

FLUECO 80 T2

HIGH-PERFORMANCE TWO-COMPONENT, FIBRE-REINFORCED THIXOTROPIC MORTAR WITH SHRINKAGE COMPENSATION

Ideal for structural restoration in aggressive environments and in the presence of load deformation - For layer thickness up to 5 cm thick.



FLUECO 80 T2 is a two-component, polymer-modified, fibre-reinforced mortar made of a cement-based premix to be hydrated with a specific synthetic latex to obtain thixotropic mixes and no plastic shrinkage.

FLUECO 80 T2 develops high initial and final mechanical strength and has a low modulus of elasticity. It is waterproof and durable, even in aggressive environments, and provides strong bonding to steel and concrete. It does not contain any metal parts or chlorides and its stability does not depend on air or gas incorporation.

FLUECO 80 T2 is resistant to chemical and environmental attack and is suitable for all exposure classes defined by UNI 11104.

BENEFITS

The features of **FLUECO 80 T2** enable to perform structural restoration works of structures exposed to high chemical-physical and environmental attack, by making layers up to 5 cm thick. Specific product features:

- ✓ **High adhesion to the substrate:** the specific formulation based on water-dispersed polymers and micronized synthetic latex ensures a high adhesion even to simply sandblasted substrates, thus facilitating laying operations.
- ✓ **No crazing nor cracking phenomena caused by plastic shrinkage:** Thanks to its special high-dispersion synthetic micro-fibres which counteract cracking, **FLUECO 80 T2** does not exhibit crazing or cracking phenomena caused by plastic shrinkage even if it is exposed to hot, dry and windy climates.
- ✓ **Resistance to sulphates and chemical-environmental attacks:** **FLUECO 80 T2** is highly compact, has a low capillary porosity and is very resistant to aggressive environmental agents such as chlorides and sulphates. It exhibits superior resistance to freeze-thaw cycles, excellent waterproofing properties and it is not subject to carbonatation.
- ✓ **Very thick layers:** **FLUECO 80 T2** can be applied by trowel or by spraying to obtain single layers up to 4 cm thick without recourse to an electro-welded mesh.



WHERE TO USE

FLUECO 80 T2 is suitable for the structural restoration, maintenance and renovation of damaged concrete and reinforced concrete structures exposed to highly aggressive environments. **FLUECO 80 T2** is ideal for:

- ✓ repair of structures including precast elements which are subject to repeated stress or deformation.
- ✓ structural restoration of pillars, beams, floor slabs and reinforced concrete or precast walls exposed to high sulphate attack.
- ✓ volumetric rebuilding of concrete structures with thickness up to 5 cm without recourse to an electro-welded mesh.
- ✓ hydraulic works, infrastructures, viaducts and tunnels, even where there is contact with seawater.
- ✓ restoration of the cortical layer of concrete and repair of missing rebar cover due to rebars oxidation.

REFERENCE STANDARDS

FLUECO 80 T2 complies with the principles laid down in the EN 1504-9 standard 'Products and systems for the protection and repair of concrete structures - Definitions, requirements, quality control and evaluation of conformity' 'General principles for the use of products and systems'

FLUECO 80 T2 complies with the minimum requirements of EN 1504-3 'Structural and non structural repair' for structural mortars of R4 class.

APPLICATION INSTRUCTIONS

SUBSTRATE CLEANING

- ▶ **remove all loose and crumbling concrete parts** from the area concerned with the restoration work, including grout laitance, through mechanical chiselling or power washing, by taking care not to damage the structures;
- ▶ **remove stains, efflorescences, residues of oil**, grease, varnish, lime, dust, dirt, etc.;
- ▶ **remove any previous restoration work** if irremediably damaged or deteriorated.

