

FLUECO 80 T

THIXOTROPIC, FIBRE-REINFORCED CEMENT MORTAR
WITH SHRINKAGE COMPENSATION

*Ideal for structural restorations in highly aggressive environments
For layers up to 4 cm thick*



DRACO

REFURBISHMENT & PROTECTION LINE

CEMENT-BASED THIXOTROPIC
MORTARS FOR CONCRETE
RESTORATION



FLUECO 80T is a premixed ready-to-use fibre-reinforced thixotropic mortar based on cement, synthetic fibres and special nanometric additives. FLUECO 80T has high initial and final tensile strength, and is even impermeable and durable in arsh environments, ensuring superior adhesion to both steel and concrete. FLUECO 80T is prepared by only adding water obtaining a shrinkage-free mortar ideal for concrete repairing and restoration. FLUECO 80T does not contain metallic ingredients and is chloride-free.

ADVANTAGES

The chemical and the characteristics of FLUECO 80T allows to make high strength concrete repair works restore concrete structures even in aggressive environments obtaining high durability and reducing maintenance costs.

The main features of the product are:

- ✓ **SULPHATE AND ARSH ENVIRONMENTS RESISTANCE:** FLUECO 80T provide a very compact surface with low porosity and no-cracks. It has a very low permeability to sulphate, chlorides and aggressive environments.
- ✓ **FREEZ THAW RESISTANCE:** FLUECO 80T adhesion and harsh environment resistance withstands also freez-thaw cycles ..
- ✓ **HIGH ADHESION TO CONCRETE AND STEEL:** FLUECO 80T has great adhesion to steel reinforcements bars and concrete.
- ✓ **SHRINKAGE COMPENSATED IN OPEN AIR CURING:** The expansive properties of FLUECO 80T that provide the SHRINKAGE COMPENSATED effect can be guaranteed also in open air curing by adding PRESIDIO SRA
- ✓ **ZERO CRACKS TECHNOLOGY:** FLUECO 80T thanks to the special nanometric polymers technology and the fiber reinforcement is a cracks free mortar
- ✓ **VERSATILE AND EASY TO APPLY:** with concrete and cement based material as FLUECO and CONCRETE FINISHER mortars.



FIELDS OF APPLICATION

- ▶ Reconstruction and repairing of piles, beams, canal linings, walls, floor slabs and concrete structures in general.
- ▶ Structural repairs of precast concrete structures.
- ▶ Repairing of concrete in contact with seawater as hydraulic and port structures.
- ▶ Reconstruction and structural restoration of concrete coverings damaged by corrosion of the reinforcing bars.

TECHNOLOGY DETAILS

The addition with PRESIDIO SRA provides the carrying out of the expansive effect even when not in damp environment assuring a good curing also in exposed air, hot climate and in general in the real conditions that are often found on the construction sites.

THE ARCHING TEST : By preparing a test specimen having dimensions of 100x5x2 with FLUECO 80 T is possible to evaluate the ability of the product to counteract the shrinkage having a good compensated expansion also in open air. The arching of the specimen even just after 24 hours demonstrate the expansive effect of the mortar.

The graphic underlines how FLUECO 80T additivated with PRESIDIO SRA is able to guarantee the expansion and so to compensate the shrinkage of the grout much better than standard grouts. This features generally improves the performance of the product in hot climates.



SUPPORT PREPARATION

- ▶ Remove all loose concrete or masonry material as well as grout slurry from the area to be repaired;
- ▶ eliminate stains or soaked in oil or grease, paint, lime, dust, dirt, etc
- ▶ roughen the surface with tools such as bush hammers, chisels, or better yet, pressure washers leaving the concrete sound and solid with an uneven texture with at least 5 mm peak roughness.

PROTECTING REINFORCEMENT BARS

- ▶ Sand the reinforcement bars and remove all loose material such as rust flakes or structural fragments;
- ▶ to protect the reinforcement bars, we suggest you should apply a DRACOSTEEL coating (see technical data sheet).
- ▶ in case of deep penetration of CO₂ into the concrete carry out a carbonation evaluating test and remove the entire thickness of concrete affected by carbonation.

MIXING OF THE PRODUCT

- ▶ Mix the FLUECO 80T mortar in a conventional on-site concrete mixer. Pour the amount of mix water as indicated in the table into the concrete mixer. Gradually pour in FLUECO 80T without stopping. Continue mixing for at least 4-5 more minutes after pouring in the last bag of FLUECO 80T and make sure that the mix is well blended and clot-free.
- ▶ If improved open-air curing of the mortar is required, add PRESIDIO SRA at the end of the mixing phase at a dosage of 1% by the weight of the mortar (0.3 kg every 25 kg bag of FLUECO 80T).

TIPS FOR COLD AND HOT CLIMATE APPLICATIONS



HOT CLIMATES

- ▶ Store FLUECO 80T in a shaded area;
- ▶ work in the early morning, stopping during the sunniest hours of the day and start work again only in late afternoon, provided you keep the structure wet for at least 6 hours before returning to work
- ▶ to obtain the best results from FLUECO 80T, a thorough curing with PROBETON CURING N, applied with a sprayer or paintbrush, is crucial.



COLD CLIMATES

- ▶ If possible, store FLUECO 80T in a warm area;
- ▶ do not apply the product in temperatures below 0°C.;
- ▶ start work in the late morning;
- ▶ make sure that the support surface does not freeze
- ▶ Soaking Support Surfaces with Water After preparing foundation, soak concrete or masonry with water for at least 6 hours before applying FLUECO 80T. Remove any residual surface water with compressed air or rags.

