

MasterSeal 6100 FX

One component elastic and flexible lightweight membrane for waterproofing and concrete protection, available in LIGHT GREY and WHITE colour. WRAS approval number: 1509539 for use in contact with potable water.

DESCRIPTION

MasterSeal 6100 FX is a single component, cement based, elastic and flexible lightweight membrane for waterproofing and concrete protection.

When mixed with water, MasterSeal 6100 FX obtains a fluid consistency so that it can be easily hand applied or sprayed.

MasterSeal 6100 FX is composed of specially selected cements, lightweight fillers, sand and special polymers in powder form.


FIELD OF APPLICATION

- For interior and exterior application
- As a waterproof lining for water retaining structures
- External waterproof lining for reservoir roof applications
- To provide foundation protection
- To protect concrete surfaces from carbonation and chloride attack
- For areas constantly submerged in water
- Suitable as a blow hole filler prior to overcoating.

Contact your local Master Builders Solutions representative regarding any application required not mentioned here.

FEATURES AND BENEFITS

- One-component formulation with high elastic properties: Only needs to mix with water. Reduces storage and transport costs as well as packaging waste.
- Elastic down to -10 °C: High durability and protection with reduced cracking due to embrittlement.
- Low density/Lightweight formulation: Low consumption providing high yield (more than 50% compared to ordinary waterproofing slurries) and time saving in application.
- Rapid curing: Allows early serviceability. Tanks can be filled after only 3 days.
- Waterproof at 2 mm thickness: Resists up to 5 bars (50 meter head) of water pressure.
- Excellent adhesion
- Elasticity maintained in immersion
- Breathable: Water vapor permeable.
- 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.
- Sulphate resistant
- No ammonia smell: Can be applied in closed spaces.
- Reduced efflorescence appearance risk
- UV resistant, light grey and white versions available: can be used as final coating in exterior applications.
- Contributes to LEED credits: contains more than 5% of recycled material.

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BASF Belgium Coordination Center Comm. V. Business Belux - Construction Chemicals Nijverheidsweg 89, B-3945 Ham	
11 BE0015/01	
EN 1504-2 Elastic and flexible cementitious waterproofing and protective coating EN 1504-2 Principles 1.3 / 2.3 / 8.3	
Adhesion strength by pull off test	≥ 1,5 N/mm ²
Abrasion resistance	AR1
Adhesion after thermal compatibility with de-icing salt influence (50) and thundershower cycling (10)	≥ 1,5 N/mm ² No bubbles, cracks and delamination
Capillary absorption and permeability to water	w < 0,1 kg/m ² h ^{0,5}
Crack bridging ability (A)	A4 (+23°C)
Crack bridging ability (B)	A3 (-10°C) B3.1 (-10°C) B3.1 (+23°C)
Impact resistance	Class I
Permeability to CO ₂	S ₅ > 50 m
Reaction to fire	Class E
Water vapour permeability	Class I
Dangerous substances	Comply with 5.4 of EN 1504

APPLICATION METHOD

(a) Surface Preparation

Surfaces must be clean, sound and free of oil, grease and other contaminants. Carefully remove all loose particles and dust.

All substrate coatings, defective renders, formwork treatments and other previously applied materials that may affect the bond adversely should be removed.

The temperature of the substrate should be minimum +5°C and maximum +35°C.

Plug active leaks with MasterSeal 590.

Concrete, cementitious substrates

Prepare the surface by grinding, sandblasting, or wire brushing. Remove remaining dust and particles by suitable measures such as the use of compressed air. Repair any damaged concrete with a suitable MasterEmaco mortar. Apply a 3mm layer of MasterSeal 586 waterproof levelling mortar; if required prior to overcoating with MasterSeal 6100 FX.

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Masonry

Prepare the surface by wire brushing. Remove remaining dust and particles by suitable measures such as the use of compressed air. All mortar joints to be flush-pointed with a suitable cosmetic mortar such as MasterEmaco N5200. Apply a 3mm layer of MasterSeal 586 waterproof levelling mortar; if required prior to overcoating with MasterSeal 6100 FX.

(b) Mixing

MasterSeal 6100 FX is supplied in pre-measured units and should be mixed on site in clean containers.

Blend 15kg of powder into approximately 5.6 litres (maximum 6.2 l) of water using a paddle mixer attachment in a slow-speed drill (400 – 600 rpm). Mix until a thick, batter-like consistency is obtained.

