

MAPEFILL 130 WT

High-flow cementitious mortar with high compressive strength and fatigue resistance for anchoring and grouting onshore wind turbines



WHERE TO USE

- Anchoring baseplates for onshore wind turbines where high fatigue resistance is required.
- Anchoring bolts of wind turbines.

Some application examples

- Filling gaps and voids where a high modulus of elasticity and high compressive strength are required.
- Baseplates grouting of onshore wind turbines;
- Anchoring works in adverse weather conditions and at temperatures down to +2°C.

TECHNICAL CHARACTERISTICS

Mapecure 130 WT is a pre-blended powdered grout composed of high-strength cement, graded aggregates, and special admixtures with an expansive agent formulated by MAPEI Research & Development laboratories.

When mixed with water, **Mapecure 130 WT** forms a highly fluid mortar with the capacity to flow into complex spaces. It is not necessary to vibrate the mortar, and it does not segregate. It can be used for anchoring works from 10 to 200 mm thick.

Thanks to its special expansive agent, **Mapecure 130 WT** is characterized by a total absence of shrinkage in both its plastic phase and its hardened phase and develops very high early mechanical performance.

If **Mapecure 130 WT** is prepared by only adding water, it must be cured under damp conditions. However, there is no guarantee that these conditions can be created on-site. Therefore, to guarantee that the expansive properties of **Mapecure 130 WT** take place when drying in the open air, especially on hot and windy days when water evaporation is accelerated, 0.25% of **Mapecure SRA**, a special shrinkage-reducing admixture, may be used to great advantage when added to the mix. Thanks to this special technology, the development of hydration reactions is encouraged, and capillary porosity is reduced, resulting in an increase in mechanical properties, impermeability, and durability.

Mapecure 130 WT has excellent fatigue resistance. The fatigue performances of the product are reported in the test report, available upon request.

Mapecure 130 WT complies with the principles defined in EN 1504-9 ("Products and systems for the protection and repair of concrete structures: definitions, requirements, quality control and evaluation of conformity. General principles for use of products and systems"), and the minimum requirements of EN 1504-6 for anchoring works.

RECOMMENDATIONS

- Do not add cement or admixtures to **Mapecure 130 WT**.
- Do not add water once the mix has started to set.
- Do not use **Mapecure 130 WT** if the bag is damaged or if it has been opened previously.

APPLICATION PROCEDURE

Technical information for the applicator

Mixing ratio:	100 parts of Mapefill 130 WT with 9.0-9.5 parts of water (2.1-2.4 litres of water every 25 kg bag)
Anchoring thickness:	from 10 to 200 mm
Application temperature:	surrounding temperature and temperature of the substrate +2°C to +35°C
Pot life of mix:	approx. 1 hour (at +20°C)

Preparation of the substrate

- Remove the dust, cement laitance, and loose material from the concrete surface with a high-pressure water jet.
- Saturate the foundation surface and the sides of the cavity to be filled with water. Make sure that there is no liquid water on the surface before pouring: wait until any excess water has evaporated off, and if necessary, use compressed air to help remove the ponding water.

Preparation of the mortar

- Pour into a concrete mixer at least 2.1 litres of water per bag, then slowly add **Mapefill 130 WT**, mix for 4-5 minutes until a homogeneous mix is obtained.
- Add the remaining mixing water, up to a maximum of 2.4 litres per bag, and mix again for 2 minutes until a homogeneous and lump-free mix is obtained. The pot life of **Mapefill 130 WT** is approximately 1 hour at +20°C.
- If improved open-air curing of the mortar is required, add **Mapecure SRA** to the freshly mixed product at a dosage of 0.25% by weight of the mortar (0.25 kg each 100 kg of **Mapefill 130 WT**).
- The instructions for the preparation of the mortar to be used for the creation of concrete samples for laboratory tests are reported in the "Technical Data" table.

Application of the mortar

Before pouring, make sure that the formwork is duly positioned and sealed to prevent mortar from leaking out during the application.

The formwork should not absorb water from **Mapefill 130 WT** and, to prevent this, it is recommended to treat the formwork with a form-release compound (such as **Mapeform DMA 1000** for wooden formwork, **Mapeform 1500 Plus** or **Mapeform Eco 31** for any type of formwork).

