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Published technical data, instructions, and pricing are subject to change without notice. Contact your Tnemec technical representative for current technical data, instructions, and pricing. Warranty information: The service life of Tnemec’s coatings will vary. For warranty, limitation of seller’s liability, and product information, please refer to Tnemec’s Product Data Sheets at www.tnemec.com or contact your Tnemec Technical Representative. 07/17

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**INNOVATION IN EVERY COAT.™**
1.0 Introduction

The purpose of this guide is to familiarize applicators with the basic information necessary for properly bidding, ordering and installing Tnemec’s Ultra-Tread floor topping. Prior to starting work, please read this entire guide carefully. If you have questions, contact your Tnemec representative or call 1-800-TNEMEC1. It is important that you obtain answers to any questions before beginning the process. Due to the complex application and potential exposure to extreme environments, only qualified applicators should install Ultra-Tread. Please review all pertinent Product Data Sheets as well as Detail Drawings.

Also, reference the project specifications and compare them with this guide and the Product Data Sheets. Resolve any inconsistencies prior to starting work.

This application guide cannot cover every issue that may be encountered in the field. If issues arise that are not addressed in this guide or the Product Data Sheets, please contact your Tnemec representative or call 1-800-TNEMEC1 for assistance.

2.0 Precautions

- Material should be stored between 35°F (2°C) and 110°F (43°C). Material should be stored at temperatures between 70°F and 90°F (24°C and 32°C) for at least 48 hours prior to use.
- Do not install material if substrate temperatures are below 40°F (4°C) or above 85°F (29°C).
- Do not install if relative humidity is above 85%.
- Do not attempt to split kits or alter Part C aggregates.
- Do not mix material by hand.
- Due to the limited working time of the material, adequate manpower should be considered.
- Part B is moisture sensitive. Do not open until ready to mix.
- Part C is moisture sensitive and should be stored in a dry area.
- Ensure substrate is clean, dry and free of contaminants.

3.0 Products and Packaging

3.1 SERIES 242 ULTRA-TREAD S

Series 242 is a low odor, slurry applied floor topping designed for monolithic applications in abusive areas. It provides superior performance to other flooring systems such as acid brick, quarry tile and most polymer flooring systems. Series 242 provides excellent chemical resistance and withstands thermal shock due to hot liquids and aggressive cleaning procedures. It is available in two standard colors--00GR gray and 00RD red. Black, blue, beige, and green are also available. Additional lead time may apply.

3.1.1 SERIES 242 PACKAGING

<table>
<thead>
<tr>
<th>PART A (Partially Filled)</th>
<th>PART B (Partially Filled)</th>
<th>PART C (Aggregate)</th>
<th>PART D (Colorant - Powder)</th>
<th>MIXED YIELD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - 1 gallon jug</td>
<td>1 - 1 gallon jug</td>
<td>1 - 44 lb. bag</td>
<td>1 bag</td>
<td>3.6 gal.</td>
</tr>
</tbody>
</table>

Theoretical yield (applied neat): 31 sq. ft. per mixed kit at 3/16" 47 sq. ft. per mixed kit at 1/8"

*Substrate condition, application and waste may vary and can affect coverage.

3.2 SERIES 243 ULTRA-TREAD V

Series 243 is a vertical/coving material for application where vertical trowelling, such as trench walls, vertical faces of equipment pads or coving, is required. A brush or short nap roller, wetted with water and shaken out, may be used to seal and provide a smoother appearance to the mortar. Series 243 is available in two standard colors--00GR gray and 00RD red. Black, blue, beige, and green are also available. Additional lead time may apply.

3.2.2 SERIES 243 PACKAGING

<table>
<thead>
<tr>
<th>PART A</th>
<th>PART B</th>
<th>PART C (Aggregate)</th>
<th>PART D (Colorant - Powder)</th>
<th>MIXED YIELD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-1 quart can</td>
<td>1-1 quart jug</td>
<td>1-25 lb. bag</td>
<td>1 bag</td>
<td>1.65 gal.</td>
</tr>
</tbody>
</table>

Theoretical yield: 13 sq. ft. per mixed kit at 3/16"
18-20 lineal feet per mixed kit of 4” rolled radius base

*Substrate condition, application and waste may vary and can affect coverage.

