

RPS-70-9

Epoxy Coating



CSI Specification: 09 96 56 Epoxy Coating

DESCRIPTION

RPS-70-9 Epoxy Coating is a high solids, two-component, moisture-tolerant, high-build protective coating designed to protect steel, concrete, and wood.

ASSESSMENT

WHERE TO USE

- Commercial and industrial applications requiring moderate chemical resistance
- Primary and secondary containment
- Water/wastewater: clarifiers, digesters, sludge thickener tanks, lift stations, manholes
- Food-processing plants: walls, trenches, sumps
- Marine applications: protection from salt spray and water intrusion in immersion service applications
- Fiber-reinforced polymer (FRP) topcoat
- Petrochemical applications
- Above- and below-grade applications
- Floor and wall coating

FEATURES

- Excellent abrasion resistance in wastewater and other industrial applications
- Resists abrasion and staining
- Suitable for immersion service
- Can be applied to damp concrete
- Self-priming for most applications
- Can be fabric-reinforced for added durability
- Very low odor
- Can be brush, roller or spray applied
- Excellent bond to common construction materials

PRODUCT DATA

All testing performed at 75°F (24°C) and 52% R.H., unless noted otherwise.

Generic Description

Epoxy resin alkaline amine hardener coating

Packaging

Kit Size	Model No.
3 US Gallon (11.4 L)	RPS-70-9GRKT3
15 US Gallon (56.8 L)	RPS-70-9GRKT15

Color
Limestone

Pot Life
45 minutes

Finish
Gloss

Dry to Touch
ASTM D1640, Tack-Free Time
Approximately 3 hours

Mixing Ratio
2A:1B

Recoat Window
16-72 hours

Application Rate
16–20 mils DFT total applied in two coats

160–200 ft.²/US gal.
(3.9–4.9 m²/L) per coat depending on surface profile and porosity

Full Cure
7 days

% Solids by Volume
100%

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

Viscosity
ASTM D4016
15,600 cps

Shelf Life
2 years in unopened packaging

VOC
12 g/L (mixed)

TECHNICAL INFORMATION

All testing performed at 75°F (24°C) and 52% R.H., unless noted otherwise.

Compressive Yield Strength

ASTM D695
7 days 8,600 psi 59.2 MPa

Tensile Strength

ASTM D638
7 days 5,500 psi 37.9 MPa

% Elongation

ASTM D638
7 days 1.9% min.

Hardness, Shore D, 7 days

ASTM D2240
80

Abrasion Resistance, CS17 abrasive wheels with 1 kg load, 1,000 cycles

ASTM D4060
Weight loss — 90 mg

Adhesion to cured Simpson Strong-Tie CSS fabrics

ASTM D7234, 7 days, 16 mils WFT
> 780 psi 5.3 MPa



PLANNING

LIMITATIONS

- For optimal performance, apply to surfaces between 45°F (7°C) and 90°F (32°C)
- Do not apply when relative humidity exceeds 90%.
- Material is a vapor barrier after cure. Concrete surface to receive coating must not exhibit an active moisture vapor drive.
- Adhesion and product compatibility testing must be performed prior to over-coating existing coatings.
- Product may discolor if exposed to direct sunlight.
- Resistance to in-service chemical exposure must be confirmed for compatibility prior to application.
- Installations subject to immersion service must be verified to be holiday free.
- Allow RPS-70-9 to achieve full cure before placing into immersion service
- Application may require additional coats to achieve uniformity of appearance
- Site conditions can greatly affect cure times and product performance

PREPARATION

SURFACE PREPARATION

All surfaces must be sound, clean, dry, and free of all contaminants that could impair product adhesion or performance. Remove all oil, dust, grease, dirt, loose rust, and other foreign material to ensure adequate adhesion. All cracks, spalls, voids, pitting, and surface imperfections must be repaired prior to coating installation.

Steel: All welds must be ground smooth. Remove weld spatter. Round sharp edges to a minimum 1/8 in. (3.2 mm) radius. Pre-stripe all welds, edges, and protrusions.

For Immersion Service: Remove all oil and grease from surface by Solvent Cleaning per SSPC-SP 1. Prepare steel per SSPC-SP5 / NACE 1 White Metal Blast Cleaning. Blast clean all surfaces using a sharp, angular abrasive to achieve a 2–3 mil surface profile. Prime or coat prepared steel immediately before flash rusting can occur.

For Non-Immersion Service: Remove all oil and grease from surface by Solvent Cleaning per SSPC-SP 1. For best results, prepare steel per SSPC-SP6 / NACE 3 Commercial Blast Cleaning with a 2–3 mil surface profile. Blast-clean all surfaces using a sharp, angular abrasive to achieve a 2–3 mil surface profile. Prime or coat prepared steel before flash rusting can occur.

For Touch-Up and Small Areas: Prepare steel per SSPC-SP 11 Power Tool Cleaning to Bare Metal.

For Stainless Steel: Remove all oil and grease from surface by Solvent Cleaning per SSPC-SP 1. Do not use chlorinated solvents for cleaning stainless steel. Prepare steel per SSPC-SP5 / NACE 1 White Metal Blast Cleaning. Blast-clean with aluminum oxide blast media to achieve a 2 mil surface profile. Prime or coat prepared steel immediately.

