

# MasterTop 538

## Industrial grade self-smoothing cementitious floor overlay

### MATERIAL DESCRIPTION

**MasterTop 538** is a single component, quick hardening, self-smoothing, structurally sound, grey cement-based overlay for levelling floors. **MasterTop 538** can be laid at thicknesses up to 30 mm, with a minimum of 8 mm when pumped or 6 mm when hand applied.

### AREAS OF APPLICATION

For fast-track refurbishment and new construction where there is a demand for a smooth surface for:

- Smoothing floors in factories, workshops and warehouses.
- Raising floor levels.
- Structural strengthening.
- **MasterTop 538** may be left as is or sealed for increased durability with a clear seal coat, **MasterCast 141**.
- **MasterTop 538** can be used in combination with any Master Builders Solutions Epoxy or Polyurethane topping to provide better aesthetics and increased resistance to abrasion and chemical attack.

### FEATURES AND BENEFITS

- Quick curing and overcoat times, short return to service periods.
- Self-levelling at 8mm.
- Can be pumped or hand applied.
- Walk on after 6-8 hours (subject to environmental conditions).
- Normal overcoat time, 24 hours at screed thickness up to 10mm.
- Single pack, merely add prescribed measure of water.
- Strength and performance controlled fast-track screed system.
- Provides a durable wearing surface (Sealed).

### TYPICAL PROPERTIES\*

Compressive strength	MPa (Dry Cure)
1 Day	10
3 Day	22
7 Day	44
28 Day	54

Other Properties	
Relative wet density	2.1 kg/litre
Approximate wet yield 20kg with 3.5 litre mixing water	9.5 litre per bag
Adhesion @ 28 days	>1.5MPa
Working time at 23 °C	20 mins
Walking time at 23 °C (constant)	6 – 8 hrs
Overcoating time (23 °C, 50% RH)	24 hours @ 10mm

### SURFACE PREPARATION

The surface must have a minimum compressive strength of 25MPa. Substrate must be clean and free of oil, sealers, curing compounds, paint, polymer coatings, dust or other foreign (contaminating) matter. Remove all weak or broken pieces of concrete. If necessary, employ mechanical cleaning methods and equipment. If sealers, paint, polymer coatings or curing compounds are present on concrete substrate, remove with mechanical shotblasting equipment.

**MasterTop 538** is best applied where the application temperature is between 5°C and 35°C. Outside this range, please refer to your local Master Builders Solutions Technical Representative. Voids and cracks (water pipes, holes, drainage pipes etc) should be filled to prevent seepage through to lower levels. Consult with your local Master Builders Solutions Technical Representative for product recommendations. Note: Joints should always be cut in toppings directly above those in the base slab to avoid random cracking.

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### BONDING AND PRIMING

Two coats of **MasterCast 141** are to be used as a primer, the second coat must only be applied once the first coat is touch dry. Application of the primer must be made to a relatively dry substrate to aid primer penetration.

First coat: Dilute the **MasterCast 141** with clean potable water to a ratio of 1-part **MasterCast 141** to 1 part water. Applied by brush or roller working the primer into the surface, Apply the primer at a nominal rate of 15 m<sup>2</sup> litre and allow to dry. Ensure that no ponding of the product occurs.

Second coat: Apply undiluted **MasterCast 141** to first coat at a rate of 8 m<sup>2</sup> /litre and allow to touch dry, then apply ready mixed **MasterTop 538**.

Note: for heavy Industrial or structural bonding of the screed an epoxy bonding agent may be required. Please consult with our technical department for this methodology.

### MIXING

Mechanical mixing using a heavy-duty drill and helical mixer, or a continuous mixer/pump is the recommended mixing method. When mixing with a heavy-duty drill/stirrer, single bags (20 kg) should only be attempted at a time, this affects proper homogeneous mixing and performance. Add approximately 3 litres of clean potable water to the mixing vessel and whilst slowly stirring, slowly add the 20 kg of powder. Once the **MasterTop 538** mix is lump free and homogeneous add the balance of the water in increments of 250 ml until the desired consistency is obtained. A maximum of 4 litres of water should be used per 20kg bag of **MasterTop 538**, excess water may lead to a friable surface and will reduce the strength of the screed.

For optimum performance, the recommended addition is 3.5 litres of clean potable water per 20kg bag of product. Do not mix more compound than can be applied in 20 minutes. Laying temperature must be in the range of 5 °C to 30 °C. Use warm water in cold conditions, typically 25 °C to obtain a mixed temperature ideally at 20 °C.

Note: While high speed mixing, care must be taken to ensure that no air is entrapped in the product.

