



TF Structural Deep Concrete Repair Mortar

One-component structural repair mortar

Description

TF Structural Deep is a one-component, interior/exterior structural concrete repair mortar. Designed as a rapid curing repair for use on damaged concrete structures, TF Structural provides a simple solution, with very good long-term durability. TF Structural is used for small to large concrete repairs, large structural rebuilds, or almost anywhere damaged concrete needs a rapid, permanent restoration.

Where to Use

TF Structural Deep is a versatile repair mortar, designed for use on properly prepared concrete substrates. It can be used for small to large concrete repairs, large structural rebuilds, or where damaged concrete needs restoration.

While not limited to specific applications, the following list gives a general guideline for where TF Structural Deep is typically installed.

- Garages, parkades, warehouse floors, loading docks, structural columns and rebuilding concrete structures.
- Areas that require a fast return to service with minimal downtime.
- Sub-zero application with TF Heat additive.
- Concrete surfaces in need of re-sloping, rebuilding, or re-leveling
- Used to repair concrete in preparation for polymer coatings.
- Used in small to large form and pour applications

Features and Expected Benefits

TF Structural Deep requires no primers, no scrub coats, no curing procedures, and has variable mixing ratios. Its unique chemistry gives the worker from 10-40 minutes of working time, while still capable of generating high strengths after 4 hours of curing. Refer to application and cure time sections.

TF Structural Deep offers an extremely fast return to service, even in cold weather applications. It can be applied as thick as needed or as thin as 1/4", while still maintaining its excellent mechanical properties. TF Structural Deep is highly resistant to freeze thaw, salt scaling, abrasion, impact, UV, salts, oil, gas and many other damaging environmental effects.

- No maximum thickness.
- Can be used in thick applications for structural rebuilding.
- Fast curing. Return to service in under 3 hours, if needed.
- Easy to mix with water.
- Superior bond strength to properly prepared concrete.
- High early strength gains.
- Odorless.
- Zero VOC's
- Excellent long term wear resistance.
- Economical and easy to apply.
- Working time and cure time can be adjusted with accelerators and retarders.
- Excellent for deep screeding and leveling projects.
- Can be placed into forms.

Packaging

Part A – 22.68 kg (50 lbs) Bag

Yield

Approximately 0.45 ft³/bag. This will cover approx. 20-30ft² between 1/4" – 1/2" of coverage. (These figures do not allow for surface porosity, profile or wastage) Can be extended with clean dry aggregate up to 30% by volume. Do not use limestone. Extended yield approximately 0.60ft³/bag.

Shelf Life

12 months in original unopened packaging. Store dry between 3°C - 30°C (50°F - 77°F). Avoid storing in humid conditions.

Application Temperature

5°C (41°F) min. / 35°C (95°F) max.

With TF Heat Accelerator: -5°C (23°F) min. / 15°C (59°F) max.

With TF Ice Retarder: 15°C (59°F) min. / 40°C (104°F) max.

If installing at the low or high temperature limits, or outside this temperature range, please contact Terrafuse Inc.

Cure Time

Cure to foot traffic 2 to 4 hours at 23°C (73°F)

Cure to full traffic 12 hours to 24 hours at 23°C (73°F)

Surface Preparation

Concrete surfaces must be clean and sound. Remove all dust, dirt, existing paint films, efflorescence, exudates, laitance, form oils, hydraulic or fuel oils, brake fluid, grease, fungus, mildew, biological residues, frost or any other contaminants which may prohibit a proper bond to the substrate.

Prepare the surface by using a diamond grinder, shot blaster, or by any other appropriate mechanical means in order to achieve a porous, clean surface, with a recommended CSP surface profile of 2 or greater, as per ICRI technical guidelines No.03732. Acid washing is not a recommended preparation method. All existing sealers must be removed to allow even penetration.

Ensure the concrete has a vapor pressure that is at or less than 3 lbs./1000 ft²/24hr. For information on performing this simple test, and where to obtain the testing equipment, please contact Terrafuse Inc directly.

High vapor pressure can lead to loss of adhesion over time, and it is always recommended to ensure the vapor pressure is within limits. Although TF Structural Deep has been specially formulated to retain its moisture without the use of primers or bonding agents, it is recommended to obtain a saturated surface dry (SSD) treatment of the concrete prior to application. An SSD condition will give the user more working time, and the product will be easier to spread, especially when the application is thinner.

