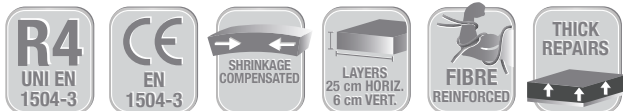


FLUECO 80 T GG

SHRINKAGE-COMPENSATED THIXOTROPIC GROUT FOR STRUCTURAL REPAIR

HIGH THICKNESS



FLUECO 80 T GG is a fibre-reinforced, coarse grain cement-based grout. It is ready to use and needs only to be mixed with water to obtain a thixotropic mix with shrinkage compensation. **FLUECO 80 T GG** develops high initial and final mechanical strength. It is waterproof and durable, even in aggressive environments, and provides strong bonding to steel and concrete.

FLUECO 80 T GG can be sprayed or applied by trowel or by spatula, both vertically and horizontally in thick layers.

BENEFITS

Main benefits of FLUECO 80 T GG:

- ✓ **Resistance to sulphates and chemical and environmental attacks:** **FLUECO 80 T GG** has high compactness, low capillary porosity and high resistance to aggressive agents present in the environment such as chlorides and sulphates.
- ✓ **Rapid strength gain:** **FLUECO 80 T GG**'s accelerated strength gain with reduced curing times makes it possible to put the structure back in operation within a short time.
- ✓ **Waterproofness and resistance to freeze-thaw cycles:** the specific formulation of **FLUECO 80 T GG** and the high quality of its components make it completely waterproof and increase resistance to freeze-thaw cycles.
- ✓ **Absence of cracks caused by plastic shrinkage:** unlike conventional cement mortars, **FLUECO 80 T GG** develops no crazing or cracking from plastic shrinkage.
- ✓ **High adhesion to the substrate:** **FLUECO 80 T GG** has been specifically formulated to increase mortar/support adhesion and guarantee easy application.
- ✓ **Easy to mix and place:** **FLUECO 80 T GG** can be pumped even at a long distance, by dry-spraying or wet-spraying it in thick layers. It can be subjected to stresses after a short curing time.



USES

FLUECO 80 T GG has been specially formulated for maintenance, structural repair and restoration work in industrial and urban areas, where a high concentration of aggressive agents over time deteriorate concrete and reinforcement bars in reinforced concrete or prestressed concrete structures.

FLUECO 80 T GG is ideal for:

- ▶ Partial repair or complete renovation of pillars, beams, slabs in reinforced concrete and prestressed concrete.
- ▶ Thick repairs up to 6 cm vertically and 25 cm horizontally.
- ▶ Repair of structures exposed to repeated stresses.
- ▶ Harbour structures even in contact with seawater.
- ▶ Repair of the bottom structures of tunnels and canals with thickness of up to 25 cm horizontally.
- ▶ Repair of the cortical layer of concrete and of rebar covers that have become detached due to reinforcement oxidation.

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INSTRUCTIONS FOR USE

SUBSTRATE CLEANING

- ▶ **Remove all flaking parts** from concrete in the area to be repaired, including cement laitance, by either mechanical chipping or high-pressure water blasting being careful not to damage the structures.
- ▶ **Remove spots, efflorescence or soaked-in stains** of oil, grease, paint, lime, dust, dirt etc.

Remove any previous repair work, if irreversibly damaged or deteriorated.

SUBSTRATE PREPARATION

- ▶ **Roughen the surface** mechanically by bush hammering, chipping or water jetting (the latter avoids damage to the substrate and is recommended for large areas) until reaching the sound, compact concrete layer so as to ensure proper bonding of the mortar to the substrate. Surfaces should be roughened to create profiles of at least 5 mm depth, whilst the edges around the area to be repaired should be scarified to a depth of at least 10 mm with a sharp-edge finish. Roughening the surface layer is necessary, both in order to favour bonding of the mortar and to ensure the expansive properties develop correctly.
- ▶ **Wet the surface with pressurized water until saturation.** This procedure prevents the substrate from absorbing water from the mix as this could lead to cracking and reduce the bonding strength of the mortar. This operation also allows to remove any fragments left from the roughening of the concrete substrate. Excess water must evaporate completely before repair is carried out.

REBAR PROTECTION

- ▶ **Sandblast the rebars** and remove all parts that have become detached, such as flakes of rust or fragments of material that could cause corrosion or impair adhesion. Concrete removal from the substrate using water-blasting effectively cleans the bars too, making sandblasting unnecessary.
- ▶ **Protect the reinforcement bars** by re-alkalising them with the corrosion-inhibiting agent **DRACOSTEEL**.

GROUT PREPARATION

FLUECO 80 T GG is mixed using an on-site concrete mixer. Pour water into the mixer according to the recommended mixing ratio indicated in the table, based on the final consistency you wish to achieve. Slowly add the product and mix for at least 4-5 minutes until a smooth, lump-free consistency is achieved. Verify that the entire product has been properly mixed and there is no powder left on the walls or at the bottom of the container. To prepare small amounts of product use a suitable container following the mixing ratio recommended. In this case use a low-speed mixer to minimise air entrapment.



HOT WEATHER PRECAUTIONS

- ▶ Store FLUECO 80 T GG away from direct sunlight.
- ▶ Use cool mixing water.
- ▶ Carry out work in the early hours of the morning, interrupting work when the sun is strongest: it is better to resume work in the late afternoon, providing the substrate has been kept continuously wet for at least 6 hours before work begins again.
- ▶ To get the most out of FLUECO 80 T GG, ensure proper curing by applying PROBETON CURING N by brush or spray.



COLD WEATHER PRECAUTIONS

- ▶ Store FLUECO 80 T GG in a heated environment, if possible.
- ▶ Use heated mixing water.
- ▶ Do not apply the product if temperature is below 0°C.
- ▶ Start working in the later hours of the morning.
- ▶ Make sure that the substrate is not frozen.
- ▶ Substrate saturation with water: once all the operations to prepare the substrate have been carried out, saturate the concrete or masonry with hot water continuously for at least 6 hours before placing FLUECO 80 T GG. Any excess water on the surface must be removed with compressed air or rags.

APPLICATION

FLUECO 80 T GG can be applied by trowel or can be **dry-sprayed or wet-sprayed**. The finishing time for FLUECO 80 T GG is approximately half an hour in summer and 1 hour in winter. **Max thickness per layer is approx. 6 cm when applied vertically and 25 cm horizontally. Minimum thickness is 3 cm.** For layers thicker than 3 cm, install an electro-welded mesh with spacers and a reinforcement cover of at least 1.5-2 cm.

WATER INFILTRATION FROM SUBSTRATE

In case of water seepage or infiltration on the substrate surface, it is necessary to eliminate the causes to prevent the washout of the overlay before the grout has hardened. Apply our quick-setting mortar HYDROPLUG to stop water, and if necessary divert water through drainage.

CURING

To ensure proper curing of the product even in dry weather or where surfaces are exposed to direct sun or wind, we recommend using the curing membrane PROBETON CURING N.

PACKAGING AND STORAGE

FLUECO 80 T GG is packed in 25 kg bags.

If properly stored in a sheltered and dry place the product maintains its properties for one year.



REFERENCE STANDARDS

FLUECO 80 T GG complies with the principles set by EN 1504-9 "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 T GG satisfies the minimum requirements set by EN 1504-3 "Structural and non-structural repair" for class R4 structural mortars.

"CLASS R4 PURSUANT TO EN 1504-3 FOR STRUCTURES EXPOSED TO AIR (PCC) AND IN PERMANENT CONTACT WITH WATER (CC)"

PRODUCT CHARACTERISTICS

APPEARANCE	Powder
COLOUR	Grey
MAXIMUM DIAMETER OF AGGREGATES	5 mm
CHLORIDE ION CONTENT ($\leq 0.05\%$)	$\leq 0.05\%$
PACKAGING	25 kg bags

