

TECHNICAL DATA SHEET

DESCRIPTION

Emery Tuff is a ready to use shake-on floor hardener comprised of a blend of 100% pure emery, special additives and portland cement. Emery Tuff is a material that is extremely hard, tough and abrasion resistant. As a result, proper installation of Emery Tuff will impart very long life and extremely high durability to concrete surfaces. Emery Tuff is completely non corrosive and rust free and can be used inside or outside. Emery Tuff offers a superior alternative to metallic floor hardeners. It will provide a harder, denser and more abrasion resistant floor. Emery Tuff is a concrete gray color.

USE

Emery Tuff is a dry shake floor hardener designed for application to freshly cast horizontal concrete to harden and densify the surface. Applications for Emery Tuff include: industrial plants, foundries, automotive assembly plants, loading docks, smelters, warehouses, service garages, processing plants, generating stations, sewage and water treatment plants, resource recovery plants, paper mills, etc.

FEATURES

- Dramatically increases the life of concrete floors over that of untreated concrete
- Non-rusting (typical metallic hardeners cannot be used in a wet environment)
- Superior wear and abrasion resistance to metallic shake-on hardeners
- Easy to apply – less labor intensive than metallic hardeners
- Resists penetration by grease, oil, and contaminants
- Greater depth per pound of Emery Tuff vs. metallic hardeners
- Resists dusting, spalling and deterioration
- Interior/exterior applications

PROPERTIES

100% pure emery/corundum consisting of a minimum of 58% aluminum oxide, a minimum of 24% iron oxide and no more than 4% silica

Moh hardness – 8 to 9 (Diamond is a 10)

Specific gravity – 3.5

For heavy duty service Class 5 and 6 Industrial floors (ACI Manual of Concrete Practices)

Compressive Strength – ASTM C-109, 2 in. (5.1cm) cubes 12,000 psi (82.7 MPa) in 28 days

Abrasion Test – ASTM C-944 – “Standard Test Method for Abrasion Resistance of Concrete or Mortar” test performed with a doubling of the applied load and with doubling the time of abrasion

Average weight loss in grams – 0.4

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

Coverage:

Medium Duty Floors: 1.0 lbs./sq. ft. (5.0 kg /sq. M)

Heavy Duty Floors: 1.0-1.5 lbs./sq. ft. (5.0 – 7.6 kg /sq. M)

Light Reflective Floors: 1.5-2 lbs./sq. ft. (7.6-10.1 kg /sq. M)

Packaging

Product	Product Code	Package	Size	
			lbs	kg
Emery Tuff Natural	67510	Bag	50	22.67
Emery Tuff Light Reflective	67525	Bag	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. The ACI Manuals of Concrete Practice that are to be followed:

ACI 302 Guide to Concrete Floors and Slab Construction

ACI 305 Hot Weather Concreting

ACI 306 Cold Weather Concreting

ACI 308 Curing of Concrete

ACI 309 Consolidation of Concrete

expectancy.

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 applicator, concrete mixture, 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). 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).

TECHNICAL DATA SHEET**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. Distribution of the dry shake hardener by mechanical spreaders (i.e. Morrison or Somero) is the recommended method. Broadcast first pass onto the concrete before bleeding occurs; do not broadcast directly into bleed water. After broadcasting, let the dry shake 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.

Light Reflective:

Unlike the Emery Tuff Natural, the Emery Tuff Light Reflective is to be broadcast after the concrete bleed water has dissipated, and immediately after the concrete appears to have lost its surface sheen. Broadcasting the light reflective dry shake before bleed water dissipation will dull, darken, or gray-up the color, as the dry shake can somewhat mix or integrate with the concrete's top surface cement paste. The remaining application of the hardener is in the same manner as the Emery Tuff Natural up until the final finishing. Emery Tuff Light Reflective applications should not be burnished or hard troweled as discoloration may occur. Plastic or stainless steel blades are recommended for the light reflective applications; plastic being the optimal choice. The use of metal shoes may cause the surface to darken.

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.

CLEAN UP

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

CURING

Emery Tuff Natural: Immediately after final finishing, and after the surface water has disappeared, apply a Dayton Superior membrane forming curing compound or cure and seal. Wet curing methods compliant with ACI 308 may also be employed.

Emery Tuff Light Reflective: Immediately after final finishing, and after the surface water has disappeared, apply a Dayton Superior cure and seal such as Cure & Seal 309 J18, 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 Emery Tuff Light Reflective as mottling or discoloring may

LIMITATIONS**FOR PROFESSIONAL USE ONLY**

Install only when the ambient temperature is between 40° – 90°F (4° – 32°C). Not recommended for steel-wheeled traffic and high point loading. For steel wheeled traffic and/or for high point loads use Ferro Tuff™. Do not use on floors that will be exposed to acids known to deteriorate concrete. Air entrainment should not exceed 3%. Do not add other cements or additives to Emery Tuff. Prepackaged material segregates while in the bag, thus when mixing less than a full bag it is recommended to first agitate the bag to assure it is blended prior to sampling.

PRECAUTIONS**READ SDS 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

TECHNICAL DATA SHEET**MANUFACTURER**

Dayton Superior Corporation
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Customer Service: 888-977-9600
Technical Services: 877-266-7732
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.