



SPI Performance Coatings  
Mopes Ln, Purton, Wiltshire  
SN5 4HG

# Raven® 155

Technical Data Sheet

## Selection and Specification Data

### Description

Raven® 155 is a two-component waterborne epoxy with ultralow viscosity. Used as a penetrating primer/sealer for new and existing concrete and as a polymer additive with high-early strength repair mortars. This product is particularly suitable to prevent out-gassing through polymer topcoats and Raven Lining Systems recommends using Raven 155 to prime concrete exhibiting a moisture vapor emission rate greater than 3 lbs./1,000 ft.<sup>2</sup> /24 hours when tested according to ASTM F 1869.

### Colour

The Part A Resin is clear; the Part B Curing Agent is amber. When mixed the product is a milky color which dries to a transparent film.

### Theoretical Coverage Rates

When applied at 40% solids, coverage is 200 square feet per gallon at 8 mils wet film thickness, providing 3 mils DFT. Actual surface coverage will depend on substrate porosity and roughness. Good painting practices suggest application of two coats for quality assurance. Generally, a wet film thickness gauge may be used to determine actual coating coverage.

However, this material is a penetrating primer and will be rapidly absorbed into the substrate making WFT measurement inaccurate.

### Film Thickness

Dry film thickness (DFT) or wet film thickness (WFT) may be calculated with this formula:  $DFT = WFT \times \% \text{ solids} / 100$ . A maximum of 8 mils per coat is recommended to prevent sagging. Recommended thickness when used as a primer or sealant is one or two coats at 8 mils each to saturate the substrates surface.

### Physical Properties (typical)

Description	Method	Results
Solids by volume, as supplied	Calculated	76%
Hardness, Shore D	ASTM D2240	70
Adhesion, Concrete	ASTM D7234	Substrate failure
VOC	Calculated	0.0 g/L

The value ranges stated in this Technical Data Sheet are based on system processing under controlled laboratory conditions. Equipment configuration and/or field application conditions may produce variances in the final system values.

## Surface Preparation

### General

Prior to coating, the substrate must be prepared in a manner that provides a uniform, clean, sound, neutralized surface suitable for the specified coating. The substrate must be free of all contaminants, such as oil, grease, rust, scale or deposits. In general, coating performance is proportional to the degree of surface preparation.

### Concrete and Masonry

Surfaces must be sound and contaminant-free with a surface profile equivalent to a CSP3 to CSP5 in accordance with ICRI Technical Guideline No. 310.2R-2013. This can generally be achieved by abrasive blasting, shot blasting, high pressure water cleaning, water jetting, or a combination of methods. or a combination of methods.

## Components and Mix Ratio

Part A Resin: Part B Curing Agent mix ratio is 1:1 by volume. To attain the suggested field use level of 40% solids, add 2 parts potable water.

### Thinning

Thin only with potable water; suggested field use level at 40% solids is accomplished by adding water to the mix. Part A Resin: Part B Curing Agent: Water mix ratio is 1:1:2 by volume.



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## Power Mixing

Individually power mix both Part A and Part B containers prior to measuring out 1 part of Part A to 1 part of Part B by volume into a clean disposable pail. Power mix combined A & B for a minimum of three minutes. Dilute by adding water while mixing another minute. Transfer contents to a clean pail and continue mixing at least another minute. Scrape the sides and bottom to obtain a thorough mix before application. Properly mixed material will be a uniform color without light or dark spots.

Example: Mix a 2-gallon kit at 40% solids. In a 5-gallon pail, add 1-gallon part A to 1-gallon part B and power mix three minutes. Dilute by adding 2 gallons' water while mixing. Transfer to a clean pail and mix another minute before use.

### Pot Life

The pot life is 45 minutes for one gallon at 22°C. Longer pot life is possible by mixing smaller amounts and/or cooling down the part A & B before mixing.

## Application

### Substrate Temperature

Minimum recommended substrate temperature: 5°C  
Maximum recommended substrate temperature: 49°C

### Temperature Resistance

Maximum recommended dry temperature: 93°C.  
Wet temperature resistance depends on chemical concentration and exposure time.