SUBSTRATE PREPARATION

- ▶ On **well-preserved substrates**, simple sandblasting is sufficient.
- ▶ On **deteriorated substrates**, roughen the surface and remove the damaged layer with mechanical means such as bush hammers, pneumatic chisels or hydroblasting (the latter does not cause damage to the substrate and is recommended for large surfaces) until the sound and compact concrete is reached.
- ▶ **Saturate the surface with pressurized water**. This procedure avoids mixing water absorption by the substrate, which could cause cracks and reduce the mortar adhesion capacity. This operation also permits the removal of any residue due to the roughening of the concrete substrate. Before carrying out restoration, excess water must be completely evaporated.

REINFORCEMENT BARS PROTECTION

- ▶ **Sandblast the reinforcement bars** and remove all loose parts such as rust or debris as they could initiate the corrosion process or affect adhesion. Hydroblasting effectively cleans the bars, so that sandblasting is not needed.
- ▶ **Protect the reinforcement bars** by applying **DRACOSTEEL**, the alkalinizing treatment which provides protection against corrosion.

MORTAR PREPARATION

FLUECO 80 T2 mortar is mixed in a concrete mixer or, for small quantities of product, in a suitable container. Gradually add component A to component B maintaining a powder/liquid mixing ratio. There is no need to add water. Mix for at least 4 ÷ 5 minutes till getting a well-blended and lump-free mix. Check that all of the product has been correctly mixed and that no residues of dust have remained along the walls and on the bottom of the container. To prepare small quantities of mortar, use a low-speed mechanical stirrer to avoid dragging air into the mix.



PRECAUTIONS IN HOT CLIMATES

- ▶ Store **FLUECO 80 T2** away from sunlight;
- ▶ Carry out work in the early hours of the morning, interrupting operations during the hottest hours, work should begin in the late afternoon provided that the structure has been subjected to continual wetting for at least one hour before work begins;
- ▶ In order to get the best performance of **FLUECO 80 T2**, it is necessary to perform a proper curing procedure by using PROBETON CURING N which can be applied by spray or by brush.



PRECAUTIONS IN COLD CLIMATES

- ▶ Store **FLUECO 80 T2** in a possibly heated environment;
- ▶ Do not apply the product at temperatures below 0°C;
- ▶ Start work late in the morning;
- ▶ Make sure that the substrate is not frozen;
- ▶ Protect from freezing, covering the surfaces and areas with impermeable, insulated sheets.

SUBSTRATE SATURATION WITH WATER

After all the activities for the substrate preparation have been completed, saturate concrete or brick material with water uninterruptedly for at least 6 hours before laying **FLUECO 80 T2**. Remove unabsorbed water from the surface with compressed air or rags.

APPLICATION

FLUECO 80 T2 can be applied by trowel or by spray making layers up to 5 cm thick. Thicker layers shall be composed of more layers using the wet-on-wet technique. The product shall be applied to clean surfaces, roughened and saturated with water as indicated in the previous paragraph. **FLUECO 80 T2** indicative finishing time: half an hour during the summer period; approximately 1 hour during the cold season.

In order to reduce micro-cracking phenomena caused by plastic shrinkage, it is recommended to smooth mortar once it has hardened (approx. 40 min at +20°C) with a damp sponge trowel.

CURING

To ensure a proper product curing even in dry climate or when surfaces are exposed to excessive wind or sunlight, it is recommended the use of PROBETON CURING N curing compound.

PACKAGING AND STORAGE

FLUECO 80 T2 is packaged in:

- 25 kg bags + 5 kg cans.
- 25 kg bags + 20 kg cans.
- 25 kg bags + 1000 kg cans.

If the product is stored properly in its original packaging, indoors in a dry location, it maintains its original features for one year.



