MasterFlux® 1300

Ultra-High Strength Grout for Onshore Wind Turbine Foundations

Material Description

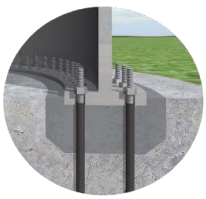
MasterFlux® 1300 is a shrinkage compensated, cementitious material, that when mixed with water yields a flowable and pumpable grout with high early and final strength and elastic modulus. The material also exhibits excellent fatigue behavior providing long term resistance against dynamic loading. The grout furthermore reveals superior technical performance, excellent rheological behavior and long workability time.

Areas of Application

MasterFlux® 1300 has been designed especially for:

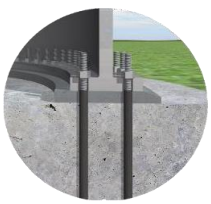
- Base plate grouting of wind turbine installations installed using the pre-stressing technique.
- Onshore wind turbines that require ultra-high strength grout materials.
- Applications where an excellent resistance against dynamic loads or fatigue is required.
- For anchoring bolts of turbines.
- Applications in a large temperature range, from 0 to 40 °C.
- A wide range of application thickness, from 25 to 600 mm.

For any other application not mentioned here before, contact the **MBT Tech.**



Deep trench design

Shallow trench design



Above plinth design

Characteristics and Benefits

- Ultra-high strength: i.e. ≥ C100/115 according EN206.
- Excellent resistance against dynamic loads as tested according to Model Code 2010 for fatigue resistance.
- High modulus of elasticity.
- Very fast strength development, ≥ 60 MPa after 1 day, allowing rapid continuation of turbine installation works.
- Very long workability: ≥ 2 h, even at high temperatures.
- Excellent pumpability allowing high installation rates.
- No segregation nor bleeding.
- Flow behavior of the grout allows installation into complex areas or sections that are practically inaccessible.
- Cement based, but dust reduced.
- Available in small bags as well as big bags, the latter to suit large volume applications.
- Validated by various OEM's.

Processing

Being especially designed for highly specific applications like wind turbines, **MasterFlux® 1300** shall only be installed by fully trained, experienced, and approved grouting contractors, so called AGC's.
The full application method is available on request.

Cleaning of Tools

Cleaning tools and spillages can be done with water, while the material is still fresh and uncured.
Hardened **MasterFlux® 1300** can only be removed mechanically.

Packaging

MasterFlux® 1300 comes in 25 kg paper bags or in special watertight big bags of 500 kg.

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Consumption

1000 kg of **MasterFlux® 1300** powder will yield approximately 450 liters of freshly mixed grout.

Storage

MasterFlux® 1300 shall be stored in dry, preferably cool, conditions. Under such conditions the shelf life of the product is 9 months in 25 kg bags and 12 months in big bags, provided the goods are stored in unopened original packaging.

Notes

- The material shall only be mixed with drinking water.
- Sands or other products that may alter the properties of **MasterFlux® 1300** shall not be added.
- In case the freshly installed grout will be exposed to strong drying conditions, e.g. heavy wind or direct sunlight, the fresh grout shall be protected using **MasterKure®** curing agents, wet cloth or plastic foil.
- When grouting in conditions below 0°C or above 40°C, please contact the **MBT Tech.**

Health and Safety

MasterFlux® 1300 contains cement. Avoid the contact with eyes and prolonged contact with skin. In case of contact with eyes, immediately flush with plenty of water, for at least 15 minutes. Call a doctor. In case of contact with the skin, clean thoroughly with water. Furthermore, usual preventive measures for the handling of chemical products should be observed when using this product. For specific safety information on this material, we refer to our Material Safety Data Sheet. Disposal of **MasterFlux® 1300** shall be carried out according to the local legal legislation. Responsibility for the disposal of the material lies with the final owner of the product.
For further information on possible hazards or precautionary statements, we refer to our product specific Material Safety Data Sheet.

Disclaimer

The technical information given in this publication is based on the present state of our best scientific and practical knowledge. **MBT Teknik Yapı Kimyasalları Sanayi ve Ticaret A.Ş.** is only responsible for the quality of the product **MBT Teknik Yapı Kimyasalları Sanayi ve Ticaret A.Ş.** is not responsible for results that may occur because the product is used other than advised and/or out of instructions regarding the place and the method of use. This technical form is valid only till a new version is implemented and nullifies the old ones.

Contact

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Technical Properties		
Fresh Mortar Properties		
Mixing water demand [1]	Approximately 1.81 lt/ 25 kg bag Approximately 36.25 lt/ 500 kg big bag	
Density of mixed material	Approximately 2.4 kg/dm^3	
Pot life of mixed product	≥ 2 hours	
Application temperature	0°C to 40°C	
Application thickness	25 mm to 600 mm	
Mechanical Properties		
Compressive strength	75 mm cubes	4x4x16 cm prisms
after 1 day	≥ 60 N/mm^2	≥ 55 N/mm^2
after 2 days	≥ 90 N/mm^2	≥ 85 N/mm^2
after 7 days	≥ 110 N/mm^2	≥ 105 N/mm^2
after 28 days	≥ 120 N/mm^2	≥ 120 N/mm^2
Strength development (40 x 40 x 160 mm prisms)	≥ 0,7 $f_{cm,2}$ / $f_{cm,28}$	
Flexural strength (40 x 40 x 160 mm prisms)	≥ 14 N/mm^2	
Characteristic compressive strength $f_{ck,cyl}$	110 N/mm^2	
Static modulus of elasticity	≥ 40 GPa	
Drying shrinkage	≤ 0.3 mm/m	
Adhesion to concrete	≥ 2 N/mm^2	
Plastic expansion	≥ 0.2 Vol-%	
Classification		
Compressive strength class	≥ C100/115	
Early strength class	A	
Shrinkage class	SKVM 0	
Exposure classes	X0, XC4; XD3, XF3; XA2, XS3, WF	
These product data do not represent guaranteed minima and are given for conditions of 20 °C if not otherwise stated.		

Water demand may change with temperature. Water demand can be as low as 1.75 liters/25 kg at 0°C, or as high as 1.95 liters/25 kg at 40°C