3.3 SERIES 244 ULTRA-TREAD M

Series 244 is a seamless mortar floor topping designed to resist chemicals, organic acids and thermal shock due to hot liquids, cleaning procedures and severe temperature fluctuations. It is applied between 1/4” to 1/2” using a screed/trowel method and loop rolled to a smooth, even surface. Series 244 is available in two standard colors--00GR gray and 00RD red. Black, blue, beige, and green are also available. Additional lead time may apply.

3.3.1 SERIES 244 PACKAGING

<table>
<thead>
<tr>
<th>PART A (Partially Filled)</th>
<th>PART B (Partially Filled)</th>
<th>PART C (Aggregate)</th>
<th>PART D (Colorant - Powder)</th>
<th>MIXED YIELD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - 1 gallon jug</td>
<td>1 - 1/2 gallon jug</td>
<td>1 - 50 lb. box</td>
<td>1 bag</td>
<td>3.24 gal.</td>
</tr>
</tbody>
</table>

Theoretical yield: 17 sq. ft. per mixed kit at 3/16" 21 sq. ft. per mixed kit at 1/4"

*Substrate condition, application and waste may vary and can affect coverage.

3.4 SERIES 245 ULTRA-TREAD S

Series 245 is a self-leveling slurry to be applied between ⅛” to 1/2” through the use of notched/gauged equipment such as a notch trowel or gauge rake. The surface may be porcupine or loop rolled smooth or aggregate may be broadcast into it for enhanced slip resistance. Aggregate or colored quartz may be used to achieve a solid color, while blends of colored quartz or decorative flake may be used to provide a more aesthetic, multi-colored or tweed appearance. Series 245 is available in two standard colors--00GR gray and 00RD red. Black, blue, beige, and green are also available. Additional lead time may apply.

3.4.1 SERIES 245 PACKAGING

<table>
<thead>
<tr>
<th>PART A (Partially Filled)</th>
<th>PART B (Partially Filled)</th>
<th>PART C (Aggregate)</th>
<th>PART D (Colorant - Powder)</th>
<th>MIXED YIELD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - 1 gallon jug</td>
<td>1 - 1 gallon jug</td>
<td>1 - 42.5 lb. bag</td>
<td>1 bag</td>
<td>3.6 gal.</td>
</tr>
</tbody>
</table>

Theoretical yield (applied neat): 23 sq. ft. per mixed kit at 1/4" 31 sq. ft. per mixed kit at 3/16"

*Substrate condition, application and waste may vary and can affect coverage.
3.5 SERIES 44-714 ULTRA-TREAD ACCELERATOR

Series 44-714 is a special additive used to increase the cure time of our four component Ultra-Tread products where faster return to service is needed. Series 44-714 has virtually no volatile organic compounds or odor. It may be used with Series 241, 242, 243, 244 and 245.

Due to shortened working time, Series 44-714 is not recommended for use if the substrate is 70°F (21°C) or greater. Do not exceed recommended dosage, reference mixing for more information. Do not exceed 0.25 oz per kit when mixed with Series 243. Use of Series 44-714 may affect flow and leveling properties when used with Series 242 or 245.

3.5.1 SERIES 44-714 PACKAGING

Series 44-714 is available in quarts (0.95 L) or gallon (3.79 L) sizes.

4.0 SURFACE PREPARATION

4.1 PREPARATION OF CONCRETE

Allow new poured-in-place concrete to cure a minimum of 10 days at 75°F (24°C). Verify concrete dryness in accordance with ASTM F 1869 “Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride” (moisture vapor transmission should not exceed twenty pounds per 1,000 square feet in a 24 hour period), F 2170 “Standard Test Method for Determining Relative Humidity in Concrete using in situ Probes” (relative humidity should not exceed 99%), or D 4263 “Standard Test Method for Indicating Moisture in Concrete by the Plastic Sheet Method” (no moisture present). Note: The testing listed above cannot guarantee avoidance of future moisture related problems particularly with existing concrete slabs. This is especially true if the use of an under slab moisture vapor barrier cannot be confirmed or concrete contamination from oils, chemical spills, unreacted silicates, chlorides or Alkali Silica Reaction (ASR) is suspected.

