

# Sonneborn®

## Concrete Repair Systems



### SONOCRETE®

## SONOPATCH® 200

### Two-component repair mortar for overhead and vertical surfaces

#### Features

- Easy to mix and apply...
- Tenacious bond...
- Rapid strength gain...
- Does not sag or slump...
- Polymer modified...
- Fast setting...

#### Benefits

- Labor saving
- Durable repairs
- Reduces downtime
- Can be readily formed, shaved, and finished
- Resists de-icing salts
- Ideal for horizontal, vertical, and cool-temperature applications

#### Where to Use

##### Sonopatch® 200

- Structurally deteriorated concrete surfaces
- Spalls and cavities
- Surface defects
- Above or below grade
- Interior or exterior

### How to Apply Sonopatch® 200

#### Surface Preparation

- 1** Surfaces must be clean, sound, free of laitance, standing water, dust, grease, and other surface contaminants.
- 2** Remove all loose materials by hand or mechanically with a chipping hammer, chisel, scabber, sandblast, waterblast, or similar methods.
- 3** Any exposed steel reinforcement must be cleaned to a white metal finish and primed with an anti-corrosive coating. See Sonoprep™ data guide (Form No. 1017986).
- 4** For proper adhesion, concrete must have a fractured aggregate profile.
- 5** Repair areas should have saw cut straight edges with a minimum depth of 1/4" (6 mm) (avoid featheredging).

#### Mixing

- 1** Precondition Sonopatch® to 70°F ± 5° (21°C ± 3°) before mixing.

- 2** For best results, mechanically mix at slow speed with a 3/4" drill and mixing paddle.
- 3** Add most (all but 1 to 2 cups) of the 3/4 gallon (2.84 L) of Part A liquid into a clean mixing container. Add 52 lb. (23.6 kg) unit of Part B powder by gradually sifting the material while mixing with a slow speed 3/4" drill and mixing paddle. Mix until thoroughly blended. Add remaining Part A liquid to achieve the desired placement consistency. Continue mixing for approximately 2 minutes to ensure a uniform lump-free consistency.
- 4** Placement time is 10 minutes at 70°F (21°C) and 50% relative humidity.
- 5** If projects require larger quantities, multiple units may be mixed in a mortar mixer as follows:
  - (a) predampen mortar mixer;
  - (b) remove any excess water;
  - (c) add 3/4 (2.84 L) gallon unit (1 jug) of Part A per 52 lb. (23.6 kg) unit of Part B; (d) mix for 1 minute to a lump-free uniform consistency. Do not overmix.

#### Application

- 1** Dampen the surface with clean water; it must be saturated surface dry (SSD) with no standing water.
- 2** Apply a small quantity of the mixed Sonopatch® 200 to the SSD substrate. Thoroughly scrub, key in, and work the material throughout the cavity to promote bond.
- 3** Place the mortar into the damp scrub coat. Key in and compact thoroughly to secure bond.
- 4** Trowel the material to the desired finish after initial set. Featheredging is not recommended.
- 5** The maximum single lift recommended is 1" (25 mm) in depth. For applications greater than 1" (25 mm) in depth, Sonopatch® 200 must be extended with up to 50 lb. (22.7 kg) of suitable aggregate per kit. To add additional aggregate, first mix the Sonopatch® 200 according to directions. While continuing to mix, add the maximum amount of washed, graded, SSD, low-absorption, high-density aggregate that will allow for proper

consolidation of the repair material. Adjust the mixture to the same consistency it had before the aggregates were added by adding small quantities of Part A or Part B. If successive lifts are installed, each lift should be scored and allowed to reach initial set before the next layer is applied.

#### Curing

Curing is mandatory for all repairs. Either damp curing for at least 3 days or proper application of an ASTM C 309 compliant Sonneborn curing compound is satisfactory. Extra care should be taken to retain moisture for application on thin sections and in direct sunlight, hot weather, and wind.

#### Clean Up

Clean all tools and equipment immediately with water. Cured material can be removed by mechanical means only.

### For Best Performance

- Sonopatch® 200 is recommended for concrete repairs only.
- Do not bridge moving cracks or joints.
- Do not add any admixtures.
- DO NOT apply below 40°F (4°C) or above 90°F (32°C).
- Do not exceed water requirements.
- Failure to follow good trade practices may result in decreased material performance.
- Protect from freezing before cure (24 hours).
- Protect liquid Part A from freezing; if frozen, discard.
- For large repair areas with no control, expansion, or construction joints, consult ACI guidelines.
- Aggregate extension application of this mortar should be in accordance with ACI concrete guidelines.
- Do not overmix.
- For large applications a bonding agent is strongly recommended, such as EpoGrip™ or Sonoprep™ (Form No. 1017922 or 1017986).
- Do not exceed a length to width ratio of 2 to 1 for the repair area.
- Make certain the most current version of this data guide is being used; call Customer Service (1-800-433-9517) to verify the most current version.
- Proper application is the responsibility of the user. Field visits by ChemRex® personnel are for the purpose of making technical recommendations only and are not for supervising or providing quality control on the jobsite.

