TECHNICAL DATA SHEET

DESCRIPTION

Ferro Tuff™ is a ready to use metallic floor hardener comprised of clean and well graded iron aggregates, special additives and portland cement. Ferro Tuff™ provides greater impact resistance than other types of dry shake hardeners. Ferro Tuff™ is available in a natural concrete color and in a non rusting formula.

USE

Ferro Tuff™ is a dry shake floor hardener designed for application to freshly cast horizontal concrete to harden and densify the surface. Ferro Tuff™ is designed to provide an extremely dense, abrasion resistant and ductile floor for heavy duty applications. The ductile iron aggregate helps prevent spalling, deterioration and surface abrasion. Applications for Ferro Tuff™ include airplane hangars, manufacturing plants including car, truck and tractor assembly plants, processing plants, warehouses, loading docks, foundries, smelters, generating stations, industrial plants, etc.

FEATURES

- High impact resistant floor
- Ductile metal aggregates resist high point loading
- Recommended for steel-wheeled traffic
- Up to 8 times the abrasion resistance of normal concrete
- Long service life/low maintenance
- Resistant to dusting, spalling and deterioration
- A non rusting formulation is also available.

PROPERTIES

100% Well graded, clean ground cast iron aggregate
Specific Gravity – 7.0 (Metallic Aggregate)
Compressive Strength – ASTM C-109 – 2" cubes (5.1 cm)
7 days – 10,000 psi (68.9 MPa)
28 days – 12,000 psi (82.7 MPa)
Abrasion Resistance –
CRD-C 52 ASTM C-944 Average Depth of Wear
1/2 hour – 0.003 in. (0.076mm)
1 hour – 0.009 in. (0.228mm)
For Heavy duty service Class 5 and 6 industrial floors ACI Manual of Concrete Practice

Note: The data shown is typical for controlled laboratory conditions. Reasonable variation from these results can be expected due to interlaboratory precision and bias. When testing the field mixed material, other factors such as variations in mixing, water content, temperature and curing conditions should be considered.

ESTIMATING GUIDE

Medium Duty: 1.0 – 1.5 lbs /sq. ft. (5.0 – 7.6 kg /sq m)
Heavy Duty: 1.5 – 2.0 lbs / sq. ft. (7.6 – 10.1 kg /sq m)

PACKAGING

Product	Item #	Packaging	Size	
			Lb.	kg
Ferro Tuff™ Natural	67550	Bags	50	22.67
Ferro Tuff™ Non-Rusting	67567	Bags	50	22.67

STORAGE

Store in a cool, dry area free from direct sunlight. Shelf life of unopened bags, when stored in a dry facility is 12 months. Excessive temperature differential and /or high humidity can shorten the shelf life expectancy.

APPLICATION

ACI Manuals of Concrete Practice to be followed:
ACI 302 Guide for Concrete Floor and Slab Construction
ACI 305 for Hot Weather Concreting.
ACI 306 for Cold Weather Concreting.
ACI 308 Curing of Concrete
ACI 309 Consolidation of Concrete

Mock Up: It is recommended that a minimum 10' x 10' (3.0 m x 3.0 m) test placement (mock up) be made using the same concrete mix proportions, method of placement and finishing procedures and the same conditions as anticipated on the project. The mock up sample area should be to assure acceptance of installation and appearance.

PLACEMENT

Placement of Base Concrete: Concrete slump is NOT to exceed 5 in. (12.7 cm) without water reducer. Gap grading of concrete aggregate in the mix design should be avoided. The use of air entraining agents, fly ash, fibers, calcium chloride and water reducers should be avoided. Total air content of normal weight concrete should not exceed 3% except when service conditions expose the concrete to freeze/thaw cycling and the slab is not hard-trowel finished. Contact Dayton Technical Services Department for more specific recommendations concerning concrete mix designs. Only place when ambient temperature is between 40°– 90°F (4°– 32°C).

General Application Procedure: The industry standard application procedure for dry shakes is to apply them in two passes, 2/3 by weight the first pass and 1/3 the weight on the second last pass. Broadcast 1ST pass onto the concrete after the concrete bleed water has dissipated, and immediately after the concrete appears to have lost its surface sheen. After broadcasting, let the dry shake set to absorb bleed water and wet out until all of the shake has darkened uniformly and appears the same color. The wet out time will be affected by ambient job-site conditions, and slightly shorter or longer times may be necessary. Avoid clumping material on the surface. After

material has darkened and is uniform in color, then float with weighted wood bull floats or highway straight edge to embed into the concrete surface and remove any surface irregularities. Wait until the concrete will support the weight of a power trowel using float shoes or a pans (combination blades should not be used) and break open the surface across the placement in the short direction. Immediately apply the remaining 1/3 uniformly at right angles to the first application. The second application does not have to be applied at right angles to the first application if a mechanical spreader is used. Early setting around the slab edges will occur and should be watched closely to properly time the floating operation. After the second application has absorbed the surface water and uniformly darkened, float the surface with a finishing machine equipped with float shoes. When the surface can support the weight of a power trowel and finisher, then, power trowel multiple times using trowel blades or pans to thoroughly embed the dry shake in the concrete for a smooth finish. Initially, the trowel blades should be set as flat as possible to avoid digging into the surface. The trowel blades may be gradually raised to slowly close the surface. Proper and uniform finishing is essential at this point. Do not rewet and do not overwork. Prevent closing the slab too early as blistering or delamination may occur. Do not use combination blades. Surface may be broomed or textured.

