



## Chemical® Corporation

### FT-2270® Aromatic Polyurea

#### Technical Data Sheet

#### PRODUCT DESCRIPTION

Freedom Chemical Corporation's FreedomTuff® 2270 is a 100% solids elastomeric two-component spray applied aromatic polyurea, used as a protective or waterproof coating designed for commercial, industrial and manufacturing atmospheres. FreedomTuff® 2270 is used in vertical and horizontal applications on concrete, wood and metal surfaces. Its quick gel and set time is convenient and allows for application to proceed while air and substrate temperatures are between 32° F (0° C) and 104° F (40° C). It can be sprayed in one or more passes and is insensitive to moisture.

#### ADVANTAGES

- ✦ Chemical Resistance - Good
- ✦ Complies with National Association of Corrosion Engineers (NACE 6A198) definition for a polyurea coating
- ✦ Complies with SCAQMD Requirements - 100% Solids
- ✦ Complies with the Polyurea Development Associations (PDA) definition of a pure polyurea coating
- ✦ Installation with or without reinforcement
- ✦ Low Temperature Flexibility
- ✦ Meets USDA Criteria
- ✦ No Primer for Carbon or Mild Steel Metals
- ✦ Odorless
- ✦ Thermal Stability – Excellent

#### RECOMMENDED USES

- ✦ Beverage/Food Processing Plants
- ✦ Cold Storage Facilities
- ✦ Entertainment
- ✦ Environmental
- ✦ Gas/Oil - Primary and Secondary Containment
- ✦ Industrial/Manufacturing Facilities
- ✦ Marine
- ✦ Institutional/Medical/Pharmaceutical
- ✦ Military
- ✦ Mining/Timber
- ✦ Parking Structures
- ✦ Transportation
- ✦ Utilities
- ✦ Wildlife Enclosures

#### SURFACE PREPARATION

Surface preparation is the essential first stage treatment of a substrate before the application of any coating. The performance of a coating is significantly influenced by its ability to adhere properly to the substrate material. It is generally well established that correct surface preparation is the most important factor affecting the total success of surface treatment. The presence of even small amounts of surface contaminants, oil, grease, oxides etc. can physically impair and prevent coating adhesion to the substrate.

Be sure that surfaces are clean, dry, and sound and given sufficient profile to obtain adequate product adhesion.

Remove all dust, efflorescence, laitance, salts, curing compounds, dirt, oil, form release agents, and other foreign matter.

Perform an adhesion test prior to starting any coating project.

Concrete should be cured for a minimum of 28 days prior to product application and have at least 3000 psi compressive and 220 psi tensile strength.

ASTM D 4258-Standard practice for cleaning concrete.

ASTM D 4259-Standard practice for abrading concrete.

ASTM D 4260-Standard practice for etching concrete.

ASTM D 4262 and ASTM F 710-Standard practice for preparing concrete floors to receive resilient flooring, section 5.3 ph.

ASTM F 1869-10 Standard test method for measuring moisture vapor emission rate of concrete.

ASTM F 2170-09 Standard test method for determining relative humidity in concrete floor slabs using situ probes.

ICRI 03732: CSP 3-5-Concrete surface preparation.

SSPC-SP 5/NACE No.1, White Metal Blast Cleaning.

SSPC-SP 6/NACE No. 3, Commercial Blast Cleaning.

SSPC-SP 7/NACE No. 4, Brush-Off Blast Cleaning.

SSPC-SP 8, Pickling.

SSPC-SP 10/NACE No.2, Near-White Blast Cleaning.

SSPC-SP 11, Power Tool Cleaning to Bare Metal.

SSPC-SP 12/NACE No. 5, Surface Preparation and Cleaning of Metals by Water Jetting prior to Recoating.

SSPC-SP 13/NACE No. 6, Surface Preparation of Concrete.

SSPC-SP 14/NACE No. 8, Industrial Blast Cleaning.

#### COLOR

Black and Neutral – Non Standard, colors check availability. Add color to part-B only.

FT-2270 is not UV stable - aromatic polyureas are known to get a greenish hue or darken in color when exposed to UV and/or sunlight. This discoloration has shown to have little to no effect on the integrity of aromatic polyureas.

#### COVERAGE RATE

1 gallon (3.79 liters) of FT-2270 will cover approximately 1600 square feet 1 mil (0.025mm) thick, and can be applied in one or more passes to achieve a desired thickness.

#### PACKAGING

50 gallons (189.5 liters) part-A (Isocyanate) and 50 gallons (189.5 liters) part-B (Resin) packaged in 55 gallon (208.19 liter) drums.

#### MIXING PROCEDURES

Do not dilute FT-2270 under any circumstances.

Adequately blend FT-2270 part-B (Resin) with air driven power tools until the mixture and color is consistent making sure not to encapsulate any air.

#### APPLICATION

Primer is recommended on all substrates. Except on properly prepared steel (immersion service requires a primer).

Do not apply more primer to substrate than can be coated the same day. If primer is not coated on the same day as applied, re-apply primer before proceeding.

Substrate temperature should be greater than 32° F (0° C). Insure that the outside temperature is between 32° F (0° C) and 104° F (40° C) at least 6° (-14.44° C) above the dew point and rising.

Prior to application: Precondition both part-A and part-B to 75° F - 80° F (24° C - 27° C) before applying.

Fit part-A with a desiccant drying device. Apply FT-2270 using a plural component, high pressure 1:1 ratio heated spray equipment.

#### Proportioner Conditions:

- Capacity minimum 20 lbs. per minute
- Static pressure 2800 – 3000psi
- Spraying pressure 2500psi minimum
- Pressure balance 100 variance desirable
- 300 psi variance maximum
- Temperatures preheaters & hose 170° F (77° C) each

FT-2270 should be sprayed in a smooth pattern, to establish uniform thickness and appearance (crosshatch pattern).

