



ChemMasters®

ChemPatch™ RS

Rapid Setting, Multi-Functional
Concrete Repair Mortar

SPECIALTY CONSTRUCTION PRODUCTS

P R O D U C T D A T A

DESCRIPTION

ChemMasters' **ChemPatch RS** is a rapid setting, versatile cementitious mortar for repairs of holes, voids, and cracks in concrete and masonry surfaces. This proprietary blend of unique cements and admixtures produces a light color concrete mortar with accelerated set and high early strength for many horizontal, vertical and overhead repairs. **ChemPatch RS** is formulated without added gypsum for enhanced durability and extended resistance to severe weathering and underground environments.

USES

- Repairs above or below grade, interior or exterior, horizontal, vertical, or overhead
- Precast panels, steps, columns and beams, concrete pipe
- Repairs construction faults in formed walls, snap-tie or spreader holes, cracks, honeycombs
- Curbs, walkways, handrails, cornices, lintels, sills

ADVANTAGES

- Eliminates forms for many vertical and overhead applications
- May be shaved or molded to the contours of surrounding surface
- Light color concrete blends well with many existing substrates
- Minimizes downtime on restoration projects
- Unlike gypsum based products, set time is not slowed as the product ages or slowed at lower ambient temperatures

TECHNICAL DATA

Packaging Product Number

50 lb (22.7kg) bags	56 per pallet	F2016.50
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Yield per 50 lb (22.7 kg) bag

Neat	0.42ft ³	0.012m ³
60% extension with 30 lb pea gravel	0.60ft ³	0.017m ³

CSI Specification

Rehabilitation of Concrete	03 01 30/40/50 0.71
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Set Times ASTM C191 / Viacat Method @ 72°F (22°C)

Set	Minutes
Initial	18 to 24
Final	30 to 40
Remains Shavable	Up to 30
Accepts Foot Traffic	2 to 4 hours

Compressive Strength ASTM C109

Time	psi	MPa
3 hours	2,350	16.2
1 day	3,900	26.9
7 days	5,050	34.8
28 days	5,450	37.6

Bond Strength ASTM C882 Modified

Days	psi	MPa
1	1,850	12.8
7	2,250	15.5

Shrinkage & Expansion ASTM C157

Condition	% shrinkage	% expansion
Air Cure @ 28 days	-0.042	-
Water Cure @ 28 days	-	+0.024

Scaling Resistance ASTM C672

Cycles	Mass loss
25	0.1 lb/ft ² Rating 2—Slight Scaling

Water-Soluble Chloride Content ASTM C1218

0.005% (0.174 lb/yd³)



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Directions

Surface Preparation: Surface to be repaired must be sound and free of all oil, grease, old asphalt, form release agents, efflorescence, and curing or sealing compounds. Remove all loose and broken concrete. For optimum results, square cut area to be repaired. Minimum depth is 0.5 in (1.25 cm). Enlarge width and depth of holes and cracks to 0.5 in (1.25 cm). Do not V cut. Roughen or abrade substrate to ensure adequate bonding.

Remove all signs of rust or oxidation from exposed reinforcing steel. Chip out concrete behind or under rebar to a depth of 0.75 in (1.9 cm). Coat clean metal with **Polyweld EPX CI** epoxy to prevent further oxidation and deterioration.

Immediately before placement of **ChemPatch RS**, remove any remaining dust or dirt with vacuum or oil free compressed air. Saturate surface with clean, potable water, remove standing water or puddles.

Mixing: **ChemPatch RS** sets rapidly. Mix only what can be placed within 10 to 15 minutes of adding water. Mix small quantities in a clean pail by adding water to the **ChemPatch RS** powder in the container. When mixing a full bag, use a mortar mixer with rubber tipped blades. One bag of **ChemPatch** requires 3.6 to 3.75 quarts (3.4 to 3.5 L) of water. For patches over 2" (5 cm) add up to 30 lbs (13 kg) of clean 3/8 in (0.95cm), SSD pea gravel or chipped stone per bag to extend the mix and prevent thermal cracking. The mixing sequence is 1) start mixer, 2) add water, 3) add rock or pea gravel if extending the mix, 4) add **ChemPatch RS**, 5) mix for no more than 2 minutes until a stiff, lump free, putty like consistency is achieved.

Placement: Compact mortar firmly into repair area filling all voids and air pockets. Pay particular attention to spaces beneath exposed reinforcing steel. Slightly overfill the area being patched.

