



FREEDOMTUFF® PRODUCT INFORMATION BULLETIN

FREEDOMTUFF® 4312 TX is a 100% solids two-component hand applied aromatic polyurethane used as a protective or waterproof coating with good chemical and abrasion resistance, its designed for use as a repair material. FreedomTuff® 4312 TX is used vertically and horizontally on concrete, steel, metal, and polyurea surfaces. Used with the FreedomTuff® GuardianGreen™, GuardianDeck™, Guardian-Dos™, Guardian-ST™, Guardian-WF™ and the Guardian-PD™. Its quick gel and set time make it convenient for multiple passes.

ADVANTAGES

- ✦ Excellent abrasion resistance and chemical resistance
- ✦ Can be applied in vertical applications
- ✦ Excellent for low temperature applications
- ✦ Meets USDA criteria
- ✦ No noxious odors
- ✦ 0 – VOC's, 100% solids
- ✦ Open to pedestrian traffic in 4 hours, vehicular the next day at 75° Fahrenheit (23.88° C) and 50% humidity
- ✦ Thermal Stability – Excellent
- ✦ USGBC LEED, EQ Credit 4.2 AND 4.3: Low-emitting VOC Compliant Materials

USES

- ✦ Repair for Polyurea
- ✦ Sacrificial Waterproofing
- ✦ Commercial, Retail, Institutional
- ✦ Parking Structures, Rooftop Garages

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 relieve 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 may be 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 - 5.

Profile steel between 4-6 mils.

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

COLOR – Amber, Grey, Black

COVERAGE RATE

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

PACKAGING

3 Gallon Kit: 1 gallon part A and 2-gallon part B

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.

FreedomTuff® 4312 TX Part-B should be mixed individually prior to combining, add Part-A to Part-B while mixing, using a mechanical mixer at medium speed making sure not to encapsulate any air. Mix until a homogeneous mixture and color is obtained.

FreedomTuff® 4312 TX should be used within 8 - 12 minutes of mixing. FreedomTuff® 4312 TX has a false gel at ~15 seconds which allows for vertical application without sagging.

APPLICATION

Apply 1 gallon (3.785 liters) of FreedomTuff® 4312 TX at 50 to 300 square feet per gallon to achieve a desired repair and color using a flat edge squeegee or trowel. Vertical application may require more than one coat to achieve the desired thickness.

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.

DISPOSAL

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

LIMITATIONS

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.

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 polyurea's.

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® 4312 TX TYPICAL PROPERTIES

MIX RATIO BY VOLUME	N/A	1A:2B
HARDNESS: SHORE D	ASTM D-2240	58
TEAR RESISTANCE, DIE C	ASTM D-412	270 PIL
TENSILE STRENGTH	ASTM D-412	2100 PSI
ELONGATION	ASTM D-412	140%
BOND STRENGTH (SUBSTRATE PRIMED WITH FT-6160)	ASTM D4541	CONCRETE FAILED >435 PSI
VOLATILE ORGANIC COMPOUNDS	ASTM D-2369	0 LB/GALLON, 0 GRAMS/LITER, 100% SOLIDS
POT LIFE @ 68° F (20° C)	N/A	8 - 12 MINUTES (note: false gel at 15 sec)
RETURN TO FULL SERVICE @ 68° F (20° C)	N/A	4 HOURS
VISCOSITY @77° F (25° C)	N/A	PART B RESIN 660 CPS PART A ISO 60 CPS
FLEXIBILITY (-40° F; 180° BEND)	PASS	
TABOR ABRASION MG (1000G:1000 CYCLES CS-17)	ASTM D-4060-10	34

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 that the product will conform to this description. Product specifications and performance will vary depending on application methodologies, raw materials and other factors. Product information bulletins, recommendations, statements, and information contained herein 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, either expressed or implied. It is the user's responsibility to satisfy themselves, by their own information and tests, to determine suitability of the product for their own intended use, application and job situation and the user assumes all risk and liability resulting from their own use of the product. We do not suggest or guarantee that any hazards listed herein are the only ones that may exist. Neither seller nor manufacturer shall be liable to the buyer or any third party for any injury, loss or damage directly or indirectly resulting from use of, or inability to use, the product. Recommendations or statements, whether verbal or in writing, other than those contained herein shall not be binding upon the manufacturer, unless in writing and signed by a corporate officer of Freedom® Chemical Corporation. Typical properties and application information is provided for the purpose of establishing a general profile of the material and proper application procedures. Performance results were obtained in a controlled environment and Freedom® Chemical Corporation makes no claim that these tests or any other tests accurately represent all environments. 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© March 2015 Freedom® Chemical Corporation. All Rights Reserved. All published information is subject to change without notice.