If a top coat is required it must be applied within six (6) hours of application with an aromatic polyurea, polyurethane, or other suitable coating.

**Optional:** Substrate adhesion test should be performed seven days after application of FT-2270.

#### EQUIPMENT CLEAN UP

Immediately clean equipment with an environmentally safe solvent, as permitted by local regulations. Cured or dried material may be removed by mechanical means.

#### SPECIFICATION AND FIELD ASSISTANCE

Contact Freedom Chemical Corporation for specification assistance.

Jobsite visits by Freedom Chemical Corporations employees or its independent agents are for the purpose of determining qualification for warranty.

#### STORAGE

FT-2270 has a shelf life of 1 year shelf life from the date of manufacture, in factory-sealed containers.

Never store directly on concrete surface, always store on pallets.

Storage temperature for part-A and part-B is between 59° F - 77° F (15° C - 25° C), avoid freezing temperatures.

Keep containers sealed tightly to eliminate any condensation, moisture, or water contamination in part-A or part-B.

#### LIMITATIONS

The end user should check the suitability of this product prior to its application.

Excess moisture vapor in concrete slabs may result in primer and/or coating to delaminate, discolor or cause improper curing.

Recoat FT-2270 within 0 – 6 hours of previous coat.

Do not open until ready to use.

Freedom Chemical assumes no liability for substrate defects.

Substrates that have previously been coated are subject to absorption, which may affect the adhesion of a new coating.

High temperatures and humidity can significantly affect pot life and the cure time.

Low temperatures and humidity can extend the cure time.

#### WARNING

FT-2270 contains Isocyanates.

#### TECHNICAL DATA

MIX RATIO BY VOLUME .....	1A: 1B
GEL TIME @ 150° F (66° C).....	18-25 SECONDS
TACK FREE (DEPENDS ON THICKNESS & SUBSTRATE TEMPERATURE).....	90 SECONDS
RECOAT TIME.....	0 - 6 HOURS
VISCOSITY AT 150° F (66° C), BROOKFIELD:	
PART-A .....	900-1200 CPS
PART-B .....	200-500 CPS
DENSITY (SIDE A & B COMBINED).....	1.023 LBS/GAL
SHORE HARDNESS, ASTM D-2240.....	70 A
TENSILE, ASTM D-412 .....	3506 PSI
ELONGATION, ASTM D-412.....	721%
TEAR, ASTM D-412.....	402 PLI
TOUGHNESS, ASTM D-412 .....	11650 PSI
WATER VAPOR PERMEABILITY, ASTM E-96 .....	0.345 P/INCH
100% SOLIDS/VOC CONTENT .....	0 G/L
SPECIFIC GRAVITY ASTM D-1475-98	
PART A.....	1.10-1.30 G/CC
PART B.....	1.00-1.20 G/CC
RECOMMENDED APPLIED THICKNESS.....	>2 MM
RETURN TO SERVICE: FOOT TRAFFIC.....	1 HOUR
RETURN TO SERVICE: FULL SERVICE .....	24 HOURS
TABER ABRASION RESISTANCE, ASTM D-3389 (H18 WHEEL, 1000 CYCLES, 1 KG LOAD) (MAXIMUM).....	349 MG LOSS
WATER ABSORPTION, ASTM D-543 (MAXIMUM 73° F (23° C), 24 HOURS).....	<1%
IMPACT RESISTANCE (ASTM D-2794).....	PASSED
PULL-OFF STRENGTH (MINIMUM), ASTM D-4541: INTER-COAT ADHESION (WITHIN RECOAT TIME).....	EXCELLENT
CONCRETE (PRIMED), SUBSTRATE FAILURE OCCURRED.....	>800 PSI
STEEL (90 UM BLAST PROFILE) PRIMED .....	>1200 PSI
LINEAL SHRINKAGE .....	1 – 2%
FLEXIBILITY (1/8" 3MM MANDREL BEND TEST), ASTM D-552... PASSED	

NOTE: PHYSICAL PROPERTIES MAY VARY ON THE TYPE OF SPRAY EQUIPMENT USED. THE END USER SHOULD CHECK THE SUITABILITY OF THIS PRODUCT PRIOR TO ITS USE.

***Incredible Stuff, Friendly People and Exceptional Service™***

LIMITED WARRANTY: Read all information in the product data sheets, and material safety data sheets (MSDS) before applying material. Product information and instructions are subject to change without notice. Contact your Freedom Chemical Corporation agent or visit our website for current product information and instructions. Products manufactured by Freedom Chemical Corporation are free of defects and will meet Freedom Chemical Corporations current published physical properties. There are no other warranties given by Freedom Chemical Corporation of any kind implied, or expressed, including any warranty of fitness for a particular purpose, and/or merchantability in connection with this product.

DISCLAIMER: The data and information contained herein doesn't create a material or sales specification. The information contained in this data sheet does not guarantee that any hazards listed herein are the only one(s) which may occur. Product and application instructions are provided for the purpose of establishing a general profile and that they will meet Freedom Chemical Corporations current published physical properties. Freedom Chemical Corporation makes no claim as to the accuracy of the information, but every effort has been made to ensure the accuracy of information contained in the Technical Datasheet. Reproduction of the information in this document, either as a whole or in part, is forbidden unless written permission has been obtained from Freedom Chemical Corporation.

12026 CENTRALIA ROAD, SUITE C, HAWAIIAN GARDENS, CA 90716 • (562) 343-9697 • FAX (562) 343-9327  
GEORGIA • (678) 259-9283 • [www.freedomchemicalusa.com](http://www.freedomchemicalusa.com) • © OCTOBER 2011 FREEDOM® CHEMICAL CORPORATION