

# MasterEmaco T 1100 TIX

Formerly: EMACO FAST TIXO

**Fast setting, premixed, thixotropic repair mortar, to apply with temperatures below -10°C, for the repair and fixing of concrete elements with thickness from 10 to 150 mm.**

## DEFINITION OF THE MATERIAL

MasterEmaco T 1100 TIX is a ready-mixed mortar containing a special pozzolanic binder, which is fast setting even at low temperatures.

## MAIN FIELDS OF APPLICATION

MasterEmaco T 1100 TIX allows work to be carried out very fast and at temperatures as low as -10°C. It can be used for example to:  
 anchor street drains, manhole covers, kerbs (for high density traffic or high stress situations use MasterEmaco T 1400 FR)




Application thickness is between 10 and 150 mm inclusive (from 10 to 100 mm for localised work; from 25 to 150 mm for bedding or fixing manhole covers, especially if large or subject to high density traffic; up to 50 mm when casting for repair or thickening work). For work that requires more than the recommended thickness, washed impurity-free aggregate (of the type and in the quantity to be defined according to the required thickness) must be added.

## CHARACTERISTICS

MasterEmaco T 1100 TIX meets the acceptance limits specified in the standard UNI EN 1504/3

- repair rigid reinforced concrete paving both horizontal and inclined (for high density traffic or high stress situations, use MasterEmaco T 1400 FR )
- fix of stone block paving
- anchor street drains, manhole covers, kerbs (for high density traffic or high stress situations use MasterEmaco T 1400 FR)

 1305 BASF Construction Chemicals Italia spa Via Vicinale delle Corti, 21 Treviso 13 IT0013/01	
EN 1504-3 Malta da ripristino rapida, tixotropica. EN 1504-3 metodi 3.1/3.2/4.4/7.1/7.2	
Resistenza a compressione:	Classe R4
Contenuto di cloruri:	< 0,05%
Adesione al supporto:	> 2,0 MPa
Resistenza alla carbonatazione:	Specifica superata
Modulo elastico:	> 20 GPa
Compatibilità termica:	
Gelo-disgelo	> 2,0 MPa (adesione dopo i cicli)
Temporali	> 2,0 MPa (adesione dopo i cicli)
Cicli a secco	> 2,0 MPa (adesione dopo i cicli)
Assorbimento capillare:	≤ 0,5 Kg/m <sup>2</sup> .h <sup>0,5</sup>
Resistenza all'abrasione	Classe III
Reazione al fuoco:	Classe A1
Sostanze pericolose:	Conforme 5.4

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Features peculiar to MasterEmaco T 1100 TIX are:

- high mechanical performance after few hours: very high mechanical strengths after few hours even with low temperatures;
- long open time: despite being a fast-setting mortar, it remains workable for approx. 10-15 minutes, depending on the temperature.
- high bond strength to concrete: this ensures the monolithic bond with the concrete substrate, any rebars and steel sections;
- high resistance to cracking: the material shows no sign of cracks even after 6 months assessed using the elliptical crack O-Ring test;

- resistance to aggressive environmental agents: the product is waterproof, impermeable to chlorides and sulphates, resists freeze/thaw cycles even in the presence of de-icing salts and is not subject to carbonation;
- high resistance to wear and abrasion.

## CONSUMPTION AND PACKAGING

19,5 kg/m<sup>2</sup> for cm thickness  
25 kg bag.

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## PERFORMANCE

The performances shown below are obtained with a slump flow of 150-160 mm in accordance with UNI EN 13395/1, in the absence of bleeding.

Requirements	Acceptability limits EN 1504/3	Performance			
Adhesion to the concrete, UNI EN 1542 on substrate MC 0,40 (having w/c ratio = 0,40) in accordance with UNI EN 1766	> 2 MPa	> 2 MPa			
Compressive strength, UNI EN 12190*	after 28 days $\geq$ 45 MPa		-5°C	5°C	
				20°C	
		3 h >	8	15	20
		4 h >	12	20	35
		8 h >	20	30	40
		24 h >	50	55	60
		7 days >	65	65	70
		28 days >	85	85	85
Permeability to water measured as depth of penetration of water under pressure, UNI EN 12390/8	----	average depth of penetration < 5 mm			
Permeability to water measured as capillary absorption coefficient, UNI EN 13057	$\leq 0,5 \text{ kg}\cdot\text{m}^{-2}\cdot\text{h}^{-0,5}$	$< 0,1 \text{ kg}\cdot\text{m}^{-2}\cdot\text{h}^{-0,5}$			
Resistance to freeze-thaw cycles with de-icing salts measured as adhesion UNI EN 1542 after cycles UNI EN 13687/1 on substrate MC 0.40), UNI EN 1766	$\geq 2 \text{ MPa}$ after 50 cycles	> 2 MPa			
Resistance to accelerated carbonation, UNI EN 13295	Depth of carbonation $\leq$ that of the reference concrete type MC 0,45 (having 0,45 w/c ratio) in accordance with UNI EN 1766	Pass			
Flexural strength, UNI EN 196/1	----	1 day > 15 MPa 7 days > 20 MPa 28 days > 30 MPa			
Resistance to extraction of steel rods, RILEM-CEB-FIP RC6-78	----	> 25 MPa			
Modulus of elasticity, UNI EN 13412	at 28 days $\geq$ 20.000 MPa	29.000 ( $\pm$ 2.000) MPa			
Skid resistance	-	Class I			

## APPLICATION SHEET

### STORAGE

Store the product in a sheltered, dry place at a temperature anywhere between 5 and 35°C.

