

## Architectural Concrete Repair “SC” (Self-Consolidating)

### Packaging

- 50 lb. pail.

### Shelf Life

- 1 year in a sealed pail if stored in dry conditions.

### Yield

- .39 cubic feet per 50 pounds of repair mortar when mixed with 2.25 quarts of potable water.

### Appearance

- The natural color is off-white or light grey. Available in 12 standard paste colors and 6 standard aggregates. Can be customized to match nearly all types of concrete.

### Color Guide:

- <https://www.centurywerks.com/product-data>

### Pot Life

- Up to 5 minutes for a 25” spread.

### Application at a Glance

- Suitable for repairing vertical and horizontal concrete substrates. It is ideal for near seamless repairs to historic concrete façades, sculptures or concrete with an exposed aggregate finish.

### Application Limitations

- Material must be poured into formwork.
- Must be mixed with a low-speed mixer and helical paddle.
- For best performance, apply in temperatures of 40 - 85 degrees Fahrenheit.
- Minimum repair depth is 1” thick with a 3/8” stone or 2.5” with a 3/4” stone.
- Do not mix partial bags of material.
- Do not add any admixtures, just water.
- Not suitable as an overlay for horizontal surfaces.
- For professional use only; not for sale to, or for use by the general public.

### Product Description

Architectural Concrete Repair “SC” is a moderate strength pourable or pumpable concrete repair material designed specifically for restoring older or historic architectural concrete, façades and ornamentation. It is available in 12 standard paste colors and 6 standard coarse aggregate blends. For custom projects, it can be color matched and produced with a variety of aggregate options, ranging from fine aggregate blends for a smooth sanded finish, to mid-size or coarse aggregate for exposed aggregate finishes.

Architectural Concrete Repair “SC” is a one-component, shrinkage compensated, self-consolidating repair mortar designed for large volume vertical and overhead formed repairs that are 1” or deeper. It is low in compressive strength making it a uniquely suitable repair material for older concrete structures. It has excellent freeze/thaw and chloride resistance, low shrinkage and high bond strength without the use of acrylic bonding agents, modifiers or water repellants.

### Product Highlights

- Available in 12 standard colors
- Six standard coarse aggregates available
- Customize to an unlimited variety of colors and aggregate blends
- Self-consolidating pourable and pumpable mix
- Excellent freeze/thaw resistance
- High early strength gain allows for fast removal of formwork
- Excellent bond strength
- Optimal compressive strength for historic applications
- No acrylic admixtures or bonding agents required

Properties	Results
Application Thickness - 3/8” Aggregate	1” Minimum
Setting Time	Initial: 2.25 hrs Final: 4.0 hrs
Spread (ASTM C1611)	25” (within 5 min) < 20” (after 5 min)
Fresh Wet Density (ASTM C138)	138.5 pcf
Compressive Strength 6” Cylinders (ASTM C39)	7 days: 3,150 psi 14 days: 3,600psi 28 days: 3,850 psi
Flexural Strength (ASTM C78)	7 days: 460 psi 28 days: 600 psi
Splitting Tensile Strength (ASTM C496)	28 days: 415 psi
Slant Shear Bond Strength (ASTM C882)	7 days: 1,790 psi 28 days: 3,360 psi
Modulus of Elasticity	7 days: 3,150 ksi 14 days: 3,400 ksi 28 days: 3,550 ksi
Drying Shrinkage After 28 Days (ASTM C157)	.04%
Coefficient of Thermal Expansion (ASTM T336)	5.19 $\mu\text{m}/\text{F}$
Freeze/Thaw Resistance (ASTM C666)	100% after 300 cycles
Freeze/Thaw De-Icing Salt Resistance (ASTM C672)	15 cycles: visual rating of 1 50 cycles: visual rating of 2
Rapid Chloride Permeability (ASTM C1202)	3,630 Coulombs at 28-days
Resistivity (ASTM C1876)	Results Pending