During hot, dry, or windy conditions, use the AquaFilm Concentrate J74 or the AquaFilm J74RTU evaporation reducer, in accordance with the instructions in their current technical data sheet, to reduce moisture loss and extend concrete workability.

CURING

Ferro Tuff™ Non-Rusting: Immediately after final finishing and evaporation of bleed water apply a Dayton Superior membrane forming curing compound or cure and seal. Wet curing methods compliant with ACI 308 may also be employed.

Ferro Tuff™ Natural: Immediately after final finishing and evaporation of bleed water apply a Dayton Superior cure and seal such as Cure & Seal WB (J-18), Cure & Seal 309 EF or the Cure & Seal 1315 EF at a coverage rate not to exceed 300 sq. ft. /gal. (7.4 sq m /L). Do not use water cure, wet burlap cure, or waterproof paper to cure the Ferro Tuff™ as discoloring may result.

CLEAN UP

Use clean water. Clean up all tools and equipment before Ferro Tuff™ has set. Hardened material will require abrasive methods of removal.

LIMITATIONS

FOR PROFESSIONAL USE ONLY

Install only when the ambient temperature is between 40°–90°F (4°– 32°C).

Do not use on floors that will be exposed to acids known to deteriorate concrete.

Air entrainment should not exceed 3%.

Do not use on floors exposed to standing water or deicing salts. (For those application use the Dayton Superior Emery Tuff or the Ferro Tuff Non-Rusting).

Do not add other cements or additives to Ferro Tuff™.

PRECAUTIONS

READ MSDS PRIOR TO USING PRODUCT

- Product contains Crystalline Silica and Portland Cement, Avoid breathing dust – Silica may cause serious lung problems
- Use with adequate ventilation
- Wear protective clothing, gloves and eye protection (Goggles, Safety Glasses and/or Face Shield)
- Keep out of the reach of children
- Do not take internally
- In case of ingestion, seek medical help immediately
- May cause skin irritation upon contact, especially prolonged or repeated. If skin contact occurs, wash immediately with soap and water and seek medical help as needed
- If eye contact occurs, flush immediately with clean water and seek medical help as needed
- Dispose of waste material in accordance with federal, state and local requirements

MANUFACTURER

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Customer Service: 888-977-9600
Technical Services: 866-329-8724
Website: www.daytonsuperior.com

WARRANTY

Dayton Superior Corporation ("Dayton") warrants for 12 months from the date of manufacture or for the duration of the published product shelf life, whichever is less, that at the time of shipment by Dayton, the product is free of manufacturing defects and conforms to Dayton's product properties in force on the date of acceptance by Dayton of the order. Dayton shall only be liable under this warranty if the product has been applied, used, and stored in accordance with Dayton's instructions, especially surface preparation and installation, in force on the date of acceptance by Dayton of the order. The purchaser must examine the product when received and promptly notify Dayton in writing of any non-conformity before the product is used and no later than 30 days after such non-conformity is first discovered. If Dayton, in its sole discretion, determines that the product breached the above warranty, it will, in its sole discretion, replace the non-conforming product, refund the purchase price or issue a credit in the amount of the purchase price. This is the sole and exclusive remedy for breach of this warranty. Only a Dayton officer is authorized to modify this warranty. The information in this data sheet supersedes all other sales information received by the customer during the sales process. THE FOREGOING WARRANTY SHALL BE EXCLUSIVE AND IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, AND ALL OTHER WARRANTIES OTHERWISE ARISING BY OPERATION OF LAW, COURSE OF DEALING, CUSTOM, TRADE OR OTHERWISE.

Dayton shall not be liable in contract or in tort (including, without limitation, negligence, strict liability or otherwise) for loss of sales, revenues or profits; cost of capital or funds; business interruption or cost of downtime, loss of use, damage to or loss of use of other property (real or personal); failure to realize expected savings; frustration of economic or business expectations; claims by third parties (other than for bodily injury), or economic losses of any kind; or for any special, incidental, indirect, consequential, punitive or exemplary damages arising in any way out of the performance of, or failure to perform, its obligations under any contract for sale of product, even if Dayton could foresee or has been advised of the possibility of such damages. The Parties expressly agree that these limitations on damages are allocations of risk constituting, in part, the consideration for this contract, and also that such limitations shall survive the determination of any court of competent jurisdiction that any remedy provided in these terms or available at law fails of its essential purpose.