Arbitration Association.

copyright © 1999
Revised 2003

DIEDRICH 300 CONCENTRATE PERFORMANCE TESTING

<u>FEATURE/ ADVANTAGE</u>	<u>TEST METHOD</u>	<u>TEST REPORT CODE</u>	<u>CONCENTRATION %</u>	<u>SOLVENT</u>	<u>COVERAGE RATE</u>	<u>PERFORMANCE LEVEL SPECIFIED</u>	<u>PERFORMANCE LEVEL OBTAINED</u>
LOW VOC	EPA 24	D/L Laboratories 7/22/91	17.5	H ₂ O	NA	-	2.37 lbs/gal (284 g/l)
High Water Repellency	ASTM E514	CTL 2/24/94	10	H ₂ O	125 ft ² /gal (326 ml/m ²)	-	86% reduction in leakage rate
	NCHRP 244 Series II	WJE 4/29/92	17.5	H ₂ O	125 ft ² /gal (326 ml/m ²)	-	80% reduction in water absorption
	Federal Spec. SS-W-110C	D/L Laboratories 4/30/92	15	H ₂ O	NA	1.0% MAX.	0.3% average water absorption
Scaling	ASTM C672	CTL 5/11/95	17.5	H ₂ O	125 ft ² /gal (326 ml/m ²)	-	Obtained no scaling after 50 cycles (0/5)
Resistance to Chlorine Ion	NCHRP 244 Series II	CTL 5/11/95	17.5	H ₂ O	125 ft ² /gal (326 ml/m ²)	-	83% reduction in Chlorine ion intrusion
	NCHRP 244 Series IV	CTL 12/31/91	17.5	H ₂ O	125 ft ² /gal (326 ml/m ²)	-	96% reduction in Chlorine ion intrusion
Vapor Permeability	NCHRP 244 Series II	CTL 12/31/91	17.5	H ₂ O	125 ft ² /gal (326 ml/m ²)	-	100% water transmission