

MasterCrete I I 60

Class R4 cementitious mortar, thixotropic, fibre-reinforced, with normal setting time and compensated shrinkage, formulated for the repair and skimming of concrete with thicknesses ranging from 5 to 50 mm.

Material description

MasterCrete I I 60 is a high-performance thixotropic structural cementitious mortar (class R4 in accordance with EN 1504-3), made from high-performance hydraulic binders, selected aggregates, special admixtures and synthetic polyacrylonitrile (PAN). **MasterCrete I I 60** is suitable for the structural repair and smoothing of concrete structures, with thicknesses ranging from 5 to 50 mm, in a single coat. Furthermore, the special formulation ensures high dimensional stability, minimising the risk of cracking due to hydraulic shrinkage and guaranteeing excellent adhesion to both the old concrete (≥ 2 MPa) and the reinforcement bars.

MasterCrete I I 60 provides high protection against carbonation-induced corrosion for reinforcement, even without a passivating agent, provided that a concrete cover thickness of at least 10 mm is ensured.

Main uses

The thixotropic, structural cementitious mortar **MasterCrete I I 60** allows for the structural repair and smoothing of concrete surfaces, both horizontally and vertically, ensuring maximum effectiveness and durability. It can be applied manually with a smooth trowel or spatula or sprayed using a suitable machine, in thicknesses ranging from 5 to 50 mm in a single layer. Some examples of application are:

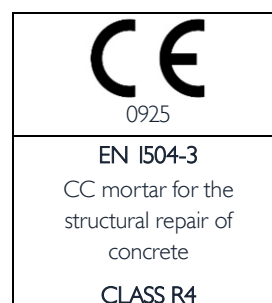
- restoration and reconstruction of concrete and reinforced concrete elements and structures, both structural and non-structural, including exposed concrete (beams, columns, terrace and balcony parapets, cornices);
- jacketing of reinforced concrete structures;
- restoration and repair of concrete elements and structures of any type and size in civil, industrial, or commercial buildings that exhibit deteriorated concrete, defects, or detachments;
- repair of concrete infrastructural structures: viaducts, bridges, tunnels, underpasses, etc.;
- extensive repair of concrete walls and repair of concrete casting defects such as gravel pockets and construction joints;

- reconstruction of the reinforced concrete and prestressed concrete structures;
- surface smoothing of concrete, reinforced concrete and prestressed concrete elements.

Features

- **Plastic shrinkage crack resistance:** **MasterCrete I I 60** is reinforced with polyacrylonitrile (PAN) synthetic fibres, which reduce the risk of surface micro-cracking during the plastic phase of the product.
- **Resistance to hydraulic shrinkage cracking:** thanks to the special formulation the product can effectively counteract drying shrinkage effects.
- **Excellent adhesion** on properly prepared substrates, both horizontally and vertically, even overhead.
- **Excellent aesthetic finish.**
- **Excellent resistance to penetration by aggressive environmental agents**, such as chlorides and sulphates carried by contact water.
- **High resistance to degradation** caused by cyclic freeze-thaw action, thereby ensuring greater protection of the reinforcement against corrosion.

In compliance with the European Regulations (EU No. 305/2011 and EU No. 574/2014), the product is CE marked in accordance with UNI EN 1504-3 (class R4) and the relevant DoP (Declaration of Performance).



MasterCrete II 60

Class R4 cementitious mortar, thixotropic, fibre-reinforced, with normal setting time and compensated shrinkage, formulated for the repair and skimming of concrete with thicknesses ranging from 5 to 50 mm.

Consumption

Approximately 18.0 kg/m² per cm of thickness.

Packaging and storage

MasterCrete II 60 is available in 25 kg bags.

Keep the product in its original packaging in a dry, protected location at a temperature between 5°C and 35°C.

Under the above conditions, the product has a shelf life of 12 months.

Preparation and method of application

Preparing the substrates

- Remove all sections of deteriorated and/or contaminated concrete from the surface, as well as any concrete that is not fully bonded and is starting to come away, so as to achieve a solid and macroscopically rough substrate with surface irregularities of at least 5 mm and aggregates visibly exposed for interventions with thickness equal to or greater than 1 cm, while in case of thicknesses smaller than 1 cm a CSP 5 or 6 (ICRI) obtained by shotblasting or light scarification are recommended. The edges of the repair area, for localised repairs, must be at right angles, allowing a minimum application thickness of 5 mm for the mortar.
- Remove any rust from reinforcing bars by brushing (manual or mechanical) or sandblasting.
- Treat the reinforcing bars with a corrosion-resistant coating from the **MasterCrete** range.
- Saturate the substrate with water until it is fully saturated but free of surface water (s.s.a.); ensuring clean, saturated surfaces is essential to guarantee high adhesion between the substrate and the applied material and to prevent cracking of the product.
- For large-scale projects involving mortar thicknesses exceeding 30 mm, the installation of a reinforcement mesh must also be included.

Preparation of mortar

Mix **MasterCrete II 60** for approximately 3–4 minutes in a concrete mixer or bucket with a low-speed drill with a whisk attachment, together with an amount of water equal to 3/4 of the total specified in the technical data sheet, gradually adding the remaining mixing water until a homogeneous mixture is obtained (do not exceed the maximum amount of water indicated in the technical data sheet).

Please contact the Master Builders Solutions technical service in case of doubt.

Application and trowelling

In the case of manual application, apply with a cement trowel or masonry trowel to a thickness of 5 to 50 mm in a single layer.

The product can also be applied by spraying using a suitable plastering machine, always ensuring that the maximum thickness per single layer does not exceed 50 mm.

For overhead applications, depending on the condition of the substrate, the environment, the mixture used, and the characteristics of any machine employed, the thickness should be reduced to approximately 20 mm.

Applications exceeding 50 mm are possible, provided they involve multiple layers and care is taken to leave the fresh layer “rough” or, better yet, to roughen it before applying the next layer. If the next layer is applied the following day, the hardened previous layer must be dusted and saturated to the surface.

For large-scale projects, note that for mortar thicknesses exceeding 30 mm, the installation of a reinforcement mesh must also be included.

The final surface must then be trowelled using a sponge trowel as soon as the mortar begins to set. The waiting time before trowelling varies depending on weather conditions. Proper trowelling is essential to prevent the formation of surface microcracks caused by plastic shrinkage.

MasterCrete II 60

Class R4 cementitious mortar, thixotropic, fibre-reinforced, with normal setting time and compensated shrinkage, formulated for the repair and skimming of concrete with thicknesses ranging from 5 to 50 mm.

Ageing and maturation

It is always recommended to cure surfaces exposed to the air for the first 24 hours using a wet method or by spraying a curing and anti-evaporation agent from the **MasterKure** range. This solution is particularly recommended in environmental conditions characterised by low relative humidity and high ventilation.

Application temperatures

Application environment temperature needs to be between +5°C and +35°C.

Warnings

- Do not apply directly on plaster, crumbly, mixed or painted surfaces.
- Do not apply **MasterCrete II 60** on smooth substrates; a mechanical roughening is necessary.
- Do not add additional water or fresh mortar to the mixture that has already begun to set.
- Do not add water beyond the dosage recommended in the technical data sheet.

Technical data

Product identification data	
Packaging	25 kg bags
Powder colour	Grey
Maximum size of the aggregate	1.2 mm
Mixing ratio	4.12 - 4.62 litres of water per bag (16.5-18.5%)
Consumption	approximately 18.0 kg/m ² per cm of thickness
Fresh density	approximately 2120 kg/m ³
Mixture consistency	Plastic-Thixotropic
Workability time (+20°C)	60 minutes
Application environment temperature	5°C to 35°C
Class (EN 1504-3)	R4
Type	CC cementitious mortar
Chloride ion content (EN 1015-17) – minimum requirement ≤0.05%	< 0.05%
Applicable layer thickness (minimum/maximum)	5 mm / 50 mm

MasterCrete II 60

Class R4 cementitious mortar, thixotropic, fibre-reinforced, with normal setting time and compensated shrinkage, formulated for the repair and skimming of concrete with thicknesses ranging from 5 to 50 mm.

Performance

(The performance data shown below was obtained in accordance with UNI EN 1504-3 with a water content of 17.5%)

Feature	Test method	Regulatory requirement	Product performance
Compression strength	UNI EN 12190	≥ 45 MPa at 28 days	1 day > 15 MPa 7 days > 45 MPa 28 days > 55 MPa
Flexural strength	UNI EN 196-1	none	1 day > 4 MPa 7 days > 6 MPa 28 days > 8 MPa
Elastic modulus	UNI EN 13412	$\geq 20,000$ MPa at 28 days	$> 20,000$ MPa
Adhesion to concrete	UNI EN 1542 (MC 0.40 substrate – UNI EN 1766)	≥ 2.0 MPa	> 2.0 MPa
Resistance to freeze-thaw cycles with de-icing salts	UNI EN 1542 after the UNI EN 13687/1 cycles on an MC 0.40-type substrate.	≥ 2.0 MPa	≥ 2.0 MPa
Resistance to accelerated carbonation	UNI EN 13295	Carbonation depth $\leq$ compared to that of the reference concrete type MC 0.45 (with a/c ratio = 0.45) according to UNI EN 1766	Specification superseded
Capillary absorption coefficient	UNI EN 13057	$\leq 0,5 \text{ kg} \cdot \text{m}^{-2} \cdot \text{h}^{-0,5}$	$\leq 0.25 \text{ kg} \cdot \text{m}^{-2} \cdot \text{h}^{-0,5}$
Reaction to fire (Euroclass)	EN 13501-1	-	A1

Safety instructions

For guidance on the correct and safe use, transport, storage and disposal of the product, please see the latest Safety Data Sheet (SDS).

Other services

For additional technical information, brochures, references, technical reports and technical assistance please visit www.master-builders-solutions.com/it-it or alternatively contact infomac@masterbuilders.com.

Scan QR code to visit the product page and download the latest version of this technical sheet and any additional documentation.



MasterCrete I I 60

Class R4 cementitious mortar, thixotropic, fibre-reinforced, with normal setting time and compensated shrinkage, formulated for the repair and skimming of concrete with thicknesses ranging from 5 to 50 mm.

Disclaimer

Since 16/12/1992, Master Builders Solutions Italia Spa has been operating under a Certified Quality System compliant with the UNI EN ISO 9001 Standard. Furthermore, the Environmental Management System is certified according to the UNI EN ISO 14001 Standard and the Safety Management System is certified according to the UNI ISO 45001 Standard.

For further information, please consult the local Technician of Master Builders Solutions. The technical advice on how to use our products, either written or verbally given, are based on the current state of our scientific and practical expertise, and does not imply the assumption of any guarantee and/or responsibility for the final results of works executed using our products.

Therefore, the customer is not exempted from the exclusive task and responsibility of verifying the suitability of our products for the intended use and purposes.

This version supersedes all the previous ones.

Master Builders Solutions Italia Spa

Via Vicinale delle Corti, 21 – 31100 Treviso – Italia

T +39 0422 429200 F +39 0422 421802

www.master-builders-solutions.com/it-it

e-mail: infomac@masterbuilders.com