Concrete: Concrete should be a minimum of 28 days at 73°F (23°C) or substantially cured to the equivalent design strength prior to coating application. Remove all form release agents, curing compounds, salts, efflorescence, laitance, and other foreign matter from surface by abrasive blasting or other mechanical means per SSPC-SP13 / NACE 6, ICRI Guideline 310.2R CSP2-4.

For patching or leveling uneven concrete surfaces, use RPS-263 Rapid-Hardening Vertical/Overhead Repair Mortar.

CMU: Mortar should be a minimum of 28 days old and fully cured. Take care to level protrusions prior to coating application. Prepare surface by abrasive blasting or other means to achieve a clean and sound surface.

Fiber-Reinforced Polymer (FRP): FRP surfaces to receive coating must be lightly abraded by hand with a medium-grit sandpaper (100 grit) prior to application. Care must be given not to damage the fibers. Do not mechanically abrade. Once surface is sanded, remove any remaining dust or contaminants with a light solvent wipe using clean cloths. Allow the solvent to dry before application of coating.

Previously Painted Surfaces: Remove all surface contaminants and mechanically abrade substrate to achieve the equivalent of a 100-grit sandpaper profile.

MIXING

For optimal product performance, condition individual components to 70°F (21°C) and stir thoroughly prior to use. Do not prepare more material than can be used in the pot life of the product. Proportion components at a 2A:1B ratio by volume in a clean pail. Mix thoroughly with a low-speed (300–600 rpm) drill and mixing paddle for 3 minutes, scraping unmixed material from sides and bottom of mixing container as needed. Avoid entrapping air in mixture.

Thinning: MEK for brush and roller applications. Maximum 5% by volume. Not recommended for spray applications.

EXECUTION

APPLICATION

RPS-70-9 Epoxy Coating is designed to be applied by airless spray equipment, brush, or roller. The RPS-70-9 can be applied to surface-saturated dry (SSD) concrete. Do not apply to wet concrete. All other surfaces must be dry. Avoid applying in direct sunlight, and protect coating from large temperature variations for 24 hours following installation. Surface temperature must be a minimum of 5°F (2.8°C) above dew point. Condensation that forms on the uncured coating surface can interfere with curing and cause discoloration and/or blushing. Any haze or blushing must be completely removed prior to re-coating. Coverage rates are approximate and provided for theoretical purposes only. Application method and surface condition may affect coverage rates and number of coats required to achieve minimum system thickness. For specific recommendations, contact Simpson Strong-Tie.

Priming: RPS-70-9 Epoxy Coating is self-priming. Certain site-specific conditions may require the use of a specialty primer. Contact Simpson Strong-Tie for additional information.

Primary and Secondary Containment/Floors/Walls/Ceilings: RPS-70-9 Epoxy Coating should be applied in a minimum of two coats. Apply first coat at a rate of 160–200 ft.²/US gal. (3.9–4.9 m²/L). Apply second coat within the re-coat window, at a rate of 160–200 ft.²/US gal. (3.9–4.9 m²/L). If maximum re-coat window is exceeded, mechanically abrade surface prior to application of subsequent coats and solvent wipe with clean cloths. Allow solvent to completely evaporate before coating. Allow RPS-70-9 Epoxy Coating to cure fully prior to placing into service.

EXECUTION

EQUIPMENT

Brush: Synthetic bristle

Roller: Synthetic, with ½ in. to ¾ in. (13 to 19 mm) nap

Spray Equipment:	Fluid Pressure	Fluid Tip	Filter Mesh
	3,000–3,500 psi	0.015 in.–0.021 in.	60
	(21–24 MPa)	(380–535 microns)	(250 microns)

SYSTEM RECOMMENDATIONS

Surface Repair/Leveling: RPS-263

Primers:

- Steel:** RPS-70-9
- Concrete:** RPS-70-9
- CMU:** RPS-70-9

Top Coats: RPS-70-9

SAFETY

CAUTION

Component “A”: WARNING! Causes skin irritation. Causes serious eye irritation. May cause an allergic skin reaction. Toxic to aquatic life with long lasting effects.

Component “B”: DANGER! Combustible liquid. Harmful if swallowed. Causes severe skin burns and eye damage. May cause an allergic skin reaction. May cause respiratory irritation. Suspected of damaging fertility or the unborn child. May cause damage to organs (lung) through prolonged or repeated exposure. Very toxic to aquatic life with long lasting effects.

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 PEL. Refer to Safety Data Sheet (SDS) available at strongtie.com/sds for detailed information.

FIRST AID

Eye Contact: Hold eyes open under running water for 15 minutes. Seek medical advice.

Skin Contact: Wash skin with soap and water. Seek medical advice if irritation develops.

Inhalation: Remove victim to fresh air. If necessary, use artificial respiration. Seek medical advice.

Ingestion: If product is swallowed, call physician or poison control center. DO NOT INDUCE VOMITING, or give diluents to someone who is unconscious, having convulsions, or who cannot swallow. Seek medical advice.

CLEAN-UP

Spills: Construct a dike to prevent spreading. Soak up with absorbent material such as clay, sand, or other non-reactive material. Place in leak-proof containers. Keep out of sewers, storm drains, surface waters, and soils.

Surface Clean: Wipe up uncured material with cotton cloths. If desired, scrub area with abrasive, water-based cleaner and flush with water. If approved, solvents such as ketones (MEK, acetone, etc.), or adhesive remover can be used. Cured material can be removed only by mechanical means.

Tools and Equipment: Remove uncured material with ketones (MEK, acetone, etc.), or adhesive remover. Cured material can be removed only by mechanical means.

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.