

# Mapefibre ST 42

Macrosynthetic Fiber Reinforcement for Concrete

**FOR PROFESSIONAL USE ONLY**

## DESCRIPTION

*Mapefibre ST 42* is a blend of polypropylene and polyethylene resins, configured as waved fiber. It is used for concrete reinforcement, to replace some rebar system and welded wire mesh (WWM) reinforcement, as well as steel fibers. *Mapefibre ST 42* is cut to 1.65" (42 mm) in order to optimize ease of use and dispersion in concrete, as well as finishing and ultimate properties of concrete.

*Mapefibre ST 42* provides excellent results according to the ASTM C1609 test method.

## APPLICABLE STANDARDS

ASTM C1116, Section 4.1.3 and Note 2 for Type III Synthetic Fiber Reinforced Concrete is the applicable standard for *Mapefibre ST 42*, which conforms to ASTM D7508 specifications. *Mapefibre ST 42* is applicable for design by the ACI 360 R-10 guides for slabs-on-ground.

## WHERE TO USE

*Mapefibre ST 42* fibers are particularly suitable for the following:

- Industrial interior/exterior slabs-on-grade
- Warehouses slabs-on-ground
- Roadways and pavements
- Composite decks
- Bridge decks
- Concrete paving
- Shotcrete

- Precast septic tanks and burial vaults
- Precast pipes and panels

## ADVANTAGES

*Mapefibre ST 42* provides a three-dimensional concrete reinforcement that enhances post-first crack residual strength, toughness and fatigue strength, impact resistance and surface abrasion resistance, which leads to a more durable concrete with a longer service life. *Mapefibre ST 42* also helps in mitigating plastic shrinkage cracking.

Typical advantages applying to *Mapefibre ST 42* reinforcement are:

- Reduced in-place cost when compared to the use of WWM.
- Reduced expansion-contraction from thermal and moisture changes.
- Extension of control joints.
- A more homogeneous concrete reinforcement from the top to the bottom of concrete slabs.
- Reduced plastic shrinkage and cracking.
- In shotcrete applications, reduced equipment wear, rebound and waste when compared to steel fibers.

## DOSAGE

Typical recommended dosages of *Mapefibre ST 42* will vary from 3 to 11 lbs. per cubic yard (1.8 to 6.5 kg per m<sup>3</sup>). However, the specific rate should be selected by the engineer for a given application, based on project specifications.

MAPEI's Technical Services Department can provide support in selecting the appropriate *Mapefibre ST 42* dosage.

## MIXING

*Mapefibre ST 42* is contained in water-soluble pucks and packaged in pulpable bags that can be added directly into the concrete mix. For better dispersion, it is recommended that *Mapefibre ST 42* be introduced into the mixers during the batching process and mixed with the concrete for 3 to 5 minutes at maximum speed. It is possible to add the *Mapefibre ST 42* into mixing drums already loaded with concrete.

## Technical Data

Material	Polypropylene and polyethylene blend
Absorption	Nil
Specific gravity	0.91 g per cm <sup>3</sup>
Acid/salt/alkali resistance	Excellent
Aspect ratio	52.5
Electrical conductivity	Low
Equivalent diameter	0.03" (0.80 mm) avg.
Lengths	1.65" (42 mm)
Melting point	320°F (160°C)
UV resistance	Excellent
Tensile strength	65 ksi (450 N/mm <sup>2</sup> )
Elastic module	565 ksi (3 900 MPa)

## FINISHING

A vibrating screed or laser screed will promote uniformed density of the concrete and ensure fiber encapsulation at the slab surface.

## COMPATIBILITY WITH OTHER PRODUCTS

*Mapefibre ST 42* fibers are compatible with other admixtures used in the production of high-quality concrete, and especially with:

- Water reducers from the *Dynamon* line as well as other products from the MAPEI admixtures line
- *Mapecure* curing surface films.
- *Mapecrete* systems, innovative technology used in the production of concrete with volumetric stability.
- Form-release agents from the *Mapeform* line.

## PACKAGING

*Mapefibre ST 42* fibers are packaged in water-soluble bags measuring 3 and 5 lbs. (1.36 and 2.27 kg).

The shelf life of *Mapefibre ST 42* is 2 years in unopened packaging if protected from moisture.

## ADDITIONAL INFORMATION

For information on MAPEI's commitment to sustainability and transparency, as well as how MAPEI products may contribute to green building standards and certification systems, contact [sustainability\\_USA@mapei.com](mailto:sustainability_USA@mapei.com) (USA) or [sustainability-durabilite@mapei.com](mailto:sustainability-durabilite@mapei.com) (Canada).

#### LEGAL NOTICE

The contents of this Technical Data Sheet ("TDS") may be copied into another project-related document, but the resulting document shall not supplement nor replace requirements per the TDS in effect at the time of the MAPEI product installation. For the most up-to-date TDS and warranty information, please visit our website at [www.mapei.com](http://www.mapei.com). **ANY ALTERATIONS TO THE WORDING OR REQUIREMENTS CONTAINED IN OR DERIVED FROM THIS TDS SHALL VOID ALL RELATED MAPEI WARRANTIES.**

Before using, the user must determine the suitability of our products for the intended use, and the user alone assumes all risks and liability. **ANY CLAIM SHALL BE DEEMED WAIVED UNLESS MADE IN WRITING TO US WITHIN FIFTEEN (15) DAYS FROM DATE IT WAS, OR REASONABLY SHOULD HAVE BEEN, DISCOVERED.**

## CONTACT INFORMATION

### MAPEI Headquarters of North America

1144 East Newport Center Drive  
Deerfield Beach, Florida 33442  
1-888-US-MAPEI (1-888-876-2734) / (954) 246-8888

### Technical Services

U.S. and Puerto Rico:

Flooring: 1-800-992-6273

Concrete and heavy construction: 1-888-365-0614

Canada:

1-800-361-9309

### Customer Service

1-800-42-MAPEI (1-800-426-2734)

Edition Date: March 28, 2024 MK 00750 (23-1641)

For the most current product data and BEST-BACKED<sup>SM</sup> warranty information,  
visit [www.mapei.com](http://www.mapei.com).  
All Rights Reserved. © 2024 MAPEI Corporation.