# Architectural Concrete Repair “SC” Application Guide

## 1 Wall Preparation

- 1.1. Cut out the repair area using a grinder fitted with a 1/8” thick non-segmented diamond blade. Be careful not to overcut the corners. Patch geometry should avoid acute angles or curves which can lead to cracking in the patchwork during curing.
- 1.2. Chisel out interior of the patch area to a depth of at least 1” when using a 3/8” stone (2.5” depth with 3/4” stone) or deeper until sound concrete is exposed.
- 1.3. The final patch substrate should be at a CSP profile of 7 or greater. This can be achieved with a pneumatic needle scarifier or bushing chisel/hammer.
- 1.4. All exposed steel reinforcing shall be cleaned to bright metal following ICRI Technical Guideline No. 310.1R. Paint all existing cleaned steel with a zinc-rich epoxy primer for additional corrosion protection.
- 1.5. Patch areas that have embedded reinforcing bars should be chiseled back to a depth of at least 1” - 2.5” (depending on aggregate size) behind the bars to allow for full consolidation of the repair mortar around the steel.
- 1.6. Use a hammer drill and a 3/8” masonry bit to drill 4” deep holes every 8 inches around the entire patch perimeter to accept 8” long stainless-steel threaded dowels.
- 1.7. Remove debris from each hole with compressed air and fill holes with an appropriate epoxy or urethane anchoring adhesive. Insert dowels into holes and wipe up excess adhesive from patch area and allow dowel adhesive to fully cure for 24 hours before further work commences.
- 1.8. Thoroughly rinse the entire patch area with clean water and a scrubbing brush to remove all dust, dirt and debris.

## 2 Forming

- 2.1 Prepare formwork in accordance with ACI 347R.
- 2.2 To achieve a fine sand finish, the form face should be installed in direct contact with the existing concrete. For exposed aggregate finishes, fur the formwork away from the finished concrete surface by 1/8” – 1/4” so the patch stands proud of the surrounding concrete. This will allow room to remove the surface paste and expose the aggregate.
- 2.3 For exposed aggregate repairs, cut strips of neoprene masonry control joint that is 3/8” thick by 3” wide and tack them around the patch area with tape. Install formwork over the top and adjust the depth of your furring by how tight the screws are installed.
- 2.4 Prior to final installation of the formwork, apply a thin even coat of form release agent to all form surface that will be in contact with the repair material. For best results against surface bubble formation use Euclid’s Formshield Pure or W.R. Meadows’ Duogard or Duogard Citrus as the release agents.
- 2.5 Approximately 30 - 60 minutes prior to patching, flood the patch area with copious amounts of water until SSD (saturated surface dry) is achieved. Re-install form faces to the patch area just before pouring.

## 3 Mixing

- 3.1 All material is supplied in a 50lb pail with the pre-blended mortar on the bottom and coarse aggregate layered on top. All ingredients are carefully weighed out. It is imperative that the entire pail of material is mixed at one time and is not divided and mixed in smaller quantities.
- 3.2 Carefully measure 2.25 quarts of potable water into a clean 5-gallon pail.
- 3.3 Slowly pour contents of the repair material into the bucket of pre-measured water while mixing slowly. A forced action hand mixer is essential for obtaining the proper sheer necessary to activate the admixtures. We recommend using an Eibenstock EHR 20.1 R mixer (or similar) with a round helical ribbon mixing shaft.
- 3.4 Mix the material for 2 minutes and allow the material to rest for 2 minutes while the aggregates hydrate. Continue mixing again for an additional 2 minutes and immediately pump or pour the repair material into the formwork.
- 3.5 The recommended application temperature range for this product is between 40 - 85 degrees Fahrenheit. Follow ACI 305 and 306 for hot or cold weather guidelines.

## 4 Installation

- 4.1 Repair material should be poured into formwork in lifts of 4”, wet on wet. After each lift is poured, the outside of the form faces should be hammered or vibrated thoroughly to help consolidate the repair material and remove air voids.
- 4.2 Use of a vibrator within the formwork should not be necessary. However, large undercuts in the patch area resembling the shape of an “L” may require minor vibration within the form to help the material flow to the back of the undercut.
- 4.3 Continue pouring repair material into the forms in the manner outlined above until the repair area is completely filled.
- 4.4 The pouring ports (birdsmouth) at the top of the formwork should be scraped flush to the inner face of the formwork and finished smooth with a margin trowel once the repair material becomes thumbprint hard.

## 5 Curing

- 5.1 The formwork will protect the patches from drying out too quickly while they are in place. During extremely hot and dry weather it may be necessary to apply tape over each pour spout (birdsmouth) on the top of the formwork to help seal in moisture.
- 5.2 Once the formwork is removed, keep the patch areas damp for 3 days by misting the area throughout the day. Areas with significant sun and/or wind exposure should be shaded with damp burlap. Do not apply plastic over patches as this may cause staining or color inconsistencies.