Prepare concrete surfaces in accordance with NACE No. 6/SSPC-SP13 Joint Surface Preparation Standards and ICRI Technical Guidelines. Abrasive blast, shot-blast, or mechanically abrade concrete surfaces to remove laitance, curing compounds, hardeners, sealers and other contaminants and to provide a minimum ICRI-CSP 5 or greater surface profile. Existing concrete should be sound and free of all contaminants. Removal of weak or contaminated concrete prior to installation is required to ensure a strong bond between the concrete and Ultra-Tread floor topping system. Large cracks, voids and other surface imperfections should be filled with a recommended filler or surfacer.

4.2 ALL SURFACES

Must be clean, dry and free of oil, grease and other contaminants. Note: Substrate conditions which can adversely affect the adhesion of Series 242, 244 or 245 include: concrete that is structurally unsound, wet, damp, contaminated, or inadequately profiled at the time of application, absent or inadequate under slab moisture barrier, hydrostatic pressure, Alkali Silica Reaction (ASR), and migration of oils, chemicals, and other contaminants.

4.3 PATCHING

All surface imperfections such as spalls, large cracks and areas requiring keyways, such as drains and terminations, should be detailed prior to the installation of the Ultra-Tread topping. Reference the Series 242, 244 or 245 product data sheet for additional information.

4.4 TERMINATIONS

Any stopping points such as perimeters, drains, trenches, etc., must be keyed to provide anchorage against shrinkage during cure and thermal cycling stress. This is achieved by saw cutting 1/2” wide by 1/2” deep channels into the substrate. When applying Series 244 in larger areas exposed to thermal shock, it may be beneficial to cut additional channels in a grid pattern throughout the substrate being topped. Do not featheredge. Reference the latest version of the StrataShield Standard Detail Drawings.

Note: Preset drains will also require isolation joints to allow for thermal movement of the surrounding substrate.

4.5 CONTROL JOINTS

Control/construction joints should be cleaned out and left exposed. They will assist in acting as anchor keyways in the floor.

4.6 EXPANSION JOINTS

Expansion joints can be considered moving joints and should be honored by placing keyways on either side. Appropriate caulking/sealants should be selected based on the intended use of the area. New expansion joints should be installed to isolate the following areas: load support columns, equipment set in the substrate, preset drains, any areas exhibiting differences in temperature from the surrounding floor such as around ovens and freezers, and when butting up to different flooring materials. Reference the latest StrataShield Standard Detail Drawings.

5.0 MIXING

5.1 SERIES 242, 243, 244 AND 245 ULTRA-TREAD

To mix either Series 243 or 244, use a minimum one horsepower, 60-rpm rotary mortar mixer with at least .5 cubic feet capacity or a variable speed drill 1/2” chuck fitted with a mixing blade (mud blade/box blade type), or equivalent. Never mix more material than can be applied within 15 minutes of initial mixing. For Series 242 or 245, a variable speed drill with a mixing paddle (mud blade/box blade type) or a duo power mixer (i.e. Collomix Xo 55) is recommended. It is also not recommended to mix more than one kit of Series 242 or 245 at a time.

Pour the Part A into mixing container and begin mixing. Slowly add the Part B and let blend until material has a consistent tan color. This should take no more than one minute with a mixer and less than 30 seconds with a drill and mixing paddle. Add Part D colorant and let blend into the mixing liquid until it begins to become a consistent color. Once the colorant has begun to blend into the mixed liquid, gradually add the entire contents of Part C aggregate and mix until material is uniform and no dry aggregate is present. This entire process should take approximately 3 minutes. Exceeding this time frame may adversely affect the material's application characteristics, performance and cured appearance.