## Technical Data

### Test Data

Typical Properties	
Working times at 70°F (21°C), minutes	10
<b>Compressive Strength, psi (MPa)</b> ASTM C 109 *modified	
1 Day	3,000 (20.7)
28 Days	5,800 (40.0)
* 50% relative humidity	
<b>Modulus of Elasticity, psi (GPa)</b> ASTM C 215	
Result	2.49 x 10 <sup>6</sup> (17.0)
<b>Splitting Tensile Strength, psi (MPa)</b> ASTM C 496 (50% relative humidity)	
1 Day	400 (2.8)
28 Days	800 (5.5)
<b>Flexural Strength, psi (MPa)</b> ASTM C 348 *modified	
1 Day	800 (5.5)
28 Days	1,600 (11.0)
* 50% relative humidity	

<b>Bond Strength, psi (MPa)</b> ASTM C 882 *modified	
1 Day	1,000 (6.9)
28 Days	2,000 (13.8)
* Mortar scrubbed into substrate	
<b>Chloride Permeability, in coulombs</b> AASHTO-T-277 (According to ASTM C 1202-91, Table 1)	
Result	Low range
<b>Length Change (% expansion)</b> ASTM C 157 (wet cure)	
1 day	+0.026
28 days	+0.076
<b>Linear Coefficient of Thermal Expansion, inches/inch/°F</b> ASTM C 531	
Result	7.1 x 10 <sup>-6</sup>

Test results are averages obtained under laboratory conditions. Reasonable variations can be expected.

## Order Information

### Packaging

Sonopatch® 200

- Part A: 1 gallon plastic jug containing 3/4 gallon (2.84 L) liquid.

- Part B: 52 lb. (23.6 kg) bag powder

Shelf life is typically one year if stored in unopened containers under normal conditions.

Protect Part A from freezing; do not store below 35°F (2°C).

### Color

- Concrete gray

### Coverage

- A 52 lbs. (23.6 kg) bag yields 0.4 cubic ft. (0.011 m<sup>3</sup>)
- When extended with 50 lbs. of coarse aggregate, yields 0.60 cubic ft. (0.017 m<sup>3</sup>)

## Caution

Sonopatch® 100 Part A contains no hazardous ingredients

### Risks

May cause skin, eye and respiratory irritation. Ingestion may cause irritation.

### Precautions

KEEP OUT OF THE REACH OF CHILDREN. Avoid contact with eyes, skin and clothing. Avoid breathing vapor/mists. Use only with adequate ventilation. DO NOT take internally. Use impervious gloves, eye protection and if the TLV is exceeded or used in a poorly ventilated area, use NIOSH/MSHA approved respiratory protection in accordance with applicable federal, state and local regulations. Wash thoroughly after handling. Keep container closed when not in use.

### First Aid

In case of eye contact, flush thoroughly with water for at least 15 minutes. In case

of skin contact, wash affected areas with soap and water. If irritation persists, SEEK MEDICAL ATTENTION. If inhalation causes physical discomfort, remove to fresh air. If discomfort persists or any breathing difficulty occurs, or if swallowed, SEEK IMMEDIATE MEDICAL ATTENTION.

Refer to Material Safety Data Sheet (MSDS) for further information.

### Proposition 65

This product does not knowingly contain materials which are known to the state of California to cause cancer, birth defects or other reproductive harm.

### VOC Content

0 g/L or 0 lbs./gallon less water and exempt solvents.

## Caution

Sonopatch® 200 Part B contains silicon dioxide, Portland cement, calcium aluminates cement

### Risks

Product is alkaline on contact with water and may cause injury to skin or eyes. Ingestion or inhalation of dust may cause irritation. Contains small amount of free respirable quartz which has been listed as a suspected human carcinogen by NTP and IARC. Repeated or prolonged overexposure to free respirable quartz may cause silicosis or other serious and delayed lung injury.

### Precautions

KEEP OUT OF THE REACH OF CHILDREN. Prevent contact with skin and eyes. Prevent inhalation of dust. DO NOT take internally. Use only with adequate ventilation. Wash thoroughly after handling. Use impervious gloves, eye protection and if the TLV is exceeded or is used in a poorly ventilated area, use NIOSH/MSHA approved respiratory protection in accordance with applicable federal, state and local regulations.

### First Aid

In case of eye contact, flush thoroughly with water for at least 15 minutes. SEEK IMMEDIATE MEDICAL ATTENTION. In case of skin contact, wash affected areas with soap and water. If irritation persists, SEEK MEDICAL ATTENTION. Remove and wash contaminated clothing. If inhalation causes physical discomfort, remove to fresh air. If discomfort persists or any breathing difficulty occurs or if swallowed, SEEK IMMEDIATE MEDICAL ATTENTION.

Refer to Material Safety Data Sheet (MSDS) for further information.

### Proposition 65

This product contains material listed by the state of California as known to cause cancer, birth defects or other reproductive harm.

### VOC Content

0 g/L or 0 lbs per gallon.

*For medical emergencies only, call ChemTrec (1/800/424-9300)*

## Limited Warranty Notice

Every reasonable effort is made to apply ChemRex® exacting standards both in the manufacture of our products and in the information which we issue concerning these products and their use. We warrant our products to be of good quality and will replace or, at our election, refund the purchase price of any products proved defective. Satisfactory results depend not only upon quality products, but also upon many factors beyond our control. Therefore, except for such replacement or refund, CHEMREX® MAKES NO WARRANTY OR GUARANTEE, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE OR MERCHANTABILITY, RESPECTING ITS PRODUCTS, and CHEMREX® shall have no other liability with respect thereto. Any claim regarding product defect must be received in writing within one (1) year from the date of shipment. No claim will be considered without such written notice or after the specified time interval. User shall determine the suitability of the products for the intended use and assume all risks and liability in connection therewith. Any authorized change in the printed recommendations concerning the use of our products must bear the signature of the ChemRex® Technical Manager.



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