

## SELECTION & SPECIFICATION DATA

<b>Generic Type</b>	Thermoplastic fiber reinforced microsilica repair mortar
<b>Description</b>	Carbocrete 4020 is a high-strength, microsilica modified repair mortar designed to repair and resurface deteriorated concrete surfaces exposed to severe and aggressive environments. Ideal for vertical, horizontal, and overhead applications, the dense design matrix provides low permeability, restores structural integrity, and can withstand environments with a pH of 3 or higher.
<b>Features</b>	<ul style="list-style-type: none"> <li>• Non-shrink</li> <li>• High-Build</li> <li>• High Bond Strength</li> <li>• Good Flexural Strength</li> <li>• Excellent Freeze-Thaw Resistance</li> <li>• Low Permeability</li> <li>• Resists External Hydrostatic Pressure</li> </ul>
<b>Typical Uses</b>	Repair manholes, wet-wells, pipelines, culverts, trenches, sumps, and brick/concrete structures that have experienced deterioration from exposure to aggressive environments.
<b>Color</b>	Gray Newly applied material may be darker than existing concrete.
<b>Primer</b>	Self-priming on properly prepared new and existing concrete, brick, or steel surfaces.
<b>Application Thickness</b>	1/4" - 4" or more (6.3 to 100 mm or more) lifts for vertical, overhead, and horizontal surfaces
<b>Theoretical Coverage Rates</b>	One 50lbs bag (.45kg) of Carbocrete 4020 will cover approximately 8ft <sup>2</sup> (.75m <sup>2</sup> ) when applied at an average depth of 1/2" (13mm). Yield- .42 Cu/ft when mixed
<b>VOC Value(s)</b>	<1 g/L
<b>Limitations</b>	Good water misting or plastic sheeting practices should be used whenever low humidity, direct sunlight, or high winds are expected during the first 24 hours after installation. This will ensure complete hydrolysis and limit laitance formation at the surface.
<b>Topcoats</b>	Carbocrete 4020 may be top-coated with several different epoxy and polyurethane lining 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

<b>Concrete</b>	<p>Concrete shall be prepared per NACE No. 6/SSPC-SP 13. The substrate must be structurally sound and free of loose or deteriorated concrete.</p> <p>The PH of the concrete substrate must a minimum of 8.5 prior to application.</p> <p>Mechanically abrade the surface to achieve a surface profile in accordance with ICRI Technical Guideline No. 310.2r to a CSP 4 or greater.</p> <p>Product can be profiled after minimum cure of 24 hours. The profiled area must be cleaned after preparation.</p> <p><b>The substrate must be saturated surface dry (SSD) prior to application.</b></p>
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### MIXING & THINNING

<b>Mixing</b>	For optimal performance and application, condition the material to be between 65°F and 85°F (18°C to 29°C) at least 24 hours prior to use. A heavy-duty drill or paddle-type mortar mixer is recommended for large jobs. Add .6 to .9 gallons or 92-115 fluid ounces (2.7-3.4 L) of clean, potable water into a clean mixing vessel, then slowly add all 50 lbs. of Carbocrete 4020. Mix only until no dry clumps remain. Do not exceed 1 gallon of water per bag.
<b>Pot Life</b>	<ul style="list-style-type: none"><li>• ~40 minutes at 75°F</li><li>• Working time will be extended at lower temperatures and shortened when higher.</li><li>• Do not mix more material than can be applied within 30 minutes.</li><li>• Do not add more water to extend pot life, as more water will weaken the finished mortar.</li></ul>

### APPLICATION EQUIPMENT GUIDELINES

Listed below are general equipment guidelines for the application of this product. Job site conditions may require modifications to these guidelines to achieve the desired results.

<b>Pump</b>	Depending on job requirements and desired production rates, various piston, systolic, and rotor/stator pumps may be used. Carbocrete 4020 can also be applied to round structures using centrifugal application, also known as spin casting, equipment for vertical applications. Application thicknesses up to 2" in a single or more when applied installed in multiple lifts.  Contact Technical Service for equipment recommendations based on specific environments.
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### APPLICATION PROCEDURES

<b>Trowel</b>	Saturate all surfaces thoroughly with clean water and allow them to reach the saturated surface dry (SSD) condition just before applying Carbocrete 4020. <b>Mortar Lifts:</b> Apply in 1/4" to 4" (3 to 100 mm) lifts for vertical and overhead applications. Trowel the product into place and allow it to set up before applying the next lift. A subsequent lift or lifts may be required to create surface uniformity. If additional lifts are required after the initial one, the surface of the placed mortar must be scored before it is fully set up.
<b>Finishing</b>	Finish the Carbocrete 4020 to the desired texture. Do not add additional water to the surface during the finishing operation. Once the repair mortar has reached the minimum cure, the substrate must be mechanically abraded to create the profile recommended by the accompanying coating's product data sheet.

### APPLICATION CONDITIONS

Condition	Material	Surface	Ambient	Humidity
Minimum	65°F (18°C)	45°F (7°C)	45°F (7°C)	0%
Maximum	85°F (29°C)	90°F (32°C)	90°F (32°C)	95%

### CURING SCHEDULE

<b>Curing Details</b>	<ul style="list-style-type: none"><li>• Initial Set Time: ~1 hour</li><li>• Final Set Time: ~24 hours</li></ul>
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## CLEANUP & SAFETY

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<b>Cleanup</b>	Clean tools and equipment with water before the material hardens.
	Read and follow all caution statements on this product data sheet and on the SDS for this product.

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## PACKAGING, HANDLING & STORAGE

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<b>Packaging</b>	50 lbs (22.68 kg) unit
<b>Shelf Life</b>	12 months in original, unopened package
	Store in a dry space. Keep from freezing.
<b>Shipping Weight (Approximate)</b>	Approx. 50 lbs (22.6 kg)

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## 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.