



## TECHNICAL DATA SHEET – TUFFREZ® HF

Revised: 2/2017

### DESCRIPTION

TuffRez® HF, a multi-component polyurethane resin concrete, is trowel applied at 1/4" to 3/8". This heavy-duty, seamless topping withstands thermal shock, impact, abrasion and chemical exposure. Ultra-Fresh® performance anti-microbial is added into the screed matrix to inhibit growth of bacteria and microorganisms.

### TYPICAL APPLICATION

ONE COAT	TuffRez® HF @ 1/4"
OPTIONS	Integral Cove Mortar (TuffRez® CM)

### PERFORMANCE DATA

COMPRESSIVE STRENGTH (ASTM C - 579)	6,800 psi
TENSILE STRENGTH (ASTM C - 307)	900 psi
FLEXURAL STRENGTH (ASTM C - 580)	2,900 psi
BOND STRENGTH (ASTM D - 4541)	Concrete failure
IMPACT STRENGTH, IN/LB S (ASTM D - 4226)	>160
VOC	0.0 lb/gal; 0.0 gm/L
MICROBIAL/FUNGAL CONTACT INHIBITION (A.A.T.C.C. 147 - 1993)	100%

*Inclusion of Ultra-Fresh® within the screed matrix of the industrial floor system ensures the permanency of this biocidal additive even in the event of excessive wear.*

### BENEFITS

- Seamless, hygienic finish; no crevices in which dirt and bacteria can dwell
- Impact & abrasion resistant surface suitable for heavy foot traffic and fork lift operation
- Low odor, fast cure installation
- Excellent corrosion & chemical resistance
- Thermal shock resistant; steam cleanable: non-dusting, non-tainting
- Anti-slip surface
- Ultra-Fresh® antimicrobial inhibits growth of bacteria and other microorganisms

### RECOMMENDED USES

- Food & beverage processing areas
- Wet preparation & packaging areas
- Kitchens
- Solvent/chemical stores
- Battery charging areas
- Loading docks

### GENERIC DESCRIPTION:

Polyurethane Concrete

### STANDARD COLORS:

Gray, Red

### PACKAGING:

0.65 Cubic Foot (ft³) Unit:  
1 each Components A and B, Color Pack;  
2 bags HF Filler  
- 32 ft² @ 1/4"  
- 22 ft² @ 3/8"

**TUFFREZ® HF**  
POLYURETHANE TOPPING, TROWEL APPLIED

**STORAGE & INSTALLATION**

STORAGE ENVIRONMENT	Dry area, 40-85°F
APPLICATION TEMPERATURE, AMBIENT	40-85°F
APPLICATION TEMPERATURE, MATERIAL	50-70
APPLICATION TEMPERATURE, SUBSTRATE	Minimum 5° above dew point
SHELF LIFE	6 month
POT LIFE, @ 77°F	10 minutes
TRAFFIC, @ 77°F	Light: 24 hours/Full: 48 hours
FULLY CURED, @ 77°F	7 days

Material cures more slowly at cooler temperatures, and working time will be substantially reduced at higher temperatures. The optimum temperature for installation of this product is 65-85°F. If temperatures are outside this range the contractor will need to expect installation changes and react accordingly. At lower temperatures the material will be more viscous and difficult to move, requiring more effort to install it. At elevated temperatures the material will cure more quickly so work crews will need to work accordingly.

**CONSIDERATIONS & LIMITATIONS**

1. Polyurethane mortar flooring materials shall not be installed or placed on substrates where water is present, or may be expected to be present before the cure of the flooring material.
2. 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.
3. Do not thin with solvents unless advised to do so by ITW Engineered Polymers.
4. Confirm product performance in specific chemical environment prior to use.
5. Prepare substrate according to "Surface Preparation" portion of this document.
6. Do not apply to below grade slabs unless a heavy unruptured vapor barrier has been installed under the slab.
7. 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.
8. 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 14 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-5 or greater meeting ICRI (International Concrete Repair Institute) standard guideline #03732 for coating concrete, producing a profile equal to 40-grit sandpaper or coarser. Prepare surface by mechanical means to achieve this desired profile.
- Moisture vapor transmission should be 8 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 <80%.
- All surface irregularities, cracks, expansion joints and control joints should be properly addressed prior to application.