### Applying

Apply with brush, roller, airless or air-assisted spray or other suitable method. For best results, apply this product to concrete when its temperature is stable or falling.

### Green Concrete

Freshly applied Portland concrete surfaces should be lightly troweled and allowed to cure until it may be walked on without leaving a mark. Apply Raven 155 diluted to 40% solids by brush, roller or spray application. Raven 155 meets the ASTM C309 requirement for use as a concrete curing compound (water loss <0.113 lbs./ft<sup>2</sup>)

### Polymer Additive

As a starting point, use 2 gallons of Raven 155 diluted to 40% solids as polymer additive liquids with 60 pounds of high-early strength repair mortar.

## Application Equipment

General: This high solids coating may require adjustments in spray techniques.

Conventional: Pressure pot equipped with dual regulators. 3/8 I.D. minimum material hose. 0.070" I.D. fluid tip and appropriate air cap.

Airless Pump Ratio: 23:1 (Min.)

GPM Output: 1.0 (Min.)

Tip Size: .515" to .525"

Output PSI: 500-2000

Filter Size: 60 Mesh Teflon packing are recommended. Use 45:1 pump ratio for elevated applications and 1/2" I.D. hose for lengths greater than 60'.

Note: Teflon packing are recommended. Use 45:1 pump ratio for elevated applications and 1/2" I.D. hose lengths greater than 60'. It is recommended to "back roll" the Raven 175 after spray application to maximize its effectiveness.

Brush/ Roller



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## Cure Time and Recoat Time

### Cure Time

This is a waterborne epoxy and humidity levels below 90% relative humidity are required for the water to evaporate and the coating to cure. Thin film set time varies with substrate temperature and application thickness. Environmental controls and/or additional ventilation may be required to lower the humidity level. Generally, the coating will be tack-free in 1 hour at 72°F and dry-hard in about 4 hours. When used as a polymer additive, reference the repair mortar's data sheet for cure and recoat times.

### Recoat Time

This product may be recoated with itself as soon as it becomes tacky but does not transfer to the finger. Minimum topcoat time is when it cures to a dry-through state, generally 2 - 4 hours at 72°F substrate temperature. Maximum recoat/topcoat time is 72 hours at 72°F substrate temperature; higher temperatures will shorten these windows. Before recoating; inspect, clean and dry surface thoroughly to remove all contamination, including amine blush or condensation. If the recoat/topcoat time is missed, abrade and clean surfaces prior to recoating.

## Cleanup & Safety

### Cleanup

To clean tools, use soap and water. For clean-up of part A only, use acetone, MEK or xylene. To clean skin, wash immediately and thoroughly with soap and water. Refer to the Safety Data Sheet for additional information on health and safety.

### Safety

SDS's are available upon request. All personnel should read and understand the safety recommendations as set forth in the SDS. Keep uncured product away from children at all times.

## Cleanup & Safety

### Packaging

Available in pints (1-quart kit) and one gallon pails (2-gallon kit). Kits are supplied in the correct proportions of A & B; these two components must be mixed together before use. Raven 155 is available through Raven Certified Applicators.

### Shelf Life

Product shelf life is 1 year from purchase date in original unopened containers.  
**Storage Temperature & Humidity**  
Store in a sheltered area between 60°F (16°C) and 80°F (27°C).

## Warranty

**Limited Warranty:** Company warrants its goods to be free of manufacturing defects. Goods manufactured by Company will comply with all applicable federal, state and local laws and regulations. Company makes no warranty as to any parts or equipment manufactured by others. Customer shall look solely and only to the manufacturer of such parts or equipment with respect to any warranty claims. Company hereby assigns to Customer the original manufacturer's warranties to all such equipment and parts, to the full extent permitted. THE AFORESAID IS THE EXCLUSIVE WARRANTY AND IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED. SPECIFICALLY, THERE ARE NO WARRANTIES OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE.

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