

MasterSeal[®] 578

An elastomeric, highly flexible cementitious waterproof coating for concrete and masonry structures

DESCRIPTION

MasterSeal 578 is a two-component, cement based, flexible coating for waterproofing and protection of concrete and masonry structures, cement and gypsum boards.

MasterSeal 578 powder is a blend of Portland cements, selected silica sands and modifying agents. When mixed to a slurry consistency with **MasterSeal 578** liquid polymer emulsion, can be easily applied by brush, roller or spray equipment. It cures to form an elastomeric flexible membrane.

MasterSeal 578 must be reinforced with mesh across all construction joints and cracks. The reinforcing mesh may be either 100% virgin polypropylene or an alkali resistant glass-fibre mesh. Consult your local Master Builders Solutions Technical Service Representative for further advice on the correct selection of mesh.

TYPICAL APPLICATIONS

- Suitable for internal and external applications
- Waterproofing and protection of roofs, terraces, balconies, bathrooms and other wet areas (before tiles are installed using a proprietary tile adhesive.)
- Waterproofing of water retaining and hydraulic structures
- Waterproofing of lightweight cement blocks, plasterboard render and cementitious surfaces
- Flexible protection of concrete structures subject to minor deformation under load.
- Protection of cementitious renders and concrete with cracks (caused by shrinkage, minor movement or dynamic stresses) and against infiltration of water and aggressive elements from the atmosphere.
- Protection of concrete structural elements repaired with products from the **MasterEmaco** or **MasterBrace** ranges against the penetration of carbon dioxide.
- Protection of concrete surfaces from sea-water and deicing salts, chloride attack and carbonation

ADVANTAGES

- High performance: accommodates movement up to 2 mm, when applied at 2 mm thickness
- Excellent elongation at failure
- Excellent mechanical characteristics
- Easy application due to product's consistency
- Possibility to apply on existing coverings
- Compatible with ceramic, mosaic and natural stone coverings
- Excellent adhesion
- Retains flexibility when submerged
- Flexible under all environmental conditions
- High resistance to carbon dioxide diffusion: Protects concrete from rebar corrosion. A 1mm coating provides anti-carbonation cover equivalent up to 40 cm of concrete
- Resistant to the penetration of aggressive substances which are present in the atmosphere (such as carbon dioxide, sulphur dioxide and sulphuric anhydride) and soluble salts which are present in seawater or in the ground (such as chlorides and sulphates)
- UV resistant, can be used as final coating in exterior applications
- Good chemical resistance against soft water, domestic waste water, manure or other liquids moderately aggressive to mineral substrates
- Long service life even in rigid climatic conditions like coastal or industrial areas
- Non-toxic; suitable for use in contact with potable water

PACKAGING AND COLORS

MasterSeal 578 is supplied in 30 kg unit (20 kg Powder + 10 kg liquid) and available in grey.

STANDARDS

MasterSeal 578 meets the requirements defined by EN 1504-9 and EN 1504-2.

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TYPICAL PROPERTIES*

Application data of product (at +20°C - 50% R.H.)

Characteristics	Result
Colour of mix:	grey
Density of mix:	1.6 kg / L
Application temperature	from +8°C to +40°C
Pot life of mix:	> 1 h
Adhesion to concrete - after 28 days at +20°C and 50% R.H. EN 1504-2 / EN 1542	≥ 0.8 N/mm ²
Thermal compatibility to freeze/thaw cycles with de-icing salts, measured as Adhesion EN 1504-2 / EN 1542	≥ 0.8 N/mm ²
Elasticity expressed as elongation - after 28 days at +20°C and 50% R.H. ASTM D 412	≥ 120%
Static crack-bridging at -20°C expressed as maximum crack width - after 28 days at +20°C and 50% R.H. EN 1504-2 / EN 1062-7	class A5 (+20°C) (> 2.5 mm)
Dynamic crack-bridging at +20°C expressed as resistance to cracking cycles EN 1504-2 / EN 1062-7	class B4.2 (+20°C)
Permeability to water vapour - equivalent air thickness EN 1504-2 / EN ISO 7783-1	class 1 (SD < 5)
Impermeability to water, expressed as capillary absorption EN 1504-2 / EN 1062-3	< 0.05 kg/m ² ·h ^{0.5}
Permeability to carbon dioxide (CO ₂) - diffusion in equivalent air layer thickness CO ₂ (S _D) EN 1504-2 / EN 1062-6	> 100 m
Impermeability to water under pressure (1.5 bar for 7 days of positive lift) EN 1504-2 / EN 14891-A.7	no penetration
Crack-bridging ability at +23°C EN 1504-2 / EN 14891-A.8.2	> 1 mm
Initial adhesion strength EN 1504-2 / EN 14891-A.6.2	> 1 N/mm ²
Adhesion after application of heat source EN 1504-2 / EN 14891-A.6.5	1.3 N/mm ²
Adhesion after freeze-thaw cycles EN 1504-2 / EN 14891-A.6.6	≥ 0.7 N/mm ²
Adhesion after immersion in basic water EN 1504-2 / EN 14891-A.6.9	≥ 0.7 N/mm ²
UV resistance according to ASTM G154-16(500hrs)	resistant