NOTE: The entire kit, using all components must be mixed. Mixing less than a full kit can result in miscatalization.

ACCELERATOR: For accelerated cure on low temperature applications, add Series 44-714 Ultra-Tread Accelerator to the Part A component prior to mixing. The proper amount of Series 44-714 is based upon ambient temperature; at 68°F (20°C) with maximum cure time, 3 oz per kit will result in a 4 hour maximum cure time. Note:
Material will set up quickly if not applied immediately after mixing.

**6.0 SCREED AND HAND TROWEL APPLICATION**

**6.1 SERIES 244 ULTRA-TREAD M**

Once the surface has been properly prepared, Series 244 may be mixed and applied using a screed box and hand trowels.

After the material is mixed for the appropriate amount of time, immediately place material into the screed box and slowly pull across the floor. It may help to level the material with a trowel in the box. This will help ensure that the material is laid out evenly. The material can then be trowelled to close and smooth. After troweling, loop roll the surface to help remove trowel marks and further close and smooth the surface.

**7.0 SLURRY APPLICATION**

**7.1 SERIES 242 OR 245 ULTRA-TREAD S**

Once the material is thoroughly mixed, immediately transfer to working area. Pour onto the floor in a thick ribbon and then evenly spread to the appropriate thickness with either a trowel or screed rake. A smoothing blade may be used at this point to further level the material. Once level and even, a wire porcupine roller or loop roller should be used to backroll the material to help facilitate leveling and alleviate imperfections. Backrolling will also help force the aggregate down into the system while working a layer of resin to the surface. If left alone, this layer of resin will help close or seal the surface.

**7.2 NON-SLIP OR DECORATIVE OPTION**

If a textured surface or topcoat is desired, immediately broadcast aggregate, decorative quartz or flake to refusal into the wet Series 242 or 245 surface. Color quartz or decorative flake systems will require an additional broadcast layer to obtain a uniform appearance and texture before applying the desired clear finish coats. This will typically result in a total system thickness of 3/16” to 3/8”. **Note:** Broadcast 30/50 aggregate or colored quartz at a rate of 0.5 lbs per sq ft and decorative flake at a rate of 0.25 lbs or 1/4 lb per sq ft. Excess aggregate, decorative quartz or flake can either be vacuumed or swept off once the material has cured a minimum of 6 hours. Optional topcoats may then be applied to lock in the broadcast aggregate, decorative quartz or flake. Reference product data sheet for various topcoat options.

**8.0 VERTICAL AND COVING**

**8.1 SERIES 243 ULTRA-TREAD V**

The wall must be first primed to improve adhesion and assist in hanging the material on to the wall. Mixing the Part A and B liquids will create a priming material. The two may be mixed together at a 1:1 ratio and brushed on the vertical surface to be trowelled. The primer should be allowed to tack up but not completely dry, approximately 15-30 minutes. Dependent upon the porosity of the vertical surface the primer is being applied to, an additional prime coat may be required to provide a tacky surface. Once the Series 243 kit is mixed, it may be placed on the vertical surface with a trowel. A brush, dampened with water, may be used to seal and smooth the surface of the mortar.

**9.0 CURING**

Series 242, 243, 244 and 245 should be ready to return to light duty service within 8 hours dependant upon temperatures and humidity. This includes decontamination of area as well as dry processing and foot traffic. The material should be allowed to cure an additional 4 hours before being returned to full service where exposed to fork lift traffic and where water and/or chemicals are used. Allow a full 24 hrs. cure when immediate exposure to harsh chemical or steam cleaning is a critical part of the area’s processing/production.

**10.0 CLEANUP**

Clean all tools and equipment immediately with Xylene or MEK.

**11.0 HEALTH & SAFETY**

These products may contain solvents and/or other chemical ingredients. Adequate health and safety precautions should be observed during storage, handling, application and curing. For information regarding these potential hazards associated with these products please refer to the container label or request a Safety Data Sheet from Tnemec Company Inc.. Please direct your inquiries to the attention of our Safety Director.