APPLICATION SPECIFICATIONS

MIX COLOUR	Grey
MIXING WATER	11-13 litres per 100 kg of product 2.75 ÷ 3.25 litres per 25 kg bag
BULK DENSITY OF THE MIX	2160 kg/m ³
MIX pH	> 12
MIX CONSISTENCY UNI EN 13935	Plastic/thixotropic fluid
APPLICATION TEMPERATURE	+5 ÷ +35°C
POT LIFE OF THE MIX	Approx. 60 minutes (20 °C and 50 % R.H.)
COMPLETE HARDENING	Approx. 28 days at 20 °C
WAITING TIME BETWEEN TWO LAYERS	At least 30 minutes (23 °C and 50 % R.H.)
THICKNESS OF APPLICATION	6 cm (25 cm horizontally)
CONSUMPTION	Approx. 19 kg/m ² per cm of thickness

SPECIFICATION ITEM



Structural repair, volumetric reconstruction and restoration of concrete structures using a shrinkage-compensated, thixotropic, rheoplastic grout with high bond strength, high mechanical strengths, high resistance to sulphates and chemical and environmental attacks, to be sprayed or applied by trowel like **FLUECO 80 T GG** by **DRACO Italiana S.p.A.** The instructions and precautions to be observed must comply with the recommendations of the manufacturer Draco Italiana S.p.A.

PERFORMANCE CHARACTERISTICS

MIXING WATER 11%
PLASTIC THIXOTROPIC CONSISTENCY

PERFORMANCE CHARACTERISTICS	TEST METHOD	REQUIREMENTS AS PER STANDARD EN 1504-3 FOR CLASS R4 MORTARS	PRODUCT PERFORMANCE
COMPRESSIVE STRENGTH	EN 12190)	≥ 45 MPa (after 28 days)	20 MPa at 1 day 45 MPa at 7 days 60 MPa at 28 days
FLEXURAL STRENGTH	EN 196/1	None	3 MPa at 1 day 6 MPa at 7 days 8 MPa at 28 days
MODULUS OF ELASTICITY IN COMPRESSION	EN 13412	≥ 20 GPa (after 28 days)	30 GPa
BOND STRENGTH TO CONCRETE (MC 0.40 type substrate, W/C ratio = 0.40) according to EN 1766	EN 1542	≥ 2 MPa (after 28 days)	≥ 2 MPa
RESISTANCE TO CRACKING	"O Ring Test"	Crack-free after 180 days	Meets specification
RESTRAINED EXPANSION after 1 day	UNI 8147	-	> 0,4‰
RESISTANCE TO ACCELERATED CARBONATION	EN 13295	Depth of carbonation ≤ of concrete specimen (MC 0.45 w/c ratio = 0.45) according to UNI 1766	Meets specification
CAPILLARY ABSORPTION	EN 13057	≤ 0.5 kg/m ² · h ^{-0.5}	≤ 0,5 kg/m ² · h ^{-0.5}
THERMAL COMPATIBILITY measured as bond according to EN 1542 on concrete MC 0.4 UNI EN 1766 - Freeze-thaw cycles with de-icing salts	EN 13687/1	≥ 2 MPa (after 50 cycles)	> 2.0 MPa
RESISTANCE TO EXTRACTION OF STEEL RODS	RILEM-CEB- FIP RC6-78	None	> 25 MPa
REACTION TO FIRE	EN 13501-1	Euroclass A1	A1
RESISTANCE TO SULPHATES	ASTM C 88	-	No deterioration after magnesium sulphate attack (7 days curing)
EXUDATE WATER (bleeding)	UNI 8998	-	Absence of bleeding

Legal notes - SLCMP version of 01.03.2017

Draco Italiana s.p.a. has adopted the parameters indicated in this data sheet and the related standards for the calculation of the values and technical data contained herein.

Customers shall verify that this data sheet and the values indicated herein apply to their product batch and have not been superseded by later editions. If in doubt, verify that the sheet corresponds to the one available on the website www.draco-edilizia.it at the time the sales contract was executed and/or by previously contacting the Technical Department.

Any suggestions on the use of the Products provided by our personnel either orally or in writing upon the Customer's request do not constitute additional obligations to the purchase contract and do not imply a contractual obligation for the company. They are based on our experience and limited to the current state of practical and/or scientific knowledge. They are not binding for the client or for the installer. It is the Customer's responsibility to test our products and verify they are suitable for the type of application and use envisaged.