



FREEDOMTUFF® PRODUCT INFORMATION BULLETIN

FREEDOMTUFF® 2216 is a fast setting, rapid curing, two-component modified aromatic spray polyurea, used as a general-purpose protective coating, that is flexible, abrasion, and impact resistant. It forms a continuous seamless membrane of a desired thickness on concrete, metal, fiberglass, and geotextile fabrics. Its quick gel and set time allow for single or multiple applications without appreciable sagging and is relatively insensitive to moisture, allowing application in most temperatures.

ADVANTAGES

- ✦ 0 VOC's - 100% solids
- ✦ ASTM C836 Approved
- ✦ Meets the NACE 6A198 and PDA standards of a pure polyurea
- ✦ No noxious odors
- ✦ No primer for carbon or mild steel metals
- ✦ Thermal stability – excellent
- ✦ USGBC LEED, EQ Credit 4.2: Low-emitting VOC Compliant Materials
- ✦ Withstands constant water immersion

USES

- ✦ Podium Decks
- ✦ Beverage/Food Processing Plants/Cold Storage Facilities
- ✦ Secondary Containment
- ✦ Amusement Parks/Entertainment
- ✦ Planters/Tunnels/Underground Vaults
- ✦ Mining/Timber/Pulp Mills

PROFESSIONAL USE ONLY

Read and understand all the information contained in the Product Information Bulletin's, SDS's and product labels prior to starting any project. Nothing contained in any of Freedom® Chemical Corporation's materials relieves the end user of the obligation to read and follow the warnings and instructions for each of Freedom® Chemical Corporation's products.

PREPARATION

Concrete should be cured for 28 days (less than 28 days a Moisture Vapor Reducing primer maybe required) prior to product application and have at least 3000 psi compressive and 220 psi tensile strength.

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 established that correct surface preparation is the most important factor affecting the total success of surface treatment. Surfaces will be clean, dry, and sound, the presence of even small amounts of surface contaminants, dust, efflorescence, laitance, salts, curing compounds, dirt, oil, form release agents, and other foreign matter can physically impair and prevent coating adhesion to the substrate.

Shot Blast concrete between CSP 3-6

Profile steel between 4-6 mils

Grinding is permitted only in areas that are inaccessible to shot blasting equipment.

COLOR

Black, Grey and Neutral – add color to side B only. Non-standard colors available upon request.

FreedomTuff® aromatic polyurea's are UV stable – but are known to darken or change 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 RATES

Freedom® Chemical Corporation's coverage rates for all products are approximate and vary based on type of substrate, substrate porosity and roughness.

1 gallon (3.79 liters) of FreedomTuff® polyurea 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

52 gallons (196.84) Part-A (Isocyanate) and 52 gallons (196.84 liters) Part-B (Resin) packaged in 55 gallons (208.19liter) drums.

PRIMER

Select appropriate primer from individual Product Information Bulletin's. FreedomTuff® primer is required on all substrates, except on properly prepared steel (immersion requires primer).

MIXING

Do not mix partial containers of multi-component materials.

Do not dilute under any circumstances.

Adequately blend FreedomTuff® polyurea's Part-B (Resin) with air driven power tools until the mixture and color is consistent making sure not to encapsulate any air.

APPLICATION

For optimum results proceed with application while air and substrate temperatures are between 32° F (0° C) and 104° F (40° C) 6° (-14.44° C) above the dew point and rising.

FreedomTuff® polyurea's are applied using a plural component, high pressure 1:1 ratio heated, spray equipment.

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.

Proportioner Conditions:

- Capacity minimum 20 lbs. per minute
- Static pressure 2800 –3000psi
- Spraying pressure 2500psiminimum
- Pressure balance 100 variance desirable
- 300 psi variance maximum

- Temperatures preheaters & hose minimum 150°F (65.56° C)
NOTE: Preheaters for Part A and Part B may require adjustment to achieve optimum mix. Tip size of the gun may also require change based on spray conditions.

FreedomTuff® polyurea's should be sprayed in a smooth pattern, to establish uniform thickness and appearance (crosshatch pattern).

When a FreedomTuff® polyurea is applied in sections, each application must overlap the previous one within 0 – 6 hours by a minimum four (4") to a neat straight line.

Recoat window is within 0-6 hours of application, if not recoated within 0-6 hours, sand, prime and re-apply FreedomTuff® Polyureas.

If a topcoat is required, it must be applied within six (6) hours of application, FreedomTuff® coating.

SPECIFICATION AND FIELD ASSISTANCE
Contact Freedom® Chemical Corporation for assistance.

Jobsite visits by Freedom® Chemical Corporation's employees or its independent agents are solely for determining qualification for warranty.

