DURAL AQUATIGHT 100 PLUS

Moisture Mitigation Treatment System

EUCLID CHEMICAL

Description

DURAL AQUATIGHT 100 PLUS is a two component, modified epoxy system designed to seal concrete and reduce moisture vapor emissions prior to applying finished flooring. DURAL AQUATIGHT 100 PLUS has proven to reduce moisture vapor emissions and be resistant to damage from high alkalinity up to pH 14, the highest level. DURAL AQUATIGHT 100 PLUS meets or exceeds the requirements of ASTM F3010-13, "Standard Practice for Two-Component Resin Based Membrane-Forming Moisture Mitigation Systems.

Primary Applications

- New and existing concrete slabs
- Supermarkets
- Industrial/Retail facilities
- Food & Beverage Processing
- Warehouses
- Hospitals/Schools
- Airplane hangers
- Office space

Features/Benefits

- Reduces moisture vapor emission through concrete
- Exceeds the requirements of ASTM F3010
- Resistance up to 25 lbs MVER on Calcium Chloride Test (ASTM F1869)
- Resistance up to 100% RH on the RH Probe Test (ASTM F2170)
- Resistant to high alkalinity, up to pH 14
- Fast cure
- Single coat application
- Low odor and non-flammable

Technical Information

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

Material Properties @ 75°F (24°C), 50% RH

Mixed Ratio (by volume).....2.4:1

Viscosity, cps.....850

Volume Solids, %.....100

Gel Time, 200 gms, minutes.....20-25

VOC, (EPA Method 24)..... <50 g/L

Tensile Strength, psi (MPa), 7 days
ASTM D638,..... >7,000 (48.6)

Tensile Elongation, ASTM D638, %, 7 days.....2

Compressive Strength, psi (MPa), 7 days
ASTM D695..... 14,000 (97.2)

Bond Strength, ASTM D7234, psi (MPa)>250 (1.7)

Hardness, Shore D, **ASTM D2240**.....80-90

Flammability, ASTM D635..... Self-Extinguishing

pH Resistance ASTM D1308.....Pass 14 day test

Permeability, ASTM E96, Perms
@ 12 mils ..... 0.076 grains/hr^{-1}ft^{-2}in Hg^{-1}
@ 16 mils ..... 0.062 grains/hr^{-1}ft^{-2}in Hg^{-1}
Exceeds ASTM F3010 requirements

Alkaline Resistance, ASTM D1308, 14 day immersion
10% Sodium Hydroxide .....unaffected
50% Sodium Hydroxide .....unaffected

Concrete Cure Time.....7 days minimum

Cure Time/foot traffic, @ 75°F (24°C), hrs.....5

Recoat Time
@ 75°F (24°C), hrs,.....4-5 minimum, 72 max.

Thin film cure, 20 mils, preconditioned to 75°F (23°C)			
	Tested at 50°F (10°C)	Tested at 75°F (24°C)	Tested at 90°F (32°C)
Set to Touch	6 hrs.	2 hrs.	20 min.
Tack Free	8.5 hrs.	3 hrs.	45 min.
Dry Hard	18 hrs.	3.5 hrs.	60 min.
Dry Through	20 hrs.	4 hrs.	75 min.

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Packaging

DURAL AQUATIGHT 100 PLUS is packaged in a 3.4 gal (12.9 L) Contractor Kit.

Shelf Life

2 years in original, unopened, properly stored containers.

Coverage

Apply at a rate of 100-130 ft^2/gallon (2.5-3.2 m2 /L). Ensure that there is a minimum of 12 mil coverage over all high spots on a properly prepared concrete.

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

Directions for Use

Surface Preparation: The concrete substrate must be cured a minimum of 7 days and have a surface tensile strength of greater than 200 psi (1.4 MPa) and have a compressive strength greater than 3,500 psi (24.3 MPa) before coating.

The surface must be structurally sound, clean and free of dirt, grease, oil, curing compounds, soil, dust, densifiers, water soluble unreacted sodium/potassium silicates, oil or wax-based sweeping compounds and other contaminants. The concrete slab must not be in an active state of ASR or NSAR or be exposed to hydrostatic pressure. Surface laitance must be removed. All substrates must be properly prepared with shot blasting ONLY (unless another method is approved by Euclid Chemical) to achieve a minimum CSP 3-4 surface profile in accordance with Guideline 310.2R-2013, published by the International Concrete Repair Institute (ICRI) and then thoroughly cleaned of all dust and debris.

New Slabs: Depending on the composition of the concrete and the curing method, laboratory testing of the slab surface region may not be necessary. It is the responsibility of either the owner, the design team, or the owners representative to provide slab-related information to Euclid Chemical and consult with Euclid Chemical for details before proceeding with installation of DURAL AQUATIGHT 100 PLUS.

Existing Slabs: For concrete slabs that have an existing, or previously installed floor covering or coating system, laboratory examination of core samples is required at the owners expense. Consult with Euclid Chemical for recommendations before proceeding with surface preparation.