PRODUCT CHARACTERISTICS

	COMPONENT A	COMPONENT B
APPEARANCE	powder	liquid
COLOUR	grey	white
MAXIMUM DIAMETER OF AGGREGATE	2.5	-
CHLORIDE ION CONTENT ($\leq 0.05\%$) UNI EN ISO 1015-17	$\leq 0.05\%$	

APPLICATION DATA

COLOUR OF MIX	grey
MIX RATIO	A : B = 25 : 5
DENSITY OF THE MIXTURE - UNI EN 12190	2130 kg/m ³
pH OF MIX	> 12
WORKABILITY AT THE FLOW TABLE TEST - EN 13395-1	170-180 mm
APPLICATION TEMPERATURE RANGE	from +5°C to +35°C
POT LIFE OF MIX	approx. 30 minutes (+20°C and 50% R.H.)
TOTAL CURE TIME	approx. 28 days at +20°C
THICKNESS OF APPLICATION	1-5 cm per layer
CONSUMPTION	21 kg/m ² per cm of thickness

TECHNICAL SPECIFICATIONS



Structural restoration, volumetric rebuilding and thick coatings in highly aggressive environments by applying **FLUECO 80 T2** of **Draco Italiana S.p.A.**, the two-component, thixotropic cement mortar, in layers up to 5 cm thick. The product must be characterized by excellent adhesion to the substrate, impermeability and development of high initial and final mechanical strength, and must comply with EN 1504-3 requirements for structural mortars of R4 class. The product shall be applied according to the instructions and precautions provided by the manufacturer **DRACO Italiana S.p.A.**

FINAL PERFORMANCE

PERFORMANCE CHARACTERISTIC	TEST METHOD	REQUIREMENTS ACCORDING EN 1504-3 FOR R4-CLASS MORTAR	PRODUCT PERFORMANCES
COMPRESSIVE STRENGTH	EN 12190	≥ 45 MPa (after 28 days)	>25 MPa after 1 day >45 MPa after 7 days >55 MPa after 28 days
FLEXURAL STRENGTH	EN 196-1	None	>6 MPa after 1 day >8 MPa after 7 days >10 MPa after 28 days
COMPRESSIVE MODULUS OF ELASTICITY	EN 13412	≥ 20 MPa (after 28 days)	25 ± 2 GPa
BOND STRENGTH ON CONCRETE (substrate type 0.40 m3 w/c ratio = 0.40) according to EN 1766	EN 1542	≥ 2 MPa (after 28 days)	>2 MPa
CRACK RESISTANCE	"O Ring Test"	No cracks after 180 days	Meets specifications
RESISTANCE TO ACCELERATED CARBONATATION	EN 13295	Depth of carbonation ≤ than the reference concrete (0.45 m3 type water/cement ratio = 0.45) according to UNI 1766	Meets specifications
IMPERMEABILITY TO WATER -penetration depth	EN 12390/8	None	< 10 mm (maximum) < 5 mm (average)
CAPILLARY ABSORPTION	EN 13057	≤ 0.5 kg/m ² ·h ^{0.5}	≤ 0,3 kg/m ² ·h ^{0.5}
THERMAL COMPATIBILITY measured as adhesion according to EN 1542 on concrete (0.4 m3) UNI EN 1766 - freeze-thaw cycles with de-icing salts/ thunder-shower/dry cycles	EN 13687-1-2-4	≥ 2 MPa (after 50 cycles)	>2 MPa
PULL OUT RESISTANCE OF STEEL RODS	RILEM- CEB-FIP RC6-78	None	>20 MPa
REACTION TO FIRE	EN 13501-1	Euroclasse	E

NOTE: The performances indicated are obtained with a 170-180 mm consistency according to UNI EN 13395-1.

Legal notice - SLCMP version dated 01.03.2017

In the technical specifications herein, Draco Italiana s.p.a. used the indicators therein specified, with the relevant standards.

Please check if this Sheet and the figures therein contained apply to the product batch you are interested in or if they have been overridden by any later release. If in doubt, check whether this Sheet matches the one applicable at the time of finalising the sales agreement, at www.draco-edilizia.it, and/or contact our Engineering Department.

No advice provided by our staff, either verbally or in writing at your request, about the potential applications of the Products shall be binding under the sales agreement or shall be considered an integral part of the agreement. Such advice is based on our experience and on the best available practical and/or scientific knowledge; as such, it shall not be binding or conditional on the buyer or user. Please try our products first to find out whether they are fit for your intended use or application; in any case, you shall be solely responsible for your choice.