Pour our pump **Mapefill 130 WT** into the areas previously prepared from one side only in a continuous flow to help expel the air. Pour **Mapefill 130 WT** into the formwork until it is completely full, making sure the mortar comes into full contact with the baseplate of the wind turbine.

It is not necessary to vibrate the mortar.

For further information regarding the type of tools to be used for mixing and pumping operations, please contact the Mapei Technical Service.

The product is not compatible with continuous rendering machines.

PRECAUTIONS TO BE TAKEN DURING AND AFTER APPLICATION

- To prepare the mortar, use only **Mapefill 130 WT** bags that have been stored on their original pallets.
- After pouring, **Mapefill 130 WT** must be cured very carefully. Surfaces exposed to the open air must be protected to avoid the water evaporating off too quickly, otherwise, surface cracks due to plastic shrinkage may form, particularly in hot and/or windy weather.
- Spray water on surfaces exposed to the open air during the first 24 hours of curing, or apply a suitable anti-evaporation product on the surface.

CLEANING

Remove mortar from tools with water before it hardens. Once hardened, cleaning is much more difficult and must be carried out only mechanically.

CONSUMPTION

approx 2.2 kg/dm³.

PACKAGING

25 kg bags.

STORAGE

Mapefill 130 WT may be stored for maximum 12 months in its original packaging. Store the product in a dry, covered place at a temperature between +5°C and +35°C in its original, well sealed packaging.

SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

Instructions for the safe use of our products can be found on the latest version of the Safety Data Sheet, available from our website www.mapei.com.

PRODUCT FOR PROFESSIONAL USE.

TECHNICAL DATA (typical values)

PRODUCT DETAILS

Type according to EN 1504-1:	CC
Consistency:	powder
Colour:	grey
Maximum size of aggregate:	2.5 mm
Chloride ion content according to EN 1015- 17: (minimum requirements according to EN 1015 ≤ 0.05%)	≤ 0.05 %

TECHNICAL INFORMATION FOR PRODUCT PREPARATION

Mixing ratio:	100 kg of Mapefill 130 WT with 9.5 kg of water.
Preparation of mix:	Mix the product in compliance with the standard EN 196-1

CHARACTERISTICS OF THE FRESH MIX (at +20 °C and 50% R.H.)

Colour of the mix:	grey
Consistency of mix:	fluid
Density of the mix:	2400 kg/m ³

FINAL PERFORMANCE

Product cured in compliance with the test methods

Performance characteristic	Test method	Requirements according to EN 1504-6	Performance of product	
Compressive strength: - 28 days	EN 12390-3	n/a	130 MPa	
Compressive strength: - 1 day - 7 days - 28 days	EN 12190	n/a	+20°C 70 MPa 115 MPa 130 MPa	+5°C 7 MPa 105 MPa 115 MPa
Flexural strength: - 90 days	EN 196-1	n/a	16 MPa	
Modulus of elasticity in compression:	EN 13412	n/a	42 GPa	
Direct tensile adhesion to concrete:	EN 1542	n/a	> 3.0 MPa	
Thermal compatibility: freeze-thaw cycling with de-icing salt: (50 cycles):	EN 13687-1	n/a	> 2.0 MPa	
Capillary absorption:	EN 13057	n/a	0.01 kg/m ² ·h ^{0.5}	
Pull-out strength of steel rebar – displacement at load of 75 kN:	EN 1881	≤ 0.6 mm	0.3 mm	
Unrestrained shrinkage (84 days):	EN 12617-4	n/a	< 0.6 mm/m	
Exposure class:	/	n/a	X0 XC1, XC2, XC3, XC4 XD1, XD2, XD3 XS1, XS2, XS3 XF1, XF2, XF3, XF4 (**) XA1	
Reaction to fire:	EN 13501-1	Euroclass	A1	

(**) **Mapefill 130 WT** was tested according to the standard EN 12390-9 compared with reference concrete with composition in compliance with class XF4 according to EN 206-1.

Preparation of the test pieces: pour the mortar into the mould until it is full without settling it.

WARNING

Although the technical details and recommendations contained in this product data sheet correspond to the best of our knowledge and experience, all the above information must, in every case, be taken as merely indicative and subject to confirmation after long-term practical application; for this reason, anyone who intends to use the product must ensure beforehand that it is suitable for the envisaged application.

Please refer to the current version of the technical data sheet, available from our website www.mapei.com.

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