Fiber reinforced concrete: After surface prep, burn off exposed fibers and brush blast to removed the melted residue.

The prepared surface of the concrete must be porous. Test the prepared surface in accordance with ASTM F3191. The prepared surface must be able to completely absorb a single drop of water in 60 seconds. Conduct one test per each 100 square feet. Areas that fail this test must be further prepared until a passing test is achieved.

Non-Moving Cracks: Cracks less than 1/8" wide can be filled with DURAL AQUATIGHT 100 PLUS. Cracks larger than 1/8" wide can be filled with a mortar consisting of properly mixed DURAL AQUATIGHT 100 PLUS and sand. Once the non-moving cracks have been filled, and while it is still wet, broadcast sand to refusal. Allow to cure thoroughly and then remove all excess sand prior to proceeding with the application.

Moving Cracks, Saw Cut Joints: All moving joints and cracks must be honored up through the moisture mitigation system any underlayment and floor covering material. Saw Cut Joint sidewalls and the bottom of the joint should be coated with DURAL AQUATIGHT 100 PLUS then allowed to cure for 12 to 24 hours. Then the Saw Cut Joint should be filled with a joint filler recommended by Euclid Chemical.

Expansion Joints: The Expansion Joint sidewalls and bottom of the joint shall be coated with DURAL AQUATIGHT 100 PLUS and allowed to cure 12 to 24 hours. Then a suitable backer rod should be placed in the joint and the cavity filled with a joint filled recommended by Euclid Chemical.

Mixing: Part A and Part B are contained in a 5 gallon plastic pail. Mix parts A & B (resin & hardener) separately using a drill and mixing prop. Then, pour the Part B into the Part A container. Mix for at least 3 minutes, scraping the bottom and sides of the container, to ensure proper chemical reaction. To keep aeration to a minimum, the recommended mixing paddles are #P1 or #P2 as found in ICRI Guideline 320.5R-2014.

Application: Quickly spread the properly mixed DURAL AQUATIGHT 100 PLUS using a flat or notched squeegee ensuring that proper coverage rates are achieved and that there is a minimum 12 mil coverage over all high spots on the properly prepared concrete. Backroll the spread material using a 3/8" shot nap roller that is suitable for epoxy resins to ensure even coverage.

Final Flooring and Coatings Installation:

Resinous Coatings: Can be applied directly over the DURAL AQUATIGHT 100 PLUS upon cure. Resinous coatings should be applied within 72 hours. Perform a test patch to confirm adhesion and compatibility.

Cementitious Products: Cementitious underlayments, such as EUCOFLOOR SL160 and other toppings, will require a primer to be applied to the DURAL AQUATIGHT 100 PLUS before placing the cementitious product. EUCOFLOOR EPOXY PRIMER is recommended. EUCOFLOOR EPOXY PRIMER can be applied directly to the DURAL AQUATIGHT 100 PLUS from 5 hours up to 72 hours after the DURAL AQUATIGHT 100 PLUS application. See EUCOFLOOR EPOXY PRIMER technical data sheet for proper installation instructions.

Adhesives: Flooring adhesives installed directly over the cured DURAL AQUATIGHT 100 PLUS must be formulated for use on non-porous substrates. Confirm adhesion and compatibility of any flooring adhesive prior to use.

Clean-Up

Tools and equipment should be cleaned with xylene or lacquer thinner. Consult Safety Data Sheet (SDS) for safety and health precautions.

Precautions/Limitations

- Sub-slab vapor retarder is recommended, but not required.
- Store DURAL AQUATIGHT 100 PLUS indoors, protected from moisture, at temperatures between 50°F (10°C) and 90°F (32°C).
- Ensure that ambient, substrate and DURAL AQUATIGHT 100 PLUS temperatures are within 50°F (10°C) and 90°F (32°C).
- Do not apply Dural AQUATIGHT 100 PLUS if temperatures are within 5 degrees F of the dew point.
- Before performing moisture level tests, enclose and condition the work area for the length of time as required by ASTM F2170 and ASTM F1869.
- Maintain steady temperatures before, during and after application. This will help to avoid concrete outgassing.
- Concrete outgassing may create pinholes. Recoat if pinholes are evident.
- Core testing to examine the slab for contaminants is not required but is highly recommended and is the responsibility of the owner or owners representative. Such tests may include testing for hydrocarbons, other organic compounds, un-reacted water-soluble silicates, chlorides, ASR, etc.
- Do not apply to slabs that have been treated with densifiers, shake-on hardeners or liquid hardeners.
- Do not use DURAL AQUATIGHT 100 PLUS over gypsum based underlayments.
- Post-cracking of the concrete, slab warping at joints, or cracks after installation of DURAL AQUATIGHT 100 PLUS may cause a breach in the system and void any warranties.
- For use with standard mix design concrete. Special concrete mixtures or high-density mixtures must be reviewed with Euclid Chemical Technical Services.

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