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APPLICATION GUIDELINES

Substrate preparation:

The surface to be coated must be clean and sound. Remove all traces of formwork, release agents, previous coatings, laitance, organic growth and any other contaminants that may affect the bond adversely. Suitable cleaning methods include ultra high-pressure water jetting and grit blasting. Aggressive percussive methods such as scabbling or scarifying are not recommended unless followed by grit blasting, wire brushing or high-pressure water jetting. After the above treatment, surfaces must be thoroughly rinsed with clean potable water to remove all dust and loose particles.

Cracks bolt holes and large surface defects must be cut out and filled solid with **MasterSeal 590** or one of the **MasterEmaco** range of repair material. Small blowholes in the concrete should be filled with a thixotropic mix of **MasterSeal 578** Powder with reduced liquid content.

CURING

Under hot or excessive drying conditions adequate protective shielding should be foreseen. In cold, humid or unventilated areas it may be necessary to leave the application for a longer curing period. **MasterSeal 578** needs to cure under dry-air conditions. Additional heating and/or ventilation can assist proper curing. NEVER use dehumidifiers during curing periods.

COVERAGE / YIELD

Approx. 1 L / m² / coat @ 1 mm thickness (2 layers recommended). An additional 0.5 kg/m² is required when embedding Master Builders Solutions approved mesh. Yield Approx. 18.75 L / 30 kg unit.

Application by trowel or roller:

Approx. 1.6 kg/m² per mm of thickness.

N.B.: the consumption figures indicated are for a seamless film on a flat surface and are higher if applied on uneven substrates.

STORAGE AND SHELF LIFE

Part A (powder): Shelf life is 12 months from date of manufacturing in unopened original bags. Product must be kept out of direct sunlight, in a dry, cool place, stored clear of the ground on pallets. Avoid excessive compaction.

Part B (liquid): Shelf life is 12 months from the date of manufacturing in unopened original containers. Product must be kept out of direct sunlight and in a dry, cool, preferably air-conditioned warehouse below 35°C temperature. Store clear of the ground on pallets. Do not stack pallets.

HEALTH AND SAFETY

MasterSeal 578 Powder is cement based and may be irritating to the skin and eyes. Gloves and eye protection should be worn. The use of dust masks is recommended.

MasterSeal 578 Liquid should not be ingested, accidental splashes of the material to the skin or eyes should be immediately washed off with clean water. In the event of prolonged irritation, seek medical advice.

MasterSeal 578 contains no solvent, safe to handle and use approved for contact with potable water. For further information refer to the material safety datasheet.

QUALITY AND CARE

All products originating from Master Builders Solutions Dubai, UAE facility are manufactured under a management system independently certified to conform to the requirements of the quality, environmental and occupational health & safety standards ISO 9001 and ISO 14001.

* Properties listed are based on laboratory-controlled tests.

® = Registered trademark of the MBCC Group in many countries.

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STATEMENT OF RESPONSIBILITY

The technical information and application advice given in this Master Builders Solutions publication are based on the present state of our best scientific and practical knowledge. As the information herein is of a general nature, no assumption can be made as to a product's suitability for a particular use or application and no warranty as to its accuracy, reliability or completeness either expressed or implied is given other than those required by law. The user is responsible for checking the suitability of products for their intended use.

NOTE

Field service where provided does not constitute supervisory responsibility. Suggestions made by Master Builders Solutions either orally or in writing may be followed, modified or rejected by the owner, engineer or contractor since they, and not Master Builders Solutions, are responsible for carrying out procedures appropriate to a specific application.

