

MasterSeal 6100 FX

Sustainable, one component, elastic and flexible lightweight membrane for waterproofing and concrete protection, available in LIGHT GREY and WHITE color

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 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: tanks, irrigation channels, dams, etc.
- To provide foundation protection.
- To protect concrete surfaces from carbonation and chloride attack.
- For concrete elements in road infrastructure like tunnels, bridges, viaducts, etc.
- For areas constantly submerged in water

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



FEATURES AND BENEFITS

- **Eco-Efficient:** Waterproofing with MasterSeal 6100 FX brings significant cost savings and a high degree of eco-efficiency as it:
 - reduces greenhouse gas emissions by up to 70%*
 - reduces acid rain emissions by up to 80%*
 - reduces summer smog (NMVOC) by up to 90%*
 - reduces ozone hole depletion by a minimum of 70%*(* compared to other waterproofing technologies)
- **One-component formulation with high elastic properties:** Only needs to mix with water. Reduces storage and transport costs as well as packaging waste.
- **Low density / Lightweight formulation:** Low consumption providing high yield (up to 85% more compared to ordinary waterproofing slurries) and time saving in application.
- **Elastic down to -10 °C:** High durability and protection with reduced cracking due to embrittlement.
- **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 vapour permeable.
- **High resistance to carbon dioxide diffusion:** Protects concrete from rebar corrosion. A 2 mm coating provides anti-carbonation cover equivalent up to 40 cm of concrete.
- **Sulphate and salt resistant**
- **Reduced efflorescence appearance risk**
- **UV resistant, light grey and white versions available:** can be used as final coating in exterior applications.
- **No ammonia smell and very low emission:** Can be applied in closed spaces.
- **Contributes to LEED credits:** contains more than 5% recycled material.

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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 water 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 concrete damages with a suitable MasterEmaco mortar.

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 like MasterEmaco N 5200.

(b) Mixing

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

Blend 15 kg 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, butter-like consistency is obtained.

Leave MasterSeal 6100 FX to stand for 2 - 3 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.



Image 1 : Application by brush



Image 2: Spray application of MasterSeal 6100 FX

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.

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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.

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.



Image 3: Finish of MasterSeal 6100 FX application

WORKING TIME

45 minutes in 20 °C ambient and substrate temperature.

FINISHING

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

CLEANING

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.

PACKAGING

MasterSeal 6100 FX is available in 15 Kg paper bags.

COLOURS

Light grey and white.

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 at least 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 above +35 °C.
- Do not apply MasterSeal 6100 FX at temperatures below +5°C or if 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.
- Before applying MasterSeal 6100 FX in contact to drinking water, check local regulations.

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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.

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Master Builders Solution Belgium nv Nijverheidsweg 89, B-3945 Ham 11 BE0015/02 MasterSeal 6100 FX (BE0015/02) EN 1504-2:2004 Elastic and flexible cementitious waterproofing and protective coating EN 1504-2 Principles 1.3 / 2.2 / 5.1 / 8.2	
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 thunder shower 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) A3 (-10°C)
Crack bridging ability (B)	B3.1 (-10°C) B3.1 (+23°C)
Impact resistance	Class I
Permeability to CO ₂	S _D > 50 m
Reaction to fire	Class E
Water vapour permeability	Class I
Dangerous substances	Comply with 5.3 of EN 1504-2



Certificate number BB-562-24047-0095-001
Certification Institute BCCA

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Product Data			
Property	Standard	Data	Unit
Density of mixed material	EN 1015-6	approx. 1.2	g/cm ³
Mixing water	-	5.6 - 6.2 (0.38 - 0.41)	l/bag l/kg
Mixing time	-	approx. 3	minutes
Maturing time	-	1 - 2	minutes
Workability time	-	approx. 45 (+20°C)	minutes
		approx. 30 (+30°C)	
Applicable thickness	-	2 (up to 5 for reprofiling)	mm
Application temperature (substrate and material)	-	from +5 to +35	°C
Service temperature	-	from -20 to +60	°C
Exposure to mechanical loads after	-	3	days
Exposure to water pressure after	-	3	days
Tensile strength 28 days	EN ISO 527-1/-2	1.6	MPa
Elongation (dry storage) 28 days	EN ISO 527-1/-2	29	%
Capillary water absorption	EN 1062-3	0.02	kg/m ² h ^{0.5}
Positive side waterproofing (2mm thickness)	EN 12390-8	up to 5	bar
Negative side waterproofing (2mm thickness)	based on UNI 8298-8	up to 1	bar
Static crack bridging:	EN 1062-7	up to 2.0 (+20°C)	mm
		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 S _D	EN ISO 7783-1/2	1.3 (Class I, required < 5)	m
CO ₂ permeability S _D	EN 1062-6	104 (required > 50)	m
Adhesion strength	EN 1542	2.0	N/mm ²
Adhesion strength after freeze-thaw cycles (50) with de-icing salts and Thunder Shower cycling (10)	EN 13687-1 EN 13687-2	1.7	N/mm ²
Abrasion resistance	EN ISO 5470-1	1150 (required < 3000 m)	mg
Impact resistance	EN ISO 6272-1	5 (Class I, required > 4)	Nm
Reaction to Fire	EN 13501-1	Class E	-

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Product Data (continued)		
Resistance to salt solutions:	Standard	Result
Synthetic seawater (280g/l NaCl + 50g/l MgCl ₂ + 24g/l CaCl ₂ + 70g/l MgSO ₄ + 2g/l NaHCO ₃)	DIN 50905-4	No change observed in the product after 175 days of permanent immersion
Salt mix solution (30 g/l NaCl + 30 g/l NaNO ₃ + 30 g/l Na ₂ SO ₄)	WTA-Merkblatt	
KJ-solution (10 g/l)	-	
Na ₂ SO ₄ - solution (100 g/l)	Wittekindt-method	
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

DISCLAIMER

In view of widely varying site conditions and fields of application of our products, this technical data sheet is meant to provide general application guidelines only. This information is based on our present knowledge and experience. The customer is not released from the obligation to conduct careful testing of suitability and possible application for the intended use. The customer is obliged to contact the technical help-line for fields of application not expressly stated in the technical data sheet under "Fields of Application". Use of the product beyond the fields of application as stated in the technical data sheet without previous consultation with Master Builders Solutions and possible resulting damages are in the sole responsibility of the customer. All descriptions, drawings, photographs, data, ratios, weights i.e. stated herein can be changed without advance notice and do not represent the condition of the product as stipulated by contract. It is the sole responsibility of the recipient of our products to observe possible proprietary rights as well as existing laws and provisions. The reference of trade names of other companies is no recommendation and does not exclude the use of products of similar type. Our information only describes the quality of our products and services and is no warranty. Liability is accepted for incomplete or incorrect particulars in our data sheets only in the event of intent or gross negligence, without prejudice to claims under product liability laws.

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