## PREPARATION OF THE SUBSTRATE

The substrate must be concrete. Any damaged or loose concrete must be removed to the depth and in the ways that the engineer decides best on the basis of the preliminary surveys aimed at identifying the state of preservation of the structure.

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Loose or contaminated concrete must be removed preferably by hydro demolition or, alternatively, by mechanical chipping (or similar method) using lightweight compressed-air operated concrete breakers and taking all the necessary precautions to avoid damaging the structures. The surface of the concrete substrate must be macroscopically rough (surface irregularity approx. 5 mm deep) to obtain maximum bond between the substrate and the repair material. If there are reinforcement rods in the substrate, any loose or contaminated concrete around the reinforcement rods must be removed. Any exposed reinforcement rods must have the rust removed by mechanical brushing or sand-blasting. Whenever rebars must be added for structural reasons, they will be laid first. The concrete cover must be at least 2 cm thick and in any case in conformity with the engineer's indications in relation to the class of exposure.



## CLEANING AND SATURATION OF THE CONCRETE

The concrete substrate must preferably be cleaned and saturated using water under pressure (80÷100 atm and warm water in winter). This is indispensable to prevent the concrete substrate taking water from the mix. Incomplete saturation would cause loss of adherence and cracking of the added material. The use of water under pressure also ensures effective cleaning of the surface by removing dust and small loose particles that may still be present after the concrete has been scarified. Cleaning and saturation of the surfaces are essential to obtain high bond strength between the substrate and the applied material. In case of low temperatures, before the application of the product, make sure that there is no presence of surface ice, and eventually remove it.

## APPLICATION TEMPERATURE

MasterEmaco T 1100 TIX may be applied at an ambient temperature anywhere between -10 °C and +35 °C.

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## WARNINGS

MasterEmaco T 1100 TIX is incompatible with any binder and therefore even with cement products in the MasterEmaco range; mixing such products together could change the mechanical performance and is therefore not allowed.

## PREPARING THE MIX

Mix the product with a suitable drill with whisk, a sack at a time. It is not recommended to mix by hand. The mixing time has to be sufficient to obtain a plastic mixture, homogenous and without lumps. The whole content of each bag must always be mixed at a time. Each 25 kg bag of MasterEmaco T 1100 TIX must be mixed with 3,1÷3,6 liters of water. Mix every bag with the minimum quantity of water indicated; at the end of the mixing add some more water to obtain the desired consistency (never exceeding the indicated maximum water content) and mix to obtain an homogenous mix.

Application thicknesses are included between 10 and 150 mm. For horizontal and inclined surfaces with thickness of more than 150 mm it is necessary to add washed aggregate, free of impurities with type and quantity to be defined according to the thickness requested.

When some aggregate is added the performances must be checked in the jobsite with some test mixtures.

## APPLICATION

MasterEmaco T 1100 must be applied onto cohesive, macroscopically roughened surfaces that have been cleaned and saturated with water.

At the time of application the substrate must be saturated but with a dry surface; in other words any free water must be removed.

For applications as mortar to fix manhole apply the mortar under the curbstone or the manhole to fix , then install them bringing to the desired level.

To repair horizontal and inclined surface or to grout stone blocks, apply MasterEmaco T 1100 TIX with trowel with suitable consistency.

Wash carefully the equipment after the end of mixing.

## FLOAT FINISH

A float finish is recommended for surfaces exposed to the air, using a sponge float at a suitable time after application according to weather conditions. The interval between application and the float finish depends on the first stiffening of the mortar; the correct moment to start the floating is when the fingers of a hand resting on the surface do not sink into the mortar but leave just a slight mark on it. A correct float finish is indispensable for effectively countering the formation of micro-cracks due to plastic shrinkage.

## CURING

To obtain the best results with MasterEmaco products on site, correct curing is necessary.

## PROTECTION

To increase the overall durability of the repair work, it is advisable to apply protection over the whole structure.

The MasterEmaco protection system is accomplished with the application of MasterProtect products.

For more details contact our technical service.



We create chemistry

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For further information, please consult your local BASF Construction Chemicals Italia Spa representative.

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The owner, his representative, or the contractor is responsible for checking the suitability of our products as to the intended use and aims.

Supersedes all prior issues on this product.

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