

FLUECO 77 CABLE

INJECTABLE AND PUMPABLE SHRINKAGE
COMPENSATED GROUT WITH HIGH RESISTANCE

DRACO

REFURBISHMENT
and PROTECTION
LINE

SUPER FLUID PUMPABLE
GROUTS FOