

RPS-263

Rapid-Hardening Vertical/Overhead Repair Mortar

SIMPSON

Strong-Tie

CSI Specification: 03 01 00 Maintenance of Concrete

DESCRIPTION

RPS-263 Rapid-Hardening Vertical/Overhead Repair Mortar is a cementitious, single-component, fiber-reinforced, polymer-modified, silica fume-enhanced, structural repair mortar with integral corrosion inhibitor designed for vertical and overhead applications.

ASSESSMENT

WHERE TO USE

- Partial-depth concrete repairs
- Above-, below-, or on-grade applications
- Vertical and overhead applications
- Tunnels, bridges, balconies, parking decks, elevated structures, water treatment facilities, and marine structures

FEATURES

- Ready to use — simply add potable water
- Fiber-reinforced
- High early strength
- High build-up to 3 in. (76 mm) per lift
- Excellent freeze/thaw resistance
- Excellent abrasion resistance
- Low permeability

PRODUCT DATA

All testing performed at 73°F (23°C) and 50% R.H., with the maximum recommended water.

Generic Description

Polymer modified fiber-reinforced cementitious repair mortar

Packaging

50 lb. (22.7 kg) bag (RPS-263)
50 lb. (22.7 kg) pail (RPS-263P)

Color

Dark gray

Product Yield

0.43 ft.³ (0.012 m³) per
50 lb. (22.7 kg) bag or pail

Initial Set Time

18 minutes

Final Set Time

35 minutes

Storage

Store dry between
40° and 95°F (4°–35°C)

Shelf Life

1 year in unopened packaging

VOC

0 g/L

TECHNICAL INFORMATION

The data herein is based on laboratory testing under controlled conditions. Variations may result from mixing methods and jobsite conditions. All testing performed at 73°F (23°C) and 50% R.H., with the maximum recommended water.

Compressive Strength

ASTM C109

| | | |
|---------|-----------|----------|
| 1 day | 3,400 psi | 23.8 MPa |
| 7 days | 7,000 psi | 48.3 MPa |
| 28 days | 8,800 psi | 60.7 MPa |

Splitting Tensile Strength

ASTM C496

| | | |
|---------|-----------|---------|
| 28 days | 1,000 psi | 7.4 MPa |
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Bond Slant Shear

ASTM C882 Mod

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|---------|-----------|----------|
| 28 days | 2,600 psi | 18.2 MPa |
|---------|-----------|----------|

Freeze Thaw Resistance, 300 cycles

ASTM C666

Durability factor of at least 96%

Flexural Strength

ASTM C348

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| 28 days | 820 psi | 5.7 MPa |
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Rapid Chloride Ion Permeability

AASHTO/ASTM C1201/T277

Less than 800 coulombs

Abrasion Resistance –

Method B, 60 minutes

ASTM C779

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| Abrasion Depth | 0.038 in. | 0.97 mm |
|----------------|-----------|---------|

Direct Tensile Bond Strength

ICRI 210.3 /ASTM C1583

| | | |
|---------|---------|----------|
| 28 days | 310 psi | 2.14 MPa |
|---------|---------|----------|

Unit Weight

ASTM C185

| | |
|---------|-------------------------|
| 133 pcf | 2,130 kg/m ³ |
|---------|-------------------------|



LIMITATIONS

- For optimal product performance, apply to surfaces between 40°F (4°C) and 95°F (35°C)
- Always follow ACI 305 and 306 for hot or cold weather installations for best results beyond published recommendations
- Not compatible with solvent-based curing compounds
- Minimum ¼ in. (6 mm) application thickness for traffic-bearing surfaces, ⅛ in. (3 mm) for non-traffic-bearing surfaces
- Avoid contact with aluminum surfaces
- Site conditions can greatly affect cure times and product performance

SURFACE PREPARATION

Concrete and reinforcing steel to receive repair mortar must be sound, clean, and free of all contaminants that could impair product adhesion, bond, or performance. Concrete should be a minimum of 28 days old or substantially cured to the equivalent design strength prior to RPS-263 installation. Prepare concrete and reinforcing steel in accordance with ICRI Guideline 310.1R. Saw-cut the perimeter of the repair area, taking care to avoid cutting any reinforcing steel. Remove all loose or deteriorated concrete by chipping hammer, water jetting, or other mechanical means to reach sound concrete and achieve an open pore structure and surface profile per ICRI Guideline 310.2R CSP 5-9, taking care to avoid micro-cracking. Remove all corrosion, rust, and surface contaminants from reinforcing steel by sandblasting or other mechanical means. Remove all cleaning media and debris by vacuum or blowing with high-pressure, oil-free air. For added corrosion protection, prime exposed reinforcing steel with RPS-406 Zinc-Rich Primer. Prior to installation of RPS-263, saturate the surface with potable water to achieve a saturate surface dry (SSD) surface condition. The substrate should be saturate surface dry (SSD) with no standing water remaining at the time of application. When it is impractical to achieve an SSD surface condition or to improve bond strength, apply RPS-752 Epoxy Bonding Agent or RPS-792LPL Long Pot Life Epoxy Bonding Agent to the repair area prior to RPS-263 installation. RPS-263 must be applied while bonding agent is still wet. Do not apply more bonding agent than can be effectively covered with RPS-263 while remaining wet.

MIXING

For optimal product performance, condition to 70°F (21°C) prior to use. Do not prepare more material than can be used in the working time of the product. For hot-and-cold weather installations, refer to ACI 305 and 306 guidelines. Mix with a mortar mixer or a low-speed (300–600 rpm) drill and mixing paddle. For best results, start with 90% of total mixing water and slowly add entire contents of RPS-263 while mixing to avoid clumping. Adjust using remaining 10% of total mixing water until desired consistency is achieved scraping unmixed material from the sides and bottom of mixing container as needed to ensure all material is mixed. **Consult the printed instructions on the product package for the maximum recommended amount of mixing water.** Mix for approximately 3 minutes.

APPLICATION

Remove all standing water by vacuum or blowing with oil-free, compressed air prior to installation. RPS-263 can be installed on damp, or SSD concrete surfaces. Do not install through standing water or on dry porous surfaces. Take appropriate measures to protect repairs from wind and high temperatures until fully cured. Never apply in direct sunlight.

Hand Trowel with Bonding Agent: Immediately following RPS-752 or RPS-792LPL application, and while bonding agent is still wet, hand-trowel RPS-263 into repair area to desired application thickness. Strike off with trowel and allow product to set. Finish with a wood or sponge float, or broom. For multiple lifts, roughen profile with trowel between lifts.

Hand Trowel without Bonding Agent: Use a scrub coat by applying a thin layer of undiluted RPS-263 into the concrete surface with a stiff bristle brush. Immediately hand-trowel RPS-263 into repair area to desired application thickness. Strike off with trowel and allow product to set. Finish with a wood or sponge float. Do not apply more scrub coat than can be effectively covered with RPS-263 without scrub coat drying out. For multiple lifts, roughen profile with trowel between lifts.

Curing: Immediately following finishing, wet-cure RPS-263 in accordance with ACI 308 or use an ASTM C309-compliant water-based curing compound. The use of curing compounds may affect adhesion of subsequent surface treatments. SSD surface conditions and proper curing procedures are critical at minimum application thickness to prevent premature drying or cracking.

CAUTION

May cause serious eye and skin irritation or damage. When combined with water, may cause moderate to severe alkali burns. Contains silica; do not breathe dust.

Protective Measures: The use of safety glasses and chemical-resistant gloves is recommended. Use appropriate clothing to minimize skin contact. The use of a NIOSH-approved respirator is required to protect respiratory tract when ventilation is not adequate to limit exposure below the permissible exposure limit (PEL) Refer to Safety Data Sheet (SDS) available at strongtie.com/sds for detailed information.

FIRST AID

Eye Contact: Immediately flush eyes with plenty of cool water for at least 15 minutes while holding the eyes open. If redness, burning, blurred vision, or swelling persists, seek medical advice.

Skin Contact: Remove product and wash affected area with soap and water. Do not apply greases or ointments. Remove contaminated clothing. Wash clothing with soap and water before reuse. If redness, burning, or swelling persists, seek medical advice.

Ingestion: DO NOT INDUCE VOMITING. Seek medical advice. Never administer anything by mouth to an unconscious person. Rinse mouth out with water. Never leave affected person unattended. If vomiting occurs spontaneously, lay affected person on their side, keeping head below hips to prevent aspiration of material into lungs.

Inhalation: Remove affected person to fresh air. If affected person continues to experience difficulty breathing, seek medical advice.

CLEAN UP

Spills: Sweep or vacuum material and place in a suitable container. Keep out of sewers, storm drains, surface waters, and soils.

Surface Clean: Remove any residue with hot soapy water. Cured material can only be removed by mechanical means.

Tools and Equipment: Clean with soap and water immediately after use.

Skin: Use a non-toxic, pumice-based soap, citrus-based hand-cleaner, or waterless hand cleaner towel. Never use solvents to remove product from skin.

Disposal: Dispose of container and unused contents in accordance with federal, state, and local requirements. Containers may be recycled; consult local regulations for exceptions.

LIMITED WARRANTY

This product is covered by the Simpson Strong-Tie RPS Product One-Year Limited Warranty, which is available at strongtie.com/limited-warranties or by calling Simpson Strong-Tie at (800) 999-5099.

IMPORTANT INFORMATION

It is the responsibility of each purchaser and user of each product to determine the suitability of the product for its intended use. Prior to using any product, consult a qualified design professional for advice regarding the suitability and use of the product, including whether the capacity of any structural building element may be impacted by a repair. As jobsite conditions vary greatly, a small-scale test patch is required to verify product suitability prior to full-scale application. The installer must read, understand, and follow all written instructions and warnings contained on the Limited Warranty, product label(s), Product Data Sheet(s), Safety Data Sheet(s), and the strongtie.com website prior to use. For industrial use only by qualified applicators. KEEP OUT OF REACH OF CHILDREN!

 **WARNING!** Cancer and reproductive harm — www.P65Warnings.ca.gov.