For neat repairs over 2 in (5 cm) deep, apply in 1 to 2 in (2.5 to 5.0 cm) lifts. The top surface of each lift must have a 1/8 to 1/4 in (0.32 to 0.64 cm) raked profile. Apply next layer within 25 to 30 minutes.

When design depth is obtained, trowel, float or broom final placement to match surrounding surface texture. **ChemPatch RS** reaches initial set in 20 to 30 minutes then can be shaved with a trowel or sharp metal edge. Always shave **ChemPatch RS** from the middle of the repaired area toward the bonding edge. **ChemPatch RS** remains shavable for 25 to 35 minutes after mixing, depending on environmental factors such as temperature and humidity.

Curing: Large repaired areas should be cured with **Safe-Cure & Seal 309, Spray-Cure & Seal 25 or Spray-Cure & Seal 25A** depending on the VOC regulations in your area. Consult ChemMasters' Technical Service Department.

ChemPatch RS generates substantial heat when used in large quantities and gains strength rapidly. Light foot traffic may be allowed in approximately 2 hours.

Special Applications: Temperatures below 40°F (4°C): Remove frost or ice and warm substrate surface to a minimum 40°F (4°C). Follow the guidelines listed in ACI 306 for Cold Weather Concreting. Keep **ChemPatch RS** bags warm and use lukewarm mixing water to speed set. Never use water above 180°F (82°C).

Above Normal Temperatures: Temperatures exceeding 95°F (32°C), cool surface to be repaired with cool, clean, potable water, remove any standing water before placement. Keep **ChemPatch RS** bags in cool place and use cold mixing water. Mix small batches that can be used quickly.

Bonding: When undercutting or squaring the edges of the repair area is not possible or when application must be made in hot or dry conditions, use **Cretelox** as the mixing liquid for a slurry bond coat. Do not allow bond coat to dry before application of the mortar. Use 1 part of **Cretelox** to 2 parts of water as the mixing liquid. Refer to **Cretelox** Product Data Sheet available at www.chemmasters.net.

Cleanup

Before mortar hardens, clean tools and equipment with water.

Limitations

- **ChemPatch RS** hardens in 20 to 30 minutes. Prepare only enough for immediate use
- **ChemPatch RS** is not suitable as a resurfacing mortar for large, deep horizontal repairs. Consult ChemMasters' Technical Service Staff for recommendations on specific projects.
- Do not add any admixtures or sand
- Do not re-temper
- Do not apply to frozen or frosted surfaces
- Substrate temperature must be warmed to a minimum 40°F (4°C).

Storage

Store unopened bags in cool dry area on pallets. Shelf life is one year from date of manufacture when properly stored.

Precautions:

DANGER: Harmful if swallowed. Causes severe skin burns and eye damage. May cause an allergic skin reaction. Causes serious eye damage. May cause respiratory irritation. Suspected of causing cancer. May cause damage to organs through prolonged or repeated exposure if inhaled.

Keep out of reach of children.

All label precautions and the SDS must be fully understood before using this product.

This Product is Formulated and Labeled for Industrial and Commercial Use Only

FOR BEST RESULTS AND SAFEST USAGE, USER IS SPECIFICALLY DIRECTED TO CONSULT THE CURRENT PRODUCT & SAFETY DATA SHEETS AND PACKAGE LABEL FOR THIS PRODUCT. We warrant our products to meet our published specifications and to be free from defects in materials and workmanship to the acceptable quality levels defined in these specifications. If acceptable quality levels are not specified, the acceptable quality levels will be those normally supplied by us for the product. We make no guarantee of the results to be obtained from the use of our products. The determination as to the adaptability of any of our products to the specific needs of the Buyer is solely Buyer's prerogative and responsibility. We are glad to offer suggestions on the use of our products. Nevertheless, there are no warranties given except such expresses warranties offered in connection with the sale of a particular product. Our liability shall be limited to replacement of, or refund of an amount not to exceed the purchase price attributed to, the goods as to which such claim is made. Our selection of one of these alternatives shall be Buyer's exclusive remedy. IN NO CASE SHALL WE BE LIABLE FOR CONSEQUENTIAL OR SPECIAL DAMAGES, EVEN IF WE HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. THE FOREGOING WARRANTIES ARE IN LIEU OF ALL OTHER WARRANTIES, GUARANTEES, CO-CONDITIONS AND REPRESENTATIONS, EITHER EXPRESSED OR IMPLIED, WHETHER ARISING UNDER ANY STATUTE, COMMON LAW, USAGE OR TRADE, COURSE OF DEALING OR OTHERWISE, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.