



## TECHNICAL DATA SHEET – TUFFREZ® 211

Revised: 2/2017

### DESCRIPTION

TuffRez 211 is a two-component flexible epoxy coating for concrete and metal surfaces. Its unique formulation incorporates a polysulfide polymer into the backbone of the epoxy chain that prevents the “age hardening” of conventional epoxy coatings.

### TYPICAL APPLICATION

PRIMER	PolySpec Primer @ 5–7 mils
BASE COAT	TuffRez 211 @ 16–20 mils (horizontal); @ 7–8 mils (vertical)
TOPCOAT	TuffRez 211 @ 16–20 mils (horizontal); @ 7–8 mils (vertical)
OPTIONS	Non-Skid Aggregate @ 0.50 lbs/ft <sup>2</sup> Anti-Microbial Formulation Upgrade (TuffRez 211-AM)

### PERFORMANCE DATA

COMPRESSIVE STRENGTH (ASTM C - 579)	18,000 psi
TENSILE STRENGTH (ASTM D - 412)	2,500 psi
FLEXURAL STRENGTH (ASTM C - 580)	4,300 psi
HARDNESS, SHORE D (ASTM D - 2240)	65–75
BOND STRENGTH (ASTM D - 4541)	425 psi
ABRASION RESISTANCE (ASTM D - 4060)	70 mg
OPERATING TEMPERATURE , MAXIMUM, DRY:	150°F
WET:	Dependent on chemical exposure
IMPACT RESISTANCE , IN/LBS	>270
IMPACT STRENGTH, LBS (ASTM D- 4226)	+20
FLEXIBILITY, 360° 1/4" MANDREL @- 15°F, 10 MIL (ASTM D-3111)	Passed
VOLUME SOLIDS	100%

### BENEFITS

- Maintains toughness over long term
- Excellent resistance to chipping
- Excellent penetration and bond strength
- Maximum chemical resistance to caustics, petroleum solvents and dilute acids
- Low odor, 100% solids epoxy
- Increased thermal shock resistance
- High abrasion resistance

### RECOMMENDED USES

- Secondary containment
- Drum storage
- Vehicle service bays
- Truck unloading areas
- Parking decks
- Chemical processing plants
- Manufacturing facilities
- Warehouse floors
- Aisles
- Mechanical rooms

**GENERIC DESCRIPTION:** Polysulfide-Modified Epoxy

**STANDARD COLORS:** Light Gray

**PACKAGING:** 3-Gallon Unit

**MIX RATIO:** 2R: 1H

### COVERAGE:

80 ft<sup>2</sup> / gallon @ 20 mils  
100 ft<sup>2</sup> / gallon @ 16 mils  
200 ft<sup>2</sup> / gallon @ 8 mils

**TUFFREZ® 211**  
EPOXY COATING, IMPACT RESISTANT

**STORAGE & INSTALLATION**

STORAGE ENVIRONMENT	Dry area, 65-80°F
APPLICATION TEMPERATURE, AMBIENT	50-95°F
APPLICATION TEMPERATURE, SUBSTRATE	Minimum 5° above dew point
SHELF LIFE	1 year
POT LIFE, @ 77°F	30 minutes
FOOT TRAFFIC, @ 77°F	16 hours
FULL SERVICE, @ 77°F	48 hours
RECOAT WINDOW	Minimum: 8 hours, Maximum: 72 hours

**CONSIDERATIONS & LIMITATIONS**

1. Due to viscosity, some roller lines may appear when applying to horizontal surfaces.
2. ITW Engineered Polymers recommends the use of a slip resistant grit with this product.
3. Floors should be sloped to drain to prevent standing water or chemicals. As with any surface, all spills should be removed as soon as possible to prevent a slipping hazard.
4. Do not thin with solvents unless advised to do so by ITW Engineered Polymers.
5. Confirm product performance in specific chemical environment prior to use.
6. Prepare substrate according to "Surface Preparation" portion of this document.
7. Do not apply to slabs on grade unless a heavy unruptured vapor barrier has been installed under the slab.
8. Always use protective clothing, gloves and goggles consistent with OSHA regulations during use. Avoid eye and skin contact. Do not ingest or inhale. Refer to Material Safety Data Sheet for detailed safety precautions.
9. For industrial/commercial use. Installation by trained personnel only.

**SURFACE PREPARATION**

**CONCRETE:** Apply only to clean, dry and sound concrete substrates that are free of all coatings, sealers, curing compounds, oils, greases or any other contaminants.

- New concrete should be cured a minimum of 28 days.
- Concrete that has been contaminated with chemicals or other foreign matter must be neutralized or removed.
- Remove any laitance or weak surface layers.
- Concrete should have a minimum surface tensile strength of at least 300 PSI per ASTM D-4541.
- Surface profile shall be CSP-3 to CSP-5 meeting ICRI (International Concrete Repair Institute) standard guideline #03732 for coating concrete, producing a profile equal to 60-grit sandpaper or coarser. Prepare surface by mechanical means to achieve this desired profile.
- Moisture vapor transmission should be 3 pounds or less per 1,000 square feet over a 24 hour time period, as confirmed through a calcium chloride test, as per ASTM E-1907. Quantitative relative humidity (RH) testing, ASTM F-2170, should confirm concrete RH results <75%.
- All surface irregularities, cracks, expansion joints and control joints should be properly addressed prior to application.
- Outgassing may occur due to the porosity of some concrete surfaces. To reduce the effect of outgassing, the primer and coating should be applied when the temperature of the concrete substrate is dropping. This usually occurs in the evening; however, the concrete substrate temperature should be measured with a surface thermometer for verification. Double priming will greatly reduce the effects of outgassing by additionally filling the pores in the concrete.

**STEEL:** For steel surfaces, a "Near White Metal" ultra high-pressure wash or abrasiveblast with anchor profile of 2-4 mils in accordance with Steel Structures Painting Council Specification SP-10 or NACE No. 2 is required.

**Refer to PolySpec Surface Preparation Guidelines for more details.**

**INSTALLATION STEPS**

1. Prime surface with PolySpec Epoxy Primer. See data sheet for application details.
2. Component A Resin should be premixed prior to using due to possible pigment settling that may occur during transportation and storage.
3. Pour Component B Hardener into the Component A Resin pail and mix well with a mechanical jiffy-type mixer operated at low speed. Scrape the side of the pail to ensure the entire product has been properly mixed; any unmixed material left on the side of the pail will not cure.  
**NOTE: Do not turn the pail upside down and allow to drain onto substrate.**
4. Apply by roller or squeegee and back-roll. Move quickly and empty contents of pail onto surface as soon as possible to provide maximum working time. Material left in the pail will generate heat and have a reduced pot life.
5. **OPTIONAL STEP:** When applied as a non-skid coating, broadcast clean, dry 20/40-mesh sand or aluminum oxide aggregate into wet resin. Allow to dry. A full broadcast to refusal will produce the most consistent and durable system. Brush off excess grit before applying second coat.  
**NOTE: Do not broadcast aggregate into the prime coat.**
6. After the first coat has become slightly tack free (within approximately 10 hours of cure @70°F), apply an additional coat of resin/hardener mixture according to Step 4.  
**NOTE: If the coating has not been recoated within 48 hours, a light sanding followed by a wipe with a 50:50 mixture of water and isopropanol may be necessary. Allow the solvent to flash before applying coating.**
7. Always wear gloves when using this product.

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