Refer to PolySpec Surface Preparation Guidelines for more details.

**INSTALLATION STEPS**

1. To prevent undercutting or lifting, keyways (minimum 5/16" wide x 5/16" deep) must be formed at all edges, bay joints, columns, doorways, drains and at regular centers, spaced 10-12 feet apart across the floor surface. See TuffRez® detail drawings (available for download at [www.polyspec.com](http://www.polyspec.com)) for construction details relating to terminations and connections. *TuffRez® HF may be used as a patching compound for holes up to six square feet, 1/2" deep in the existing concrete surface. Clean all debris and dust prior to patching; allow a minimum of six (6) hours cure time before installation of the TuffRez® HF. Holes patched with an alternate manufacturer's approved repair material can receive TuffRez® HF installation after a minimum of 24 hours.*
2. Remove all sand and dust from area to be covered.
3. **OPTIONAL STEP:** Using TuffRez® CM Cove Mortar Topping, install a cove and/or base; see TuffRez® CM data sheet for application details.
4. Pour component A Resin into the pail of a forced action mixer (Kohl-type or mortar mixer). **NOTE: The pail should be large.**
5. Add Component C (Color Pack) to Component A. Mix about 15 seconds.
6. Add Component B Hardener. Mix another 15 seconds.
7. Gradually add all contents of Filler into the liquid mixture and blend thoroughly until all particles are wetted out, normally about two minutes. **NOTE: Two bags are used for each unit.**
8. Immediately after mixing (within 3 minutes), spread the topping onto the floor at a thickness slightly greater than the desired finish, using a screed box.
9. Trowel the surface lightly, using a steel epoxy mortar finish trowel to smooth the surface. The material should be troweled to a finished thickness of at least 1/4" to 3/8", but may be built to 1" or more. **NOTE: For thicknesses greater than 3/4", add clean, dry pea gravel to the mixture.**
10. Immediately roll the surface lightly in two passes with a loop/texture roller. **NOTE: Late or heavy rolling may induce pinholes.**
11. Lay abutting edges within 10 minutes to ensure a neat edge. A "wet edge" installation is imperative during large placements.
12. For best results, clean tools and equipment with PolySpec® All Purpose Cleaner, a nonflammable and non-evaporating cleaner. Always wear gloves when using this product.

C / DOC HF-TDS  
PolySpec is a ® Registered Trademark of ITW Engineered Polymers  
Ultra-Fresh® (anti-microbial) is a ® Registered Trademark of Thomson Research Associates © Copyright 2017 ITW Engineered Polymers. All rights reserved. Published technical data and instructions are subject to change without notice. Please visit the online catalog at [www.polyspec.com](http://www.polyspec.com) for the most current technical data and instructions. Or, you may contact your ITW Engineered Polymers representative for current technical data and instructions.

ITW Engineered Polymers warrants its products to be free from defects in material and workmanship. ITW Engineered Polymers' sole obligation and Buyer's exclusive remedy in connection with the products shall be limited, at ITW Engineered Polymers' option, to either replacement of products not conforming to this warranty or credit to Buyer's account in the invoiced amount of the nonconforming products. Any claim under this Warranty must be made by Buyer to ITW Engineered Polymers in writing within five days of Buyer's discovery of the claimed defect, but in no event later than the expiration of the applicable shelf life, or one year from the delivery date, whichever is earlier. Buyer's failure to notify ITW Engineered Polymers of such nonconformance as required herein shall bar Buyer from recovery under this warranty.

**ITW Engineered Polymers makes no other warranties concerning this product. No other warranties, either expressed or implied, or statutory, such as warranties of merchantability or fitness for a particular purpose, shall apply. In no event shall ITW Engineered Polymers be liable for consequential or incidental damages.**

Any recommendation or suggestion relating to the use of the products made by ITW Engineered Polymers, whether in its technical literature, or in response to specific inquiry, or otherwise, is based on data believed to be reliable; however, the products and information are intended for use by Buyers having requisite skill and know-how in the industry, and therefore it is for the Buyer to satisfy itself of the suitability of the products for its own particular use, and it shall be deemed that Buyer has done so, at its sole discretion and risk. Variation in environment changes in procedures of use, or extrapolation of data may cause unsatisfactory results. ITW Engineered Polymers cannot guarantee that color will conform to sample, if provided.