KAUFMAN

PRODUCT
INFORMATION

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Duracrete II VOFT

Description
Duracrete II VOFT is a single-component, rapid setting, vertical/overhead, cement based repair mortar for concrete. It consists of portland cement, lightweight aggregates, air entraining admixture, corrosion inhibitors and proprietary modifiers. When mixed with water, Duracrete II VOFT forms an extremely workable quick setting mortar that possesses high strengths with excellent adhesion and low permeability against carbon dioxide and chloride intrusion. The coefficient of thermal expansion is similar to concrete. The unique feature of Duracrete II VOFT is the tremendous resistance to freeze-thaw cycling and deicing chemicals such as calcium chloride and rock salt, which translates to a more permanent repair of concrete. Additionally, while Duracrete II VOFT is rapid setting, it also is user-friendly due to a working time of about 25 minutes, making it easy to mix and apply the entire unit before it takes an initial set.

Uses
Duracrete II VOFT is recommended for vertical and overhead concrete repairs of both interior and exterior surfaces, however it may also be used in horizontal applications if desired. Use for patching scaled and spalled concrete as well as resurfacing damaged and honeycombed surfaces. It is ideal for use on parking structures, bridges, retaining walls, ceilings, sloped surfaces, or anywhere concrete surfaces need repair, and especially areas that will be exposed to deicing chemicals. Use from ¼" to 2" thick overhead and from ¼" to 3-4" thick on vertical surfaces. Duracrete II VOFT may also be layered for deeper repairs.

Packaging /Yield
50 lb. bag, yielding .45 ft^3
50 lb. pail, yielding .45 ft^3

Specification
ASTM C-928, Rapid Hardening (R2) *

Directions
Surface Preparation
The concrete substrate must be structurally sound, as well as clean and free of all contaminants and deleterious materials, such as grease, oil, form release agent, curing compounds, laitance, etc. The surface must be prepared to a minimum of a Concrete Surface Profile (CSP) of five, as per ICRI Guideline Number 03732. All oxidation must be removed from any exposed reinforcing steel.

Additionally, once prepared properly, the concrete surface must be saturated surface dry (SSD), unless using an epoxy bonding agent. For proper priming of the steel, use SurePoxy HM, SurePoxy HM Class B, or SurePoxy HMEPL.

Physical Properties - @ 75°F

Vicat Set Times (ASTM C-191/AASHTO T-131)		
Initial, 25 mm		20-30 mins.
Final, 25 mm		40-50 mins.
Compressive Strength (ASTM C-109)	3 Hours	2,500
	1 Day	3,500
	7 Days	6,500
	28 Days	8,500
Slant Shear Bond Strength (ASTM C-882)	1 Day	1,500
	7 Days	2,400
Bond Strength by Direct Tension (ASTM C-1583)	28 Days	400
Tensile Strength (ASTM C-496)	28 Days	600
Flexural Strength (ASTM C-348)	1 Day	500
	7 Days	1,200
	28 Days	1,400
Length Change-Wet (ASTM C-157)	+0.03 @ 14 Days	
	+0.03 @ 28 Days	
Length Change-Dry (ASTM C-157)	-0.04 @ 14 Days	
	-0.05 @ 28 Days	
Scaling Resistance (ASTM C-672, 50 cycles)		.68 lbs./ft^2
Chloride Ion Permeability (ASTM C-1202, 360 minutes)		Low
Freeze-Thaw Resistance Relative Dynamic Modulus (ASTM C-666, Procedure A)		96.5%
Modulus of Elasticity at 28 Days (ASTM C-469)		3.2 x 10^6

Mixing
Pour approximately 2.65 quarts of clean water into a mixing container and then slowly add the dry powder. Mix mechanically with a ½" drill and mixing paddle for single bag mixes, or a mortar mixer for 3-5 minutes or until uniform. Do not ever add plasticizers, accelerators, retarders, or any other ingredients besides potable water, unless advised in writing by Kaufman Products.

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Application

Duracrete II VOFT must be scrubbed into the substrate, filling all pores and voids, to achieve the proper bond. Force material against edge of repair, working toward center, making certain to compact the material well especially around any exposed reinforcing bars. After filling repair, consolidate, then screed. Material may be applied in multiple lifts or at least ¼." When using multiple lifts in either vertical or overhead applications, be sure to score the top surface of each lift to produce a roughened surface for the next lift. Allow preceding lift to reach final set before placing fresh material. Each lift should be roughened and re-primed with a slurry coat. For structural bond strength, use SurePoxy HM, HM Class B, SurePoxy HM 24, SurePoxy HMEPL.

The temperature of the mix as well as the ambient temperatures of the area to be repaired will affect the working and set times of Duracrete II VOFT. If using when temperatures are greater than 85º F, we recommend the use of chilled water, and cooling the bags in an enclosed environment. During cold weather, (below 40°F) heat the area to be patched until warm to the touch. Also heat Duracrete II VOFT and use at least 80ºF water or tent the area to retain heat during the initial set. Curing blankets may also help.

Curing

As per ACI recommendations for portland cement concrete, curing is beneficial. Duracrete II VOFT should be either moist cured with wet burlap, polyethylene, a fine mist of water, or a water-based compatible curing compound such as Krystal 15 Emulsion, Krystal 25 Emulsion, Krystal 30 Emulsion, or a Thinfilm Series product.

Do not apply subsequent lifts to a surface to which curing compound was applied. Protect freshly placed Duracrete II VOFT from the effects of sunlight, wind, rain, sleet, and snow.

Notes

Duracrete II VOFT meets all aspects of ASTM C-928, Rapid Hardening (R2) when used at 70 ±15 degrees Fahrenheit. However, Duracrete II VOFT is acceptable for use from 45 degrees Fahrenheit and rising.

Shelf Life

12 months from manufacture date, when stored unopened under recommended conditions. Store between 40 and 85°F and at low humidity. Keep containers tightly closed.

Precautions

Not recommended for use less than 1/4" thick. Do not feather-edge. Temperatures during application should be at least 45°F. Substrate should be damp during application. Read complete *Safety Data Sheet* and *Concrete Substrate Preparation data sheet* before using.

Technical Information

Test results were achieved under laboratory conditions. Statistical variations will occur based upon mixing methods, temperature & humidity, test methodology, site conditions, curing conditions, application methods, and equipment.