RING SEAL CHIMNEY SEAL

RAINSTOPPER
Inflow and Infiltration Solutions

PRODUCT DESCRIPTION

Rainstopper Ring Seal chimney sealant is a two-component, high performance urethane elastomeric coating specifically designed for high build applications. When fully cured, Ring Seal forms an extremely tough, abrasive-resistant rubber coating that provides protection from surface impact as well as corrosion on metal, wood or concrete. Added UV stabilizers provide additional protection from weather and wear.

TYPICAL USES

Ring Seal provides protective layers for concrete structures, tanks, wood, flexible foams, and other industrial surfaces, offering excellent corrosion protection for concrete or steel in potable water services (tested in accordance with Standard ANSI 61). Ring Seal protects against microbiologically induced corrosion, hydrogen sulfide, and sulfuric acid, making it ideal for wastewater applications. Qualified under Florida DOT Section 975 (Elastomeric Waterproof Coating) QPL #S462-0002.

PERFORMANCE SPECIFICATIONS

Specific gravity	ASTM D792	1.083
Density	ASTM D792	67 lbs/ft^3
Hardness	ASTM D2240	85 Shore A
Taber abrasion H-18 wheel, 1000-g load, 1000 cycles	ASTM D4060	190 mg/loss
Tensile strength	ASTM D412	1330 b/in^2
Ultimate elongation	ASTM D412	580%
Tear strength	ASTM D975	150 pli
Water absorption 30 days	Pilgrim	1%
Crack bridging 1000 cycles	ASTM C957	Pass
Elongation recovery	ASTM C957	96%

TYPICAL REACTION PROFILE

Application temperature range	32°F - 120°F
Mix ratio by volume	Retains its elasticity at temperatures ranging from -40°C to 110°C, enabling it to withstand various climactic conditions.
Reactivity	
Gel	15 sec
Tack-free	2 min
Handling	25-60 min

COMPONENT LEVEL PHYSICAL PROPERTIES

Property	*A Component*	*B Component*
Appearance @ 25°C	Amber	Gray
Specific gravity at 25°C	1.04	1.09
Viscosity at 25°C	1500 mPas	2500 mPas
Flash point, PMCC	179°C	216°C
VOC	0%	0%

COMBINED PHYSICAL PROPERTIES

Adhesion	Displays excellent adhesion to many different substrates, including steel, aluminum, concrete, and various polymeric surfaces. Consult your technical service representative for specific primer recommendations.
Thermal resistance	Retains its elasticity at temperatures ranging from -40°C to 110°C, enabling it to withstand various climactic conditions.
Abrasion resistance	Surfaces coated with Ring Seal are exceptionally resistant to abrasion and wear.
Chemical resistance	Highly resistant to de-icing salt solutions, dilute, non-oxidizing acids, caustic solutions, aliphatic hydrocarbons, and mineral oils.
Weather resistance	Good resistance to all types of weathering, ozone, UV radiation, and high energy radiation.
Sealing cracks	Seals cracks and at the same time prevents moisture penetration and attack by aggressive substances.
Water vapor and gas permeability	Waterproof, has a high level of impermeability to water vapor, which helps prevent moisture build-up in the substrate.
Tear propagation resistance	Surfaces coated with Ring Seal have excellent resistance to tear propagation and mechanical stress.

STORAGE

Ring Seal components are shipped in sealed containers that are purged with dry nitrogen. The containers should be kept tightly sealed and stored in a cool dry area. Storage temperatures should not exceed 90°F. Shelf life stored under these conditions is one year. Containers that have been opened should be resealed immediately after material has been removed in order to prevent moisture contamination.

SAFETY

Consult Material Safety Data sheets for complete information on handling and personal protection. Contact Rainstopper at (800) 843-4950 to obtain Material Safety Data Sheets for complete information on safety and handling.

EQUIPMENT SELECTION

If you are going to be spraying small, intricately shaped parts, or applying a thin layer of elastomer (30 Mils), the recommendation is to use a low-pressure cartridge system equipped with a static mixer and an air-assisted spray tip. Dispensing/spraying via a pneumatic gun. Air pressure between 90-120 psi recommended at the gun. Spray tip air Pressure regulated 30-40 psi. If spraying large surfaces or thick layers (up to 1 inch) of elastomer, you must select a high-pressure metering machine and spray gun, or a high-output, low pressure metering machine that can spray a a rate of 7-10 lbs. per minute, and spray gun equipped with either a dynamic or static tip. When applying with high pressure airless equipment (2500-3000 psi), components must be heated to (160°F-170°) to assure good mixing. A number of types

and styles of spray gun/mixers can be successfully used with the Ring Seal elastomer system, including high pressure impingement guns such as the (Gusmer GX-8). The selection of a spray tip is dependent on the nature and size of the object to be sprayed. The tips will have an effective fan width of 25 or 30 degrees, and an equivalent orifice size of between .026 inch to .053 inch. A general rule would be the smaller the surface to be sprayed the smaller the orifice. The use of the small tip size reduces the total through-put of elastomer. For example, the use of a .026-inch orifice would result in an output of about 3 pounds per minute. The output when using the .053-inch orifice would be closer to 10 pounds per minute.

