

SELECTION & SPECIFICATION DATA

Generic Type	High performance cement base underlayment
Description	A trowel-applied, fast cure and high performance cement base underlayment for sloping and patching floors. Can be overcoated with a variety of finishes including tiles, vinyl and polymer flooring. Protein-free formulation prevents the growth and spread of bacteria
Features	<ul style="list-style-type: none"> • Easy to mix • Quick cure allows for rapid system install • Hygienic • Trowel Applied • Can be installed up to 4" thick • Flexible
Typical Uses	This product is typically used in conjunction with resinous flooring systems. It is used to bring the existing surface to the proper grade and sloping characteristics. Some examples include commercial and manufacturing facilities.
Recommended Thickness	0.25-4.0" (0.64-10.16 cm) Addition of pea gravel is required for thicknesses over 1" (2.54 cm). See mixing instructions for details.
Coverage Rate	0.42 cubic feet per single pack unit (approx. 10 sq ft per bag at ½")* 0.01 cubic meters per single pack unit (approx. 0.93 sq.m per bag at 1.27 cm) *50% extension by weight with addition of clean pea gravel. See mixing instructions. Coverages listed are theoretical, actual coverages may vary based on substrate and site variations. Detailed application instructions are available upon request.
Topcoats	Carbocrete 4020 may be top-coated with several different epoxy and polyurethane materials. Though not typical, it may also be a standalone product, depending on the intended service. Contact Technical Service for recommendations based on specific environments.

SUBSTRATES & SURFACE PREPARATION

Concrete	<p>Concrete shall be designed, placed, cured, and prepared per NACE No. 6/SSPC-SP 13. The PH of the concrete substrate must a minimum of 8.5 prior to application. Substrate must be structurally sound and free of loose or deteriorated concrete. Mechanically abrade the surface to achieve a surface profile equal to CSP 5-7 in accordance with ICRI Guidelines.</p> <p>Product can be profiled after minimum cure of 6 hours. Profiled area must be cleaned after preparation.</p> <p>Saturate surface to be repaired with clean water. Substrate should be saturated surface dry (SSD) prior to application. Soak concrete surfaces prior to application with liberal quantities of potable water, leaving the concrete saturated and free of standing water.</p>
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PERFORMANCE DATA

All test data was generated under laboratory conditions. Field testing results may vary.

Test Method	Results
Bond Strength (ASTM C882)	1 day: 2,000 psi 7 days: 2,500 psi
Chloride Ion Permeability (ASTM C1202)	3 days: <500 coulombs 28 days: <300 coulombs
Compressive Strength (ASTM C109)	3 hrs: 2,500 psi 28 days: 8,000 psi
Length Change (ASTM C157)	28 days wet: +0.03% 28 days dry: +0.05%

The figures and test results shown overleaf are typical properties achieved in laboratory tests at 75 °F (24 °C) and at 50% Relative Humidity.

MIXING & THINNING

Mixing Mechanically mix in an appropriately sized mortar mixer, or drill with paddle mixer. Wet down all tools and mixer to be used. Start with 3.25 quarts of water added to the mixing vessel. Add 1 bag of Carbocrete 4000 while continuing to mix. Add up to 8 oz (29.6 ml) of additional water to achieve desired consistency. Do not add more than 3.5 quarts (0.9 liters) of water or to the extent of causing segregation.

For placement of greater than 1" (2.54 cm) add 25lbs of 3/8" (0.95 cm) clean pea gravel per bag of Carbocrete 4000.
Do not exceed a slump of 7" (17.8 cm). This may cause excessive bleeding and retardation and will reduce the strength and performance of the material.

Working Time Shall be placed within 10 minutes at 70 °F (21 °C)
Finishing work should not exceed 30 minutes at 70 °F (21 °C)

APPLICATION PROCEDURES

General The Carbocrete 4000 mortar must be scrubbed into substrate. Be sure to fill all pores and voids. Force material against edge of repair, working toward center. After filling repair, screed off excess. Allow concrete to set to desired stiffness, then finish. If a smoother finish is desired, a magnesium float should be used. Mixing, placing, and finishing should not exceed 30 minutes maximum. To control setting times, cold water should be used in hot weather and hot water in cold weather. Whenever possible, place Carbocrete 4000 full depth from one side of the repair to the other. To ensure complete contact, work material into substrate.