Leave MasterSeal 6100 FX to stand for 1 – 2 minutes to allow full saturation to take place. Re-mix, adding a small quantity of water, if required to restore the consistency.

Do not mix more material than the quantity which can be used in 45 minutes.

For the first coat, additional 0.5 litre per bag can be added to the mixture. Do not exceed 6.4 litres water addition per bag.

(c) Application

MasterSeal 6100 FX can be applied by brush, trowel or roller. Roller application is possible, but not recommended.

Always apply the mix to a pre-dampened surface. High suction substrates require more dampening than dense substrates. However, make sure there is no freestanding water.

First coat

The first coat **MUST** be worked into the substrate with a stiff brush, while still wet, to ensure an intimate bond to the substrate.

Care must be taken not to spread the material too thinly. When the material begins to drag or “ball”, do not add more water, but dampen the substrate again.

Allow at least 2 hours (can be up to 5 hours, depending on application conditions) to cure before applying a second coat.

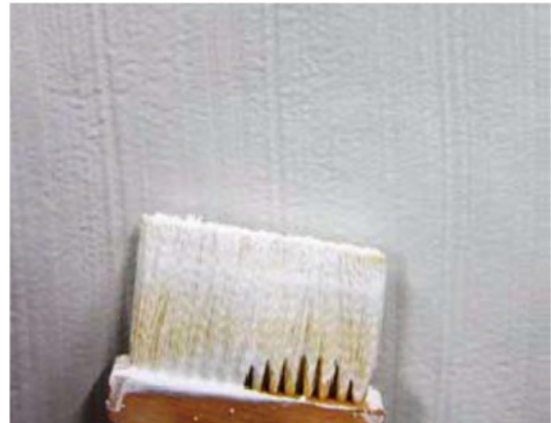


Image 1 : Application by brush



Image 2: Spray application of MasterSeal 6100



Image 3: Finish of MasterSeal 6100 FX application

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Second coat

Dampen the first coat and remove excess moisture. Brush or broom the mix onto the surface (as above), finishing in the opposite direction to the previous coat.

FINISHING AND CLEANING

To improve the aesthetic appearance an additional layer can be applied by spray, eventually sponge floated to give a uniform surface.

Tools can be cleaned from fresh material with water. Once dry/cured they can only be cleaned mechanically.

CURING

Under hot or excessive drying conditions fog-spray after the initial set has taken place for as long as practicable.

In cold, humid or unventilated areas it may be necessary to leave the application for a longer curing period or to introduce forced air movement.

NEVER use dehumidifiers during curing periods.

WORKING TIME

45 minutes in 20°C ambient and substrate temperature.

PACKAGING

MasterSeal 6100 FX is available in 15 Kg bags.

COVERAGE

Approximately 1.2 Kg of mixed product (approx. 0.9 Kg of powder product) per m² and mm of thickness.

For a 2 mm thickness application, this means that one bag of 15 Kg covers approx. 8 m².

Consumption is influenced by the roughness of the substrate. On rough substrates the quantities required will increase significantly. In these cases, to obtain real consumption calculation based on in-situ tests might be required.

STORAGE

MasterSeal 6100 FX should be stored under cover and clear off the ground. Protect the materials from all sources of moisture and do not store at temperatures over +30°C.

SHELF LIFE

12 months in unopened original bags if stored at above mentioned storage conditions.

WATCH POINTS

- Do not apply at temperatures below +5°C nor above +35°C.
- Do not apply MasterSeal 6100 FX to frozen substrates or if the ambient temperature is below +5°C or expected to fall below +5°C within 24 hours.
- Avoid application in direct sunlight.
- Do not mix with cement, sand or other materials that can alter product performance.
- Under no circumstances should MasterSeal 6100 FX be re-tempered by the later addition of water.

HANDLING AND TRANSPORT

Usual preventive measures for the handling of chemical products should be observed when using this product, for example do not eat, smoke or drink while working and wash hands when taking a break or when the job is completed.

Specific safety information referring the handling and transport of this product can be found in the Material Safety Data Sheet. For full information on Health and Safety matters regarding this product the relevant Health and Safety Data Sheet should be consulted.

Disposal of product and its container should be carried out according to the local legislation in force. Responsibility for this lies with the final owner of the product.