### APPLICATION

Once primed, within 15 minutes or when the **MasterCast 141** is Touch dry, Pour or pump the mix over the floor surface. Place the **MasterTop 538** onto the floor in a continuous operation, feeding fresh material into a wet edge. It will level out to a smooth even finish. Where necessary, release entrapped air bubbles from the screed with a serrated trowel, squeegee or tee-bar. This practice must be adopted within 5 minutes of application to avoid interfering with final levelling properties. Should the product lose its required consistency as a result of standing for too long prior to application, do not re-temper. Discard the product and mix a fresh bag of product. Do not overwork the product as it may lead to streaking.

### CURING

The following day but within 24 hours apply a top seal coat of **MasterCast 141** at rate of 8 to 10 m<sup>2</sup> / litre/coat. A minimum of two coats are required.

### COVERAGE

A 20kg bag of **MasterTop 538** mixed with 3.5 litres of water yields 9.5 litres. Approximate coverage rates offered but are subject to floor profile variations and irregularities: 2.1 kg/1m<sup>2</sup> per 1mm thickness.

### SEALING AND COATING

Before installation of resin finishes or floor coverings, the requirements for critical moisture percentage content for the particular floor covering have to be observed. Prior to laying a top coat, prepare the hardened **MasterTop 538** by light abrasion and vacuum cleaning, prime with the recommended primer for the anticipated topcoat.

### CLEANING

Tools should be cleaned with water before the material hardens. Hardened material will need to be mechanically removed.

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### PROTECTION ON COMPLETION

Ensure the **MasterTop 538** is not subject to draughts during the first 6 hours of curing as this may lead to cracking and crazing. Tape up doorways with polythene if necessary, to prevent air movement during this period. Subsequently, allow for some ventilation to reduce the relative moisture in the air, allowing the screed to dry and gain sufficient strength. Ensure adequate protection from other trades and traffic after installation. A sealcoat of **MasterCast 141** can be applied as a curing mechanism. Once the surface can take light foot traffic, Spray/Roll on **MasterCast 141** @ Rate of 8m<sup>2</sup> per litre.

### HARDENING AND DRYING TIMES

The **MasterTop 538** may be walked on after 6-8 hours after placing but subject to ambient temperatures ideally at 23 °C and may be sanded if required 24 hours after application. Where a floor finish is to be installed, it may be installed after 24 to 48 hours, depending on the type of finish or thickness of the **MasterTop 538** Substrate and ambient moisture content should be measured and compared to the requirements of any topcoat system prior to their application.

### MODEL SPECIFICATION

**MasterTop 538** is to be supplied and laid on a suitable sound and vacuum cleaned concrete or screed. Primed to be as per exposed trafficked environment outlined under "priming" in the product data sheet. Minimum thickness of 6 mm by hand or by pump 8 mm to 30 mm maximum thickness. To be mixed and laid in accordance with the latest Technical Datasheet.

### SUBSTRATE MOVEMENT

All moving joints must be carried through the **MasterTop 538** and properly sealed. Construction and expansion joints and cracks may be covered but if substrate movement occurs the **MasterTop 538** will reflect the joint or underlying crack.

### PACKAGING

**MasterTop 538** is available in 20kg polyethylene lined paper bags.

### SHELF LIFE

**MasterTop 538** has a shelf life of 12 months if kept in a dry, cool store in the original, unopened packs. If stored at high temperatures and/or high humidity conditions, the shelf life may be reduced.

### COLOURS

The addition of iron oxide may be added to the mix at a rate of 0.5 kg to 1.5 kg depending on the shade required. Whilst mixing during the first phase of approximately 3 litres of water per 20 kg of **MasterTop 538**, slowly add the pigment powder and thoroughly mix until the product is homogenous and free of colour streaks, then add the balance of the water for the required consistency and mix thoroughly. Insufficient mixing will result in colour variances and streaking.

### HEALTH AND SAFETY

Avoid inhalation of dust and contact with skin and eyes. Suitable protective clothing, gloves, eye protection and respiratory protective equipment should be worn. The use of barrier creams provides additional skin protection. If contact with skin occurs, wash with water and soap. Splashes into eyes should be washed immediately with plenty of clean water and medical advice sought.

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### NOTE

Technical support, where provided, does not constitute supervisory responsibility. For additional information contact your local MB Construction Chemicals Solutions South Africa (Pty) Ltd representative. MB Construction Chemicals Solutions South Africa (Pty) Ltd shall not be liable for technical advice provided.

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\* Properties listed are based on laboratory controlled tests.

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