For use in cold temperatures, Carbocrete 4000 must be maintained at a temperature of at least 35 °F (2 °C). Protect from freezing until a compressive strength of at least 1000 psi (6.9 mPa) is obtained. Faster strength gain will occur when the Carbocrete 4000 and mixing water have been conditioned to a higher temperature prior to placement. In hot temperatures, Carbocrete 4000 should be kept as cool as possible, but not exceeding 90 °F (32 °C). Ice cold water should be used for mixing to help maintain sufficient working time.

APPLICATION PROCEDURES

Finishing

When applying coatings over Carbocrete 4000:

it shall be kept wet for two to four hours, depending on the volume and depth of the placement. Wet curing shall begin as soon as the material has set. Wet cure with wet burlap or polyethylene and a fine mist of water or a curing compound meeting ASTM C-309 when exposed to air movement or direct sunlight. Wet curing should commence immediately after finishing. If necessary, protect newly applied material from the rain. To prevent from freezing, cover with insulating material.

When coatings will not be applied over Carbocrete 4000:

it shall be wet cured for at least 24 hours or a curing compound must be used in order to avoid microcracking.

Mortar Overlays:

Finishing with a rough broom, raked, or tooled finish that closely resembles the ICRI CSP range of the system that the Carbocrete 4000 will be top-coated with can allow the contractor to proceed with the epoxy or urethane cement mortar, successive coat, without additional preparation.

Coatings:

Prepare the surface for coatings by abrading to the specified ICRI CSP range of the system that the Carbocrete 4000 will be top-coated with once its reached sufficient hardness. Vapor Stop is a great moisture mitigating primer that can help level out and depressions or small gaps when tying a patch in to the rest of a slab.

APPLICATION CONDITIONS

Condition	Material	Surface	Ambient	Humidity
Minimum	35°F (2°C)	35°F (2°C)	35°F (2°C)	0%
Maximum	90°F (32°C)	90°F (32°C)	90°F (32°C)	95%

Material should be protected from freezing until it has reached a compressive strength of 1000 PSI (6.9 MPa). Substrate shall be free of frost and ice.

CURING SCHEDULE

Surface Temp.	Light Traffic	Heavy Traffic	Final Cure
50°F (10°C)	4 Hours	8 Hours	35 Days
70°F (21°C)	2 Hours	4 Hours	28 Days
90°F (32°C)	1.5 Hours	3 Hours	21 Days

Ensure the screed is not subject to drafts during the first 6 hours of curing as this may lead to cracking and crazing. Tape up doorways with polythene to prevent air movement. Prevent contamination by following trades, e.g. plastering, including water spillage.

CLEANUP & SAFETY

Cleanup | Clean tools with water immediately after use.

Safety | Read and follow all caution statements on this product data sheet and on the SDS for this product. Employ normal workmanlike safety precautions. Use adequate ventilation. Keep container closed when not in use.

PACKAGING, HANDLING & STORAGE

Packaging | 50 lb (22.7 kg) unit

Shelf Life | 12 months in unopened container

Carbocrete[®] 4000

PRODUCT DATA SHEET



PACKAGING, HANDLING & STORAGE

Storage Temperature & Humidity | 40-100 °F (4-38 °C)

Shipping Weight (Approximate) | Approx. 50 lbs (22.7 kg)

WARRANTY

To the best of our knowledge the technical data contained herein is true and accurate on the date of publication and is subject to change without prior notice. User must contact Carboline Company to verify correctness before specifying or ordering. No guarantee of accuracy is given or implied. We guarantee our products to conform to Carboline quality control. We assume no responsibility for coverage, performance, injuries or damages resulting from use. Carbolines sole obligation, if any, is to replace or refund the purchase price of the Carboline product(s) proven to be defective, at Carbolines option. Carboline shall not be liable for any loss or damage. NO OTHER WARRANTY OR GUARANTEE OF ANY KIND IS MADE BY CARBOLINE, EXPRESS OR IMPLIED, STATUTORY, BY OPERATION OF LAW, OR OTHERWISE, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. All of the trademarks referenced above are the property of Carboline International Corporation unless otherwise indicated.