Mixing Ratio

TF Structural Deep should be mixed to the suggested consistency. It is recommended to use a ratio from 2L – 2.5L (0.5 gal – 0.65 gal) of water to one full bag of Part A. Full bags do not have to be mixed at one time. Do not use excessive water, as too much will greatly reduce the final strengths of TF Structural Deep.

Mixer can slightly adjust ratios to get desired consistency for job site conditions. When doing deeper applications, it is recommended to use less water. When doing thinner applications, it is recommended to use more water. The installer should only mix what they are comfortable working with in 10 – 20 minutes.

Mixing

Add pre-measured amount of water to mix pail. Gradually add Part A (powder) and mix for at least 30 seconds, or until all powders are wetted out. Use a low speed mixing drill (300-450 rpm) and mixing paddle (recommended to use a heavy duty rectangle metal mud paddle) suited to the size of mixing container. We recommend mixing in five gallon pails. The mix consistency can be adjusted slightly according to job requirements, by adding more Part A or water at any time during the mixing. Small amounts of water will make a large difference in mix consistency. TF Structural Deep will cure quicker in thicker applications. This product is designed to be installed as soon as mixing is finished. Once mixed, remove from pail and use as soon as practical. Do not mix more than can be applied within 10-20 minutes.

TF Heat & TF Ice (Cure time adjustments)

Terrafuse Inc. manufactures additives to speed up and slow down the cure times of TF Structural Deep. TF Heat will speed up the cure time and reduce the working time. TF Ice is used to slow down the cure time and extend the working time. There are many factors that will influence when and how much additive to use, mainly temperature and thickness, but the user must select an amount based on site conditions.

As a recommendation, a ratio of 1 cup (250 ml) of additive can be used, for every full bag of mixed material. Once the first mix is made, the working time and cure time will let the user know how much more or less additive to use. TF Heat is used to speed up the cure when the weather is cold and the application is thinner. It can also be used when an immediate return to service is required. TF Ice is used for thicker applications and when the temperatures are higher. This will give the user longer working times with the material. Please contact Terrafuse Inc. for more clarification if required.

Application

Apply TF Structural Deep to the substrate using steel trowels or screeds. An SSD condition will give the user more working time, and the product will be easier to spread, especially when the application is thinner. After application, apply broom finish for non-slip and to replicate concrete finish as soon as possible. Do not overwork the product once it begins to set.

If product is to be applied in applications thicker than 1", it can be extended with up to 30% by volume, clean aggregate (do not use limestone). Thicker applications require less water.

When installing TF Structural Deep, it is important to maintain and honor all expansion and control joints. TF Structural Deep is a very rigid material, and cannot be used to connect different slabs of concrete and is not intended to fix cracks. Ensure when installing TF Structural Deep that you do not cover over any of these moving joints. When installing on larger areas, the user must mix and install in a continuous manner. To avoid cold seams, trowel the new mix into the previously installed mix before it has started to set. Work from one end to the other, finishing as you go.

Safety

TF Structural Deep contains ingredients that are considered hazardous. Do not get the product on your skin or eyes. Always read the container label warning and Material Safety Data Sheet prior to use.

Clean Up

Clean all tools, equipment, and surrounding work area with water while material is still wet. Once hardened, product can only be removed mechanically.

Disclaimer

This Data Sheet was created as a guide for using and installing TF Structural Deep. While we attempted to address most major areas, this sheet cannot cover the entire scope of installation methods and techniques, and all the beneficial properties of TF Structural Deep. When engaging in highly technical applications, or projects involving large scale structural restorations, it is advised to seek the recommendations of a structural engineer, specializing in restoration applications. Terrafuse Inc. encourages you to contact us directly for any clarifications or specific questions about using this product.

Warranty

Terrafuse Inc. warrants that all products are free from manufacturing defects. The data provided is believed to be reliable and is offered solely for evaluation. Datasheets are updated on a continuous basis and subject to change. Please ensure you have the most recent datasheet by contacting Terrafuse Inc. There is no warranty expressed or implied as related to any issue which is deemed to be a direct result of improper concrete preparation or cleaning, application over concrete which have not reached full cure out, those having excessive hydrostatic pressure, workmanship or application, or any other cause and effect which is not related to defective material. This warranty is limited to potential replacement of any Terrafuse Inc. product determined to be defective.

Tel: 403.243.3000 Fax: 403.243.3050
1324 Hastings Crescent SE Calgary, AB T2G 4C8
terrafuse.ca