

MasterTop[®] 518

Fast setting site mixed screed mortar – for fast track installation of cementitious screeds

TYPICAL APPLICATIONS

- For indoor and outdoor use, also suitable for direct use.
- For areas which are exposed to permanent wetness.
- For fast track bonded screeds and screeds installed on an isolating or insulating layer.
- Suitable for heated screeds.
- As repair mortar for concrete floors and cementitious screeds.
- For layer thicknesses from 10 to 80 mm for continual layer of application.

PACKAGING

25 kg PE lined heavy duty paper bag

STORAGE AND SHELF LIFE

Minimum 6 months when stored in dry conditions, no permanent storage over +30°C.

ADVANTAGES

Walkable after approx. 1day and can be tiled after approx. 3 days.

- On-site mixing of sand required.
- Different mixing ratios possible.
- Long working time can be worked with and smoothed for almost 1 hour despite of short curing time.
- Suitable for application by pump, even at higher temperatures.
- Temperature resistant from -30°C to +80°C, therefore suitable for balconies, terraces, garages, industrial floor coverings cleaned with superheated steam.
- Insensitive to moisture, therefore suitable for areas exposed to permanent wetness.
- Pipes & conduits must be covered by a layer thickness of minimum 30 mm.

TECHNICAL DATA

MATERIAL

Material base	Special cement with admixtures
Components	1 part
Bulk density	Approx. 1.1 g/cm ³
Appearance	Powder
Colour	Grey
Screed classification in accordance to BS EN 13813 can be produced * / ***	
Powder/Aggregate ratio = 1:6 (parts / weight)	CT-C35-F6
Powder/Aggregate ratio = 1:7 (parts / weight)	CT-C30-F5
Powder/Aggregate ratio = 1:8 (parts / weight)	CT-C25-F4
BRE test (impact resistance/soundness)	Category A

MasterTop[®] 518

APPLICATION

Consumption (powder) Mixing ratio = 1:6 (parts / weight) Mixing ratio = 1:7 (parts / weight) Mixing ratio = 1:8 (parts / weight)	approx. 2.8 kg/m ² of MasterTop 518 per cm layer thickness approx. 2.4 kg/m ² of MasterTop 518 per cm layer thickness approx. 2.1 kg/m ² of MasterTop 518 per cm layer thickness
Quantity of gauging water ** Powder/Aggregate ratio = 1:6 (parts / weight) Powder/Aggregate ratio = 1:7 (parts / weight) Powder/Aggregate ratio = 1:8 (parts / weight)	approx. 14.2+/-0.5 liter of water for 25 kg of MasterTop 518 approx. 15.0+/-0.3 liter of water for 25 kg of MasterTop 518 approx. 17.5+/-0.3 liter of water for 25 kg of MasterTop 518
Layer thickness (depending on aggregate) - minimum - maximum - maximum (with large aggregate) - for pipes & conduits	approx. 10 mm for bonded screeds; approx. 40 mm for screeds on isolating or insulating layer approx. 80 mm approx. 160 mm min. 30 mm to cover
Recommended grade of aggregate (grading curve with low portion of fines) Ø 5 mm max. aggregate size Ø 16 mm max. aggregate size	Layer thickness approx. 10 – 80 mm approx. 65 – 160 mm
Working temperature ****	+5°C to +30°C
Mixing technique	Force action mixer (free fall tumble mixer must not be used)
Conveyor technique	pneumatic
Consistency of mortar	stiff-plastic
Working time *	approx. 60 minutes
Curing time * - foot traffic after - can be tiled after - Residual moisture content	approx. 1 day approx. 3 days (with ceramic and/or natural stone) ≤2% after approx. 3 days
Service temperature	-30°C to +80°C
Frost resistance	yes
Resistance to permanent wetness	yes

* Times/values are achieved when the temperatures of mortar, ambient air and substrate are approx. +23°C over the entire period and the relative humidity does not exceed approx. 50%rh. See also "General information on the application of rapid setting cement screeds".

** Quantity of gauging water depends on sand type (shape) used on site and can be adjusted according to recommended water range. Sand of low level of fines is preferable.

*** A standardized sand sieve line based on local sand types has been used for testing. Aggregate size: (0-5) mm

**** For hot weather condition please follow best practices of hot weather application methods or contact Master Builders Solutions Technical Services

MasterTop® 518

PREPARATION OF SUBSTRATE FOR BONDED SCREEDS ACCORDING TO BS 8204

The substrate must be clean, sound, free from grease, old paint and other residues. Remove heavy contamination mechanically, residues of oil and wax. Smoothed surfaces with a cement slurry on top should be removed by e.g. shot blasting.