CONTACT DETAILS

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Product Data				
Property	Standard	Unit	Data	
Density of mixed material	EN 1015-6	g/cm ³	approx. 1.2	
Mixing water	-	l/bag	5.6-6.2 (0.38 – 0.41 l/Kg)	
Mixing time	-	minutes	Approx. 3	
Maturing time	-	minutes	1-2	
Workability time	-	minutes	Approx. 45 (+20°C)	
	-		Approx. 30 (+30°C)	
Applicable thicknesses	-	mm	2 (up to 5 for reprofiling)	
Application temperature (substrate and material)	-	°C	from +5 to +35	
Service temperature	-	°C	from -20 to +60	
Exposure to mechanical loads after	-	days	3	
Exposure to water pressure after	-	days	3	
Tensile strength	28 days	EN ISO 527-1/-2	MPa	1,6
Elongation	28 days	EN ISO 527-1/-2	%	29 (dry storage)
Capillary water absorption	EN 1062-3	kg/m ² h ^{0,5}		0.02
Positive side waterproofing	EN 12390-8	bar		up to 5 (2mm thickness)
Negative side waterproofing	based on UNI 8298-8	bar		up to 2.5 (2mm thickness)
Static crack bridging:	EN 1062-7	mm		up to 2.0 (+20°C)
				up to 0.6 (-10°C)
Static crack bridging with conditioning	EN 1062-7 EN 1062-11	-		A4 (+20°C)
				A3 (-10°C)
Dynamic crack bridging with conditioning	EN 1062-7 EN 1062-11	-		B 3.1 (+20°C)
				B 3.1 (-10°C)
Water vapour permeability	EN ISO 7783-1/2	SD		1.3 m (Class I, required < 5 m)
CO ₂ permeability	EN 1062-6	SD		104 m (required > 50m)

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Product Data			
Property	Standard	Unit	Data
Adhesion strength	EN 1542	N/mm ²	2.0
Adhesion strength after freeze-thaw cycles (50) with de-icing salts and Thunder Shower cycling (10)	EN 13687-1 EN 13687-2	N/mm ²	1.7
Abrasion resistance	EN ISO 5470 -1	mg	1150 (required < 3000 m)
Impact resistance:	EN ISO 6272 -1	Nm	5 (Class I, required > 4)
Resistance to salt solutions:			
Synthetic seawater	based on DIN 50905-4	-	No change observed in the product after 175 days of permanent immersion
Salt mix solution 30 g/l NaCl, NaNO ₃ , and Na ₂ SO ₄	based on WTA-Merkblatt	-	
KJ solution (10 g/l)	-	-	
NaSO ₄ solution	based on Wittekindt-process	-	
Tap water	-	-	

Note: Hardening times are measured at 21°C ± 2°C and 60% ± 10% relative humidity. Higher temperatures and/or higher R.H. can shorten these times, and vice versa. Technical data shown are statistical results and do not correspond to guaranteed minima. Tolerances are those described in appropriate performance

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Health and Safety

*For full information on Health and Safety matters regarding this product the relevant Health and Safety Data Sheet should be consulted.

The following general comments apply to all products.

As with all chemical products, care should be taken during use and storage to avoid contact with eyes, mouth, skin and foodstuffs, (which may also be tainted with vapour until the product is fully cured and dried). Treat splashes to eyes and skin immediately. If accidentally ingested, seek medical attention. Keep away from children and animals. Reseal containers after use.

Solvent Based Products

Use in well ventilated areas; avoid inhaling. Suitable respiratory equipment may be needed, eg when spraying. Can cause skin, eye irritation. Wear protective eye shields and gloves during use. Do not smoke or allow sparks or naked lights when stored or in use.

Resin Products

Can cause irritation, dermatitis or allergic reaction. Use protective equipment particularly for skin and eyes. Use only in well ventilated areas.

Spillage

Chemical products can cause damage; clean spillage immediately.

DISCLAIMER

"Master Builders Solutions UK Ltd" (the Company) endeavours to ensure that advice and information given in Product Data Sheets, Method Statements and Material Safety Data Sheets (all known as Product Literature) is accurate and correct. However, the Company has no control over the selection of its products for particular applications. It is important that any prospective customer, user or specifier, satisfies him/her-self that the product is suitable for the specific application. In this process, due regard should be taken of the nature and composition of the background/base and the ambient conditions both at the time of laying/applying/installing the material and when the completed work is to be brought into use.

Accordingly, no liability will be accepted by the Company for the selection, by others, of a product, which is inappropriate to a particular application.

Products are sold subject to the Company's standard conditions of sale and all customers, users and specifiers, should ensure that they examine the Company's latest Product Literature.