CONTAINMENT SPILLS AND LEAKS
All secondary containment spills and leaks must be cleaned up in accordance with local, state and federal regulations.

DISPOSAL
All Spilled material, unused contents of containers, empty containers and secondary containment spills and leaks must be cleaned up in accordance with local, state and federal regulations.

LIMITATIONS
Do not place coating over metal pan decks vented or unvented, split slab membranes, or other locations containing trapped moisture without prior written approval from Freedom® Chemical Corporation.

The end user should check the suitability of this product and the substrate prior to its application. Freedom® Chemical Corporation 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.

FreedomTuff® Polyurea's have a shelf life of 1 year from the date of manufacture, in factory-sealed containers.

Excess moisture vapor in concrete slabs may result in the polyurea to delaminate, discolor or cause improper curing.

PRODUCT QUALITY AND STORAGE
Shipping and storage temperatures for Part-A and Part-B is between 65° F - 90° F (18° C - 32.22° C) at or below 50% Relative Humidity, avoiding freezing temperatures. If shipping or storage temperatures should fall below 65°F (18°C), some crystallization could result. Unless proper action is taken to re-form the original solution, subsequent dimerization will proceed quickly and will deteriorate the assay of the product.

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

Do not open until ready to use and keep containers sealed tightly.

TESTING
Substrate adhesion test should be performed seven days after application. All testing should be performed by a qualified testing agency. Freedom® Chemical Corporation is not responsible for testing.

FREEDOMTUFF® 2216 TYPICAL PROPERTIES

MIX RATIO BY VOLUME	N/A	1A:1B
HARDNESS: SHORE A	ASTM D-2240	95 (+/- 5)
TEAR RESISTANCE, DIE C	ASTM D-624	452 PIL
TENSILE STRENGTH	ASTM D-412	2535 PSI
ELONGATION	ASTM D-412	353%
SOLIDS	ASTM D-6511	100%
VISCOSITY AT 75°F (24°C)	BROOKFIELD	PART A 1000 - 1400 CPS PART B 300 - 600 CPS
VOLATILE ORGANIC COMPOUNDS	ASTM D-6511	0 LB/GALLON, 0 GRAMS/LITER
GEL TIME @ 150° (66° C)	(THICKNESS AND SUBSTRATE TEMP. SENSITIVE)	7 - 9 SECONDS
TACK FREE TIME	(THICKNESS AND SUBSTRATE TEMP. SENSITIVE)	12 - 15 SECONDS
WATER VAPOR PERMEABILITY	ASTM E-96	0.062 PERMS
WATER ABSORPTION	ASTM D-471 (MAX 23° C, 24 HOURS)	< 0.5%
COLD LIQUID APPLIED MEMBRANE	ASTM C 835	PASS / APPROVED
RESISTANCE TO WEATHERING	ASTM G-23, 3000 HOURS EXPOSURE	NO CRACKING OR BLISTERING

Incredible Stuff, Exceptional Service, and Friendly People™

Read all the information in this product information bulletin, and material safety data sheet (MSDS) before applying any material. The information contained herein is for purposes of identifying the product and does not constitute a warranty or guaranty that the product will conform to this description. Product specifications and performance will vary depending on application methodologies, raw materials and other factors. All published information and specifications are subject to change without notification. Technical data shown in product data sheets are typical but reflect laboratory test procedures conducted in laboratory conditions. Actual field performance and test results will depend on installation methods and site conditions. Field test results will vary due to critical job site factors. All recommendations, statements and technical data contained in this data sheet are based on tests we believe to be reliable and correct, but accuracy and completeness of said tests are not guaranteed and are not to be construed as a warranty or guaranty of any kind. Satisfactory results depend upon many factors beyond the control of Freedom® Chemical Corporation. User shall rely on their own information and tests to determine suitability of the product for the intended use and user assumes all risk, loss, damage, expense and liability resulting from their direct use, indirect use or consequential to their use of the product. Freedom® Chemical Corporation shall not be liable to the buyer or any third party for any injury, loss or damage directly or indirectly resulting from use or inability to use the product. Products manufactured by Freedom® Chemical Corporation are free of defects for a period of one (1) year, liability and buyer's remedy under this limited warranty shall not exceed the purchase price of the materials in question. † Freedom® Chemical and FreedomTuff® are trademarks registered in the US Patent and Trademark Office. † The marks of Freedom® Chemical Corporation, its divisions, slogans, emblems, other marks appearing in this document are the trademarks and/or service marks of Freedom® Chemical Corporation, its subsidiaries, affiliates or licensors Copyright© January 2019 Freedom® Chemical Corporation. All Rights Reserved.