SURFACE PREPARATION

All surfaces to be coated must be clean and dry. Use adhesion promoters and/or recommended primers as specified.

CONCRETE: surface must be free of release agents, curing compounds, oils and free from loose dust or debris. Sandblasting is the most effective method of cleaning concrete surfaces. Sometimes environmental restrictions preclude the use of dry sandblasting. Water blasting with low pressure (3,200 psi) is effective to remove laitance and provide a profile of sufficient depth for Primer adhesion. Chemical cleaning with detergents, caustic soda solutions or trisodium phosphate is necessary to remove oil and grease. A vigorous scrubbing action should be carried out during the washing procedure. It is important to thoroughly flush the surface of the concrete with water to remove all traces of the loosened substances as well as the cleaning solution itself. If either residue remains it will interfere with the bond of the barrier material. B2 or PrimeX Primer (two-component epoxy primers) applied to water blasted concrete provides excellent bonding for Ring Seal.

STEEL: For immersion service - SSPC-SP10 Near White Blast. For non-immersion service - SSPC-SP6 Commercial Blast. Use adhesion promoter for greater adhesion to steel.

OTHER METALS: SSPC-SP1 solvent clean and wire brush.

WOOD: Surface must be dry. B2 or PrimeX primer is recommended to minimize outgassing.

PREVIOUS COATS OF RING SEAL: Remove all loose or poorly adhered coatings. Solvent clean before application of Ring Seal.

APPLICATION

B2 PRIMER: Coat the exposed cleaned surfaces with primer. Area to be coated must be dry. Apply Primer at a rate of 300 sq/ft/gal via spray, brush or roller. Allow Primer to cure a minimum of four hours before application of Ring Seal.

RING SEAL: Cartridge system is supplied in pre-portioned cartridges. Spray application is accomplished via pneumatic dispensing gun. Dispensing pressure 90-120 psi. Regulate spray tip pressure to 30-40 psi. When cartridge spraying, it is important to ensure clean dry air is supplied to static spray tip. If water condenses in the air feed line it will be introduced into the mixed Ring Seal causing incomplete cure or blisters in the cured film. A Clemco CPF 20/80 air filter or equal is recommended to be installed within 10-15 feet or as close as possible to the pneumatic gun. In addition, a DeVilbis HAF-507-K12 Whirlwind filter should be installed at the air input port of the pneumatic gun. After loading cartridge begin spraying and dispose of approximately one ounce of material to assure pistons are equalized and spraying material on ratio. Applying Ring Seal is very much like spraying paint. You must keep the spray pattern perpendicular to the surface being sprayed. Maintain a straight, smooth motion. To achieve the best coverage, each pass of the spray pattern should overlap the preceding pass by approximately 1/3. Ring Seal can be applied in thicknesses from about 30 mils to 1/2 inch or more. On horizontal surfaces, thicknesses of about 1/8 inch can be achieved in a single pass. On vertical surfaces 30-150 mils can be applied in a single coat. Begin spraying Ring Seal, keep trigger depressed until cartridge is empty. If spraying is stopped before cartridge is empty it will be necessary to replace the static spray mixing tip.

1. Load cartridge into pneumatic gun.
2. Attach static tip with supplied diffuser attached to end of static mixing nozzle.
3. Attach supplied air delivery tubing from diffuser to supply line supplied fitting.
4. Open ball valve which supplies air to spray tip. Regulate to 30-40 psi.
5. Activate trigger to begin spraying. Dispose of approximately one ounce; the first bit of material out of the spray nozzle is generally off ratio.
6. Hold trigger of pneumatic gun in the on position until cartridge has been completely dispensed.
7. Close ball valve, remove 90° elbow from spray tip. Remove empty cartridge.
8. Do not stop and start. Due to the very short cure time of Ring Seal, the static mixer will quickly become clogged with cured material. If this should happen, replace with a new static mixer and proceed.
9. Follow recommended spraying techniques detailed above. 30-60 mils can be achieved in a single application.