

MapeGrid C 170

Building Product Information Requirements Compliance Statement

Date: 22/11/2023 (version 1)

Product identifier: **MapeGrid C 170**

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Product Description

MapeGrid C 170 is a high strength carbon fibre mesh used in combination with Planitop HDM Maxi (two component, ready mixed, high ductility, pozzolanic - reaction fibre reinforced cementitious mortar) for reinforced structural strengthening of masonry, stone, brick, and tuff masonry structures.

MapeGrid C 170 mesh is a part of Mapei FRG system, a complete range of composite materials that uses an inorganic matrix to provide excellent ductility and load distribution throughout the masonry structure. This type of system offers several important advantages when used on buildings of historical or artistic interest. It is also a good system, particularly in seismic areas where stresses are proportional to the masses involved.

MapeGrid C 170 is supplied in 100cm wide by 50m long rolls packed in cardboard boxes.

Ancillary products with MapeGrid C 170 are given below.

- Planitop HDM Maxi

Please refer to the technical data sheet for areas of use, performance parameters and application procedure for this system.

Or request support at:

www.mapei.com/nz/en/technical-and-commercial-support

Relevant Building Code Clauses

MapeGrid C 170 complies with the following clauses of the New Zealand Building Code:

B1 Structure

B2 Durability

C6 Structural Stability

F2 Hazardous Building Materials: F2.3.1

MBP (NZ) Ltd.

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WE SUPPLY THE FOLLOWING MAPEI GROUP BRANDS AND SYSTEMS:



Contributions to Compliance

- MapeGrid C 170 has been tested with Planitop HDM Maxi for maximum tensile strength, ultimate tensile strain, and modulus as per CNR-DT 215/2018
- Planitop HDM Maxi is classified as an M25 type masonry mortar according to EN 998-2 European Standards and as GP render, category CSIV according to EN 998-1
- During installation, MapeGrid C 170 is sandwiched between 2 layers of Planitop HDM Maxi which has high bonding strength and once hardened forms a tough and compact layer which is impermeable to water and aggressive gases present in the atmosphere. MapeGrid C 170 is a carbon fibre grid, extraordinarily light in weight. It is characterised by extremely high stiffness and tensile strength. In addition to its natural strength and stiffness, MapeGrid C 170 is extremely resistant to heat and chemical abrasion. It should not be exposed to UV. A Structural Design Engineer should review each installation for structural performance, structural suitability, and durability.
- A qualified Structural Engineer should review the relevant NZ building code clauses stated in this document in conjunction with Test report, which will be shared on request by the design engineer to confirm compliance.
- MapeGrid C 170 grid does not pose a risk to health when in a dry fabric form or when cured in a matrix. Carbon fibres can become a health risk, if released as a fine dust into the atmosphere during cutting, machining or mechanical finishing. These fibres may irritate the skin or mucous members, such as eyes and lungs. Read the SDS for MapeGrid C 170 and Planitop HDM Maxi before handling and follow all the handling precautions and disposal instructions.
- MapeGrid C 170 is embedded between 2 layers of Planitop HDM Maxi, Planitop HDM Maxi has A2-s1, d0 rating for fire as per Euro class EN 13501-1

Scope of Use and Design Requirements

- Designing of Strengthening works and their location in the structure should be specifically undertaken by a qualified Structural Engineer.
- FRCM strengthening design on masonry structures should be undertaken in accordance with ACI 549.4R-13. However, the necessary modifications to ACI 549.4R-13 should be modified to ensure compliance with requirement of NZS 3101:2006, NZS 1170:2002 and NZS 4210:2013
- A qualified Structural Engineer must check and confirm the compatibility of the MapeGrid C 170 + Planitop HDM Maxi with other building components in the project.

Conditions and Limitations of Use

- A qualified Structural Engineer must check and confirm the compatibility of the MapeGrid C 170 + Planitop HDM Maxi outside of the information not given in the TDS.
- A qualified Structural Engineer should design FRCM strengthening on structures in accordance with ACI 549.4R-13. or an equivalent acceptable Design Standard.
- MapeGrid C 170 + Planitop HDM Maxi should only be applied by MBP (NZ) Ltd approved applicators who have been trained for application of the Mapei FRCM System.

Supporting Documentation

The following additional documentation supports the above statements:

MapeGrid C 170 + Planitop HDM Maxi - Technical Data Sheet

<https://www.mapei.com/nz/en/products-and-solutions/products/detail/mapegrid-c>

MapeGrid C 170 + Planitop HDM Maxi – Test Report

Test Report will be made available on request.

Contact Details

Manufacture location

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Warnings and Bans

MapeGrid C 170 is not subject to a warning or ban under section 26 of the Building Act 2004.

Version History

Version number	Written by	Checked by	Date issued	Changes from previous version
V1 24/11/2023	PM	PT	15/03/2024	New document