Pre-wet the prepared substrate at an early stage, keep damp, apply the bonding agent **MasterTop 500** and the screed mortar **MasterTop 518** wet on wet.

BRE hammer (soundness) test is the preferred and recommended non-destructive test method on site for the confirmation of the screed quality. Test can be used on bonded screed or floating screed of minimum thickness of 75mm.

APPLICATION GUIDELINES

The recommendations BS8204-1 should be followed during the application of **MasterTop 518**. To confirm the quality of the available sand type Master Builders Solutions Construction Chemicals recommends to pre-approve the mix design to make sure the desired consistency and strength level will be achieved.

Following mix design shall be used on site:

Option I.

Recommended sand source and mix design for (10 - 80) mm screed thickness:

Gulf Rock (0-5) mm sand: 90% / weight
blended with

Dune Sand (0-0.6) mm: 10% / weight

Option II.

Recommended sand source and mix design for (65 - 160) mm screed thickness:

Gulf Rock (0-5) mm sand: 70-80% / weight
blended with

Aggregate (10-16) mm: 20-30% / weight

MIXING

1.1 Add pre-approved aggregates in a force action concrete mixer according to the desired mixing ratio. Add **MasterTop 518** and mix for 1 minute.

1.2 Add water while mixer is running (quantity of water depends on the moisture content, type, size and shape of the used aggregates) and mix for approx. 3-5 minutes. Avoid water overdose!

The consistency of the mortar should be stiff-plastic & easy to trowel.

A free fall tumble mixer must not be used for mixing.

APPLICATION

Spread the mortar with a shovel, trowel or surface scraper, compact, scrape off with a levelling board, rub down with a wooden board and smooth if necessary.

Protect newly applied screed from too rapid dehydration (e.g. plastic sheet up to 7 days) Sprinkling water on surface is NOT recommended.

GENERAL INFORMATION ON THE PRODUCTION OF RAPID SETTING CEMENT SCREEDS

The mix must be of a stiff-plastic consistency. If the consistency is too soft and/or contains too much water, the screed does not achieve the appropriate strength resulting in shrinkage cracks and bulges. The equilibrium moisture will not be reached until later.

The strength and low residual moisture level important for laying subsequent coverings are dependent on the following factors:

MasterTop[®] 518

COMPACTION OF THE FRESH MORTAR

Insufficient compaction of pre-mixed mortars for screeds results in low strength of screed therefore a stiff-plastic fresh mortar consistency is recommended. A dry consistency may result in low strength due to insufficient compaction which leaves voids (air pockets) within the screed matrix.

TEMPERATURE AND HUMIDITY

Curing and drying times may considerably increase at low application and substrate temperatures or high humidity (compared with the times at +23°C). The relative humidity should not exceed 70% during the curing process. In principle, the residual moisture should be checked prior to the application with vapour-tight floor coverings.

Preferred methods: Electronic moisture meter or CM (Calcium Carbide) test method in accordance to the manufactures user guideline.

PLEASE NOTE

- The general guidelines for cement screeds must be observed.
- The rapid curing properties of **MasterTop 518** must be taken into consideration.
- Use only whole bags of **MasterTop 518**.
- **MasterTop 518** must not be mixed with cement, rapid bonding agents, ready-to-mix screeds, dry mortars, as well as fibres, admixtures or additives and/or blended with aggregate mixes.
- Apply **MasterTop 518** within approx. 60 minutes (at approx. +23°C) after mixing. Higher temperatures reduce, lower temperatures increase the time given.

- Never add water or fresh **MasterTop 518** to reconstitute a mortar mix which has already begun to set.
- In outdoor areas where early exposure to rain is expected or under extremely windy conditions it is recommended to cover the installation with construction foil until walkable.
- Clean tools and mixing vessels with water immediately after use, once the product has cured cleaning with water is not possible any more.
- On site sample preparation for compression testing is not recommended.

HEALTH AND SAFETY

MasterTop 518 contains cement. Contact with moisture or gauging water sets off an alkaline reaction which may cause skin irritation and/or caustic burns to mucous membranes (e.g. the eyes). Risk of serious damage to eyes, therefore avoid contact with eyes and prolonged contact with skin. In case of contact with eyes immediately rinse with plenty of water and seek prompt medical attention. In case of contact with skin change contaminated clothing at once and immediately wash skin with plenty of soap and water. Wear suitable protective gloves (e.g. cotton gloves soaked in nitrile) and safety goggles/face protection. If ingested seek prompt medical attention and show packaging or this product data sheet. Keep out of reach of children.

For further information refer to the Master Builders Solutions. Material Safety Data Sheet.

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NOTE

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