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THORO® STRUCTURITE

Rapid Setting, High Strength Structural Repair Mortar
BBA Approved

DWI APPROVED FOR USE IN POTABLE WATER
CONFORMS TO DOT SPEC BD 27/86 CLAUSE 6.1

Description of Product
THORO® STRUCTURITE is a rapid setting polymer modified repair mortar for application where high compressive strengths are required. The material cures to a concrete grey colour.

Fields of Application
THORO® STRUCTURITE is suitable for structural repairs of reinforced and non-reinforced concrete. The material is ideal for repairing damage caused by:

- Corrosion of reinforcement bars
- Alkali aggregate reaction
- Impact damage

Features and Benefits
- Separate primers and bonding coats are not required allowing for complete repair in a single operation with substantial time savings
- Rapid-setting qualities provide high production rates saving access and labour costs
- High performance for extreme durability and protection of embedded reinforcement.
- Approved for contact with Potable Water after just 3 days curing.
- Can be applied at 10-50mm in thickness per layer

Typical Properties/ Technical Data [(a)]

Pot Life, minutes	10
Wet Density, kg/m²	2180
Modulus of elasticity, kN/mm²	30
Coefficient of thermal expansion, $°c^{-1}$	6.42×10^{-6}
Initial setting time, minutes	10 - 15
Final setting time, minutes	16-20
Compressive strength, N/mm²	
4 hours	6.3
24 hours	27.0
7 days	50.0
28 days	60.0
Tensile strength (28 days),N/mm²	4.5
Flexural strength (28 days), N/mm²	8.0
Adhesive strength (28 days), N/mm²	1.7

[(a)] Typical values at 20ºC

Tests and approvals
Awarded British board of Agreement Certificate No. 89/2353

Approved by the Secretary of State for the Environment under Regulation 25 (1)(a) for use in contact with potable water. Specific instructions for use available upon request.

Approved by the United Kingdom Water Byelaws Scheme – Listing No 9409504

Conforms to DOT BD 27/86 Clause 6.1.

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Application Procedure

Preparation of Substrate

Remove all damaged concrete back to a sound base. Remove all concrete from around exposed reinforcement to give 15mm clear cover and for 50mm at each end. The edges of the repair area must be cut square to give a minimum depth of 10mm. Ultra high pressure water methods are preferred. If percussion tools are used, ensure that the cutting edges are maintained in a sharp condition.

Remove all loose rust and scale from reinforcement by using a needle gun or by abrasive blasting; wire brushing is not recommended.

If chlorides are present or where it is not possible to apply a minimum of 10mm of THORO® STRUCTURITE over the reinforcement, it is necessary to clean back to bright steel before applying 2 coats of EMACO® NANOCRETE AP Primer.

Mixing

Liquid Requirement

Dilute THORO® ACRYL 60 with an equal part of clean potable water; stir gently.

2.5 -2.8 litres of liquid per 25 kg of THORO® STRUCTURITE , the recommended level is 2.7 litres.

The quantity will vary slightly depending on ambient conditions. It is the consistency of the mixed material that is important.

Bonding Slurry

Blend a small amount of THORO® STRUCTURITE powder to part of the mixing liquid, mixing with a trowel until a lump-free slurry consistency is obtained.

Application

Do not apply to frozen surfaces or if the ambient temperature is below 5°C or expected fall below 5°C within 8 hours.

Apply THORO® STRUCTURITE bonding slurry to a pre-dampened surface using a stiff brush. Brush firmly into the substrate, completely covering the area to be repaired and any reinforcement bars. *Do not allow to dry out.*

Trowel Mix

Add more THORO® STRUCTURITE powder to the mix until a cohesive mass is formed with sufficient stiffness to be compressed in the hand. *Do not over mix*.

Larger quantities can be mixed with a small forced-action mixer only.

Do not mix more than can be placed in 5 minutes (at 20^{o}C) or re-temper.

Trowel apply the thickened THORO® STRUCTURITE mortar into place using firm pressure to fully compact the material, taking particular care around reinforcing bars.

Apply in layers from 10 to 50mm per application allowing approximately 20 minutes (at 20^{o}C) between layers. Scratch previous application to improve bond.

If THORO® STRUCTURITE hardens before completion of repair, re-apply a bonding slurry.

To obtain difficult profiles or sharp arrises simply overfill the repair area, leave until the initial set has taken place and shave to the required shape with a clean trowel.

Curing

Fog-spray all applications with clean water after the initial set has taken place for as long as practicable.

In cool conditions, cover with insulated tarpaulin, polystyrene or other insulating material.

A separate curing compound is not necessary .

Coverage

Each 25kg of powder fills approximately 1m² at a depth of 13mm.

78 x 25 bags per m^3.

Packaging

THORO® STRUCTURITE is available in 25kg bags.
THORO® ACRYL 60 is available in 5 and 20 litre plastic containers.

Storage

All materials should be stored under cover, clear of the ground and stacked not more than 6 bags high. Protect the materials from all sources of moisture and frost.

Shelf Life

Rotate stock in order not to exceed the shelf life of 6 months for THORO® STRUCTURITE and 12 months for THORO® ACRYL 60.

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Health and Safety
*For full information on Health and Safety matters regarding this product the relevant Health and Safety Data Sheet should be consulted.

The following general comments apply to all products.

As with all chemical products, care should be taken during use and storage to avoid contact with eyes, mouth, skin and foodstuffs, (which may also be tainted with vapour until the product is fully cured and dried). Treat splashes to eyes and skin immediately. If accidentally ingested, seek medical attention. Keep away from children and animals. Reseal containers after use.

Powder Products
Should be handled to minimise dust formation; use light mask if excessive dust unavoidable. Cement powders when wet or moistened can cause burns to skin and eyes, which should be protected during use.

Resin Products
Can cause irritation, dermatitis or allergic reaction. Use protective equipment particularly for skin and eyes. Use only in well ventilated areas.

Spillage
Chemical products can cause damage; clean spillage immediately.

Disclaimer:
This information and all further technical advice is based on our present knowledge and experience. However, it implies no liability or other legal responsibility on our part, including with regard to existing third party intellectual property rights, especially patent rights. In particular, no warranty, whether express or implied, or guarantee of product properties in the legal sense is intended or implied. We reserve the right to make any changes according to technological progress or further developments. The customer is not released from the obligation to conduct careful inspection and testing of incoming goods. Performance of the product described herein should be verified by testing, which should be carried out only by qualified experts in the sole responsibility of a customer. Reference to trade names used by other companies is neither a recommendation, nor does it imply that similar products could not be used.