APPLICATION OF THE MORTAR

Coating thicknesses up to 3 cm

With such a thin coat, you will not be able to apply electrowelded mesh, so roughen the foundation well to ensure a good bond to the mortar.

The roughened surface should have peaks and valleys of at least 0.5 cm while the perimeter edges of the repair area should have similar texture with a depth of at least 1 cm and corners should be square. A simple sand-blasting of the foundation is not sufficient.

FLUECO 80T may be applied with a trowel or sprayer. FLUECO 80T finish times are roughly a half hour during the summer and about 1 hour during the winter.

Coating Thicknesses of Over 3 cm

Position an electrowelded mesh with shims to maintain a uniform amount of space above the substrate, remembering that a layer of FLUECO 80T will require you to leave at least 1 cm of space for reinforcement bar cover.

CURING OF THE MORTAR

If added PRESIDIO SRA acts as an internal curing additive by regulating the water evaporation and enhancing a correct curing of the mortar. The additivation with PRESIDIO SRA of FLUECO 80T allows a correct expansive action of the mortar even in exposed air reducing the shrinkage by 20-50% in comparison to the non additivated product.

In any case to assure a correct curing of the mortar even in hot dry climates and surfaces exposed to wind and sunlight it is recommended the use of the curing membrane PROBETON CURING N.

FLUECO 80 T



PACKAGING AND STORAGE

FLUECO 80 T comes packaged in 25 kg bags.

If the product is properly stored in its original packaging in a dry sheltered place, its ingredients will remain intact for one year.



PRODUCT IDENTIFICATION

CONSISTENCY AND COLOUR	Grey powder
MAXIMUM AGGREGATE SIZE (mm)	2,5
BULK DENSITY (kg/m ³)	1,2 kg/l
CHLORIDE IONS CONTENT - MINIMUM REQUIREMENTS ≤ 0.05% - ACCORDING TO EN 1015-17 (≤ 0,05%)	0,012%
PACKAGING	25 kg bag
STORAGE	12 months

PRODUCT APPLICATION DATA (AT +20°C - 50% R.H.)

MIXING RATIO	approx. 4 - 4.5 litres of water per 25 kg bag
DENSITY OF MIX (kg/m ³)	2130 kg/m ³
pH	12.5
CONSISTENCY OF MIX (kg/m ³) UNI EN 13395	Thixotropic
APPLICATION TEMPERATURE RANGE	from 5°C to 35°C
POT LIFE OF MIX	approx. 1 h (20°C-50% R.H.)
TIME BEFORE SUBSEQUENT APPLICATION	approx. 30 minutes (20°C-50% R.H.)
THICKNESS	4 cm without mesh
QUANTITY USED	approx. 19 Kg/m ² per cm of thickness

© Copyright 2012 - Tutti i diritti sono riservati. Le indicazioni contenute nella presente scheda rispondono in modo reale e veritiero alle nostre migliori ed attuali conoscenze - In funzione dell'accuratezza delle diverse fasi di posa in opera sulle quali non abbiamo alcuna responsabilità, possono verificarsi delle variazioni. La nostra garanzia si limita pertanto alla qualità e costanza del prodotto fornito di cui alle indicazioni stesse. La presente edizione annulla e sostituisce le precedenti.

FINAL PERFORMANCE 17% BLENDING WATER (20° C - 65% RH)

PERFORMANCE CHARACTERISTIC	TEST METHOD	MINIMUM REQUIREMENTS ACCORDING TO EN 1504-3 FOR R4 CLASS MORTAR	PERFORMANCE OF PRODUCT
COMPRESSIVE STRENGTH (MPa)	EN 12190	> 45 (after 28 days)	25 (after 1 day) 55 (after 7 days) 70 (after 28 days)
FLEXURAL STRENGTH (MPa)	EN 196/1	not required	7 (after 1 day) 10 (after 7 days) 11 (after 28 days)
COMPRESSIVE MODULUS OF ELASTICITY (GPa)	EN 13412	≥ 20 (after 28 days)	30 GPa (after 28 days)
BOND STRENGTH TO CONCRETE (MC 0.40-TYPE CONCRETE) ACCORDING TO EN 1766 (MPa)	EN 1542	≥ 2 (after 28 days)	2,4 (after 28 days)
CONTRASTED EXPANSION IN AIR DRYING (µm)	UNI 8147 method A	not required	0,4 µm after 28 days (*)
CRACK RESISTANCE:	"0-Ring Test"	no cracks after 180 days (*)	test passed (*)
BENDING TEST:	-	not required	convex (*)
RESISTANCE TO ACCELERATED CARBONATATION	EN 13295	Depth of carbonatation < reference concrete (MC 0.45 type with water/ concrete ratio = 0.45) in compliance with UNI 1766	test passed
IMPERMEABILITY TO WATER -penetration depth-(mm)	EN 12390/8	not required	< 5mm
CAPILLARY ABSORPTION (kg/m ² ·h ^{0.5})	EN 13057	≤ 0,5	< 0.13 kg/m ² ·h ^{0.5}
THERMAL COMPATIBILITY MEASURED AS BONDING ACCORDING TO EN 1542 (MPa):			
– freeze-thaw cycles with deicing salts	EN 13687/1	For rigid systems without traffic: > 1.0	2,3 MPa
– thunder-shower cycle	EN 13687/2	with traffic: > 2.0	
– dry thermal cycle	EN 13687/4		
REACTION TO FIRE	EN 13501-1	value declared by manufacturer	A1

(*) Performance figures obtained by adding 1% of Presidio SRA