## 6 Finishing

- 6.1 For board finishes or unprofiled finishes, the formwork should remain in place for 72 hours before removal.
- 6.2 To achieve exposed aggregate finishes, the formwork should be removed as soon as the repair material is able to withstand sagging under its own weight. Typically, this is about 4 - 6 hours during warmer dry weather and 8 - 14 hours during cool damp weather. The material should be hard enough to resist denting when pressed, but soft enough to scratch like chalk under your nail.
- 6.3 A mild aggregate exposure can be achieved by misting the surface of the repair with clean water while scrubbing in a circular pattern with a moderately stiff bristle brush.



- 6.4 Moderate to heavy aggregate exposure can be achieved following the same method above but with a stiffer bristle brush or with a wire brush. Power washing with a wide fan tip can also be used. Hand scrubbing is always preferable because it allows you to control the profiling. Never use a grinder with a cup wheel to expose aggregate as this will leave unsightly permanent tool marks.
- 6.5 If the patching material has set too hard to scrub by hand, use a pneumatic handheld needle scarifier to remove the paste and expose the aggregate. We do not recommend sandblasting the patch areas unless you are able to protect the bordering concrete from overshot which will cause a “halo” effect around your patch.
- 6.6 You may find that during the subsequent curing and drying process a thin film or light efflorescence may appear on the surface of the patch which can alter its color. If this occurs, flood the patch and surrounding area with lots of water and then wash the patch with EaCo Chem Effortless or ProsoCo Vanatrol mixed with 12 parts water and scrub gently for a minute or two. Thoroughly rinse all surfaces with water to wash away all remaining cleaner residue.

## 7 Cleaning Equipment

- 7.1 Clean tools and equipment with clean water immediately after use. Cured material must be removed mechanically.

## 8 Long-Term Protection

- 8.1 This repair material is designed with inherent excellent freeze/thaw, moisture and chloride resistance without the use of acrylic modifiers or topically applied water repellants. Repairs that are treated with water repellants will darken differently than the surrounding concrete when under moist conditions.
- 8.2 If additional water repellency is a requirement, Architectural Concrete Repair “SC” can be pre-blended at the factory with an integral water repellant. If a topically applied water repellant is desired, then a silane/siloxane-based water repellant such as ProsoCo Saltguard WB or Siloxane WB is recommended after the patch has fully cured and dried. Never use a film forming sealant over any masonry or concrete repair.

## 9 Warranty

CenturyWerks, LLC. warrants this product for one year from date of installation to be free from manufacturing defects if stored and used as directed within the product’s listed shelf life. The user determines the suitability of the product for intended use and assumes all risk. Users and/or buyers sole remedy shall be limited to the purchase price or replacement of this product exclusive of any labor costs.

**NO OTHER WARRANTIES EXPRESSED OR IMPLIED SHALL APPLY INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. CENTURYWERKS, LLC. SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES. CENTURYWERKS, LLC. SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER THAT INFRINGES ON ANY PATENT OR ANY OTHER INTELLECTUAL PROERTY RIGHTS HELD BY OTHERS.**

## 10 Precautionary Statement

Before handling, the user must understand and follow all warnings and instructions outlined on the product data sheet and Safety Data Sheet (SDS). These documents are available for download at <https://www.centurywerks.com/product-data> or by calling CenturyWerks, LLC at 773-389-3324. Nothing contained in any CenturyWerks, LLC, literature or material relieves the user of the obligation to read and follow all warnings and instructions for each product.

### 24 Hour Emergency Contact:

**Infotrac 1-800-535-5053 (North America), 1-352-323-3500 (International).**

### About CenturyWerks LLC

We believe in the proper restoration of **timeless architecture** through **enduring craftsmanship** with a **refined approach** to restoration. Derived from over 135 years of masonry materials experience, CenturyWerks, LLC manufactures a full line of premium masonry, concrete and plaster repair products under three lines:

- Conserve: For patching & sculpting historic masonry
- Maintain: For repointing historic or specialty masonry
- Repair: For restoring historic or unique concrete

For more information on CenturyWerks, our unique services, product lineup and demonstration videos, visit [centurywerks.com](https://www.centurywerks.com).

**CenturyWerks LLC | 3210 N. Troy St. | Chicago IL 60618 | Tel: (773) 389-3324**

Last updated: April 2025