

# MasterSeal® 6100 FX

Cement based, one component elastic and flexible waterproofing membrane

## DESCRIPTION

**MasterSeal® 6100 FX** is a single component, cement based, elastic and flexible lightweight membrane for waterproofing and concrete protection. **MasterSeal® 6100 FX** is composed of specially selected cements, lightweight fillers, sand and special polymers in powder form.

**EN 1504-2**

**WRAS approval number: 1509539**  
(for use in contact with potable water)

## 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

## 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.

## APPLICATION METHOD

### 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. Plug active leaks with **MasterSeal® 591**. Chamfer must be done with **MasterEmaco® S 488** If the coating material immediately loses its water and gets a matt appearance during the application, it is understood that the surface is fast drying or not sufficiently wet.

### 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® S** mortar.

**Masonry** Prepare the surface by wire brushing. Remove remaining dust and particles by suitable measures such as the use of compressed air. The necessary joint repairs should be repaired with **MasterEmaco® S** structural repair mortars.

### 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 4.5 liters (maximum 5.0 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 0.4 liter per bag can be added to the mixture. Do not exceed 5.1 liters water addition per bag.

### Application

**MasterSeal® 6100 FX** can be applied by brush or trowel. 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

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

### 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.

### 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.

### WORKING TIME

45 minutes in 20°C ambient and substrate temperature.

### PACKAGING

MasterSeal 6100 FX is available in 12 Kg bags.

### COVERAGE

Approximately 1.2 Kg of mixed product (approx. 0.9 Kg of powder product) per m<sup>2</sup> and mm of thickness. 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.

### HEALTH AND SAFETY PRECAUTIONS

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.

### DISCLAIMER

The technical information given in this publication is based on the present state of our best scientific and practical knowledge Master Builders Solutions Yapı Kimyasalları Sanayi ve Ticaret Ltd. Şti. is only responsible for the quality of the product. Master Builders Solutions Yapı Kimyasalları Sanayi ve Ticaret Ltd. Şti. is not responsible for results that may occur because the product is used other than advised and/or out of instructions regarding the place and the method of use. This technical form is valid only till a new version is implemented and nullifies the old ones.

### CONTACT INFORMATION

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MasterSeal® 6100 FX Technical Data Sheet -Revision Date: 04/2022

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Product Data			
Property	Standard	Unit	Data
Density of mixed material	EN 1015-6	g/cm <sup>3</sup>	approx. 1.2
Mixing water	-	l/bag	4.5-5.0
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 <sup>2</sup> h <sup>0.5</sup>	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	S <sub>D</sub>	1.3 m (Class I, required < 5 m)
CO <sub>2</sub> permeability	EN 1062-6	S <sub>D</sub>	104 m (required > 50m)
Adhesion strength	EN 1542	N/mm <sup>2</sup>	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 <sup>2</sup>	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:			No change observed in the product after 175 days of permanent immersion
Synthetic seawater	based on DIN 50905-4	-	
Salt mix solution 30 g/l NaCl, NaNO <sub>3</sub> , and Na <sub>2</sub> SO <sub>4</sub>	based on WTA-Merkblatt	-	
KJ solution (10 g/l)	-	-	
Na <sub>2</sub> SO <sub>4</sub> 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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21 DOP NO: 02.1504.2.040	
EN 1504-2 : 2004 MasterSeal 6100 FX Beton Yapıların Korunması ve Tamiri İçin Mamuller ve Sistemler. Bölüm:2 Beton için Yüzey Koruma Sistemleri (Products and systems for the protection and repair of concrete structures Part 2: Surface protection systems for concrete)  Prensip 1.3 Yabancı madde girişine karşı koruma, 2.2 Nem Kontrolü, 8.2 Nem içeriğini sınırlayarak direnci artırma amaçlı kaplama malzemesi (Principles: 1.3 Protection against ingress, 2.2 Moisture control, 8.2 Increasing resistivity )	
CO2 Geçirgenliği (Permeability to CO2)	CO2 SD Geçirgenliği > 50m (CO2 SD permeability > 50m)
Su Buharı Geçirgenliği (Permeability to water vapour)	Sınıf 1 Class 1
Kapiler Su Emme ve Su Geçirgenliği (Capillary absorption and permeability to water)	w<0,1 kg /m². \h
Çekip Koparma Deneyi Yoluyla Yapışma Dayanımı (Adhesion strength by pull-off test)	Çatlak köprüleme veya / esneyebilen sistemlerde trafik yükü olmadan : ≥ 0,8 N/mm² (0,5 min) (Crack-bridging or flexible systems Without trafficking:>0,8 N/mm²(0,5 min)
Yangına karşı tepki (Reaction to fire)	E
Tehlikeli maddeler (Dangerous substances)	Madde 5.3 ' e uygun (Comply with clause 5.3)

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DOP NO: 03.14891.006 EN 14891 : 2017	
MASTERSEAL 6100 FX CM O2P: Düşük sıcaklıkta (-20 ° C) geliştirilmiş çatlak köprüleme kabiliyetine sahip, klorlu su ile temasa dirençli çimento esaslı sıvı uygulamalı su geçirimsiz ürün (CM O2P:Cementitious liquid-applied water impermeable product with improved crack bridging ability at low temperature (-20 °C) and resistant to contact with chlorinated water) Çimento Esaslı, Tek Bileşenli, Elastik ve Esnek Su Yalıtım Malzemesi (Cement Based, One Component, Elastic and Flexible Waterproofing Material)	
Başlangıç çekme yapışma mukavemeti (Initial tensile adhesion strength)	≥ 0,5 N / mm²
Suya daldırıldıktan sonra çekme yapışma mukavemeti (Tensile adhesion strength after water contact)	≥ 0,5 N / mm²
Isıyla yaşlandırıldıktan sonra çekme yapışma mukavemeti (Tensile adhesion strength after heat ageing)	≥ 0,5 N / mm²
Donma-çözünme çevrimlerinden sonra çekme yapışma mukavemeti (Tensile adhesion strength after freeze-thaw cycles)	≥ 0,5 N / mm²
Kireçli su ile temas ettikten sonra çekme yapışma mukavemeti (Tensile adhesion strength after contact with lime water)	≥ 0,5 N / mm²
Su Yalıtım (Waterproofing)	Penetrasyon Yok (No penetration)
Çatlak Köprüleme(Normal şartlar altında) (Crack bridging ability under standard conditions)	≥ 0,75 mm
Klorlu su ile temas ettikten sonra çekme yapışma mukavemeti (Tensile adhesion strength after contact with chlorinated water)	≥ 0,5 N / mm²
Çatlak Köprüleme (Düşük Sıcaklıkta '-5°C' (Crack bridging ability at low temperature(-5°C))	≥ 0,75 mm
Çatlak Köprüleme (Düşük Sıcaklıkta '-20°C' (Crack bridging ability at low temperature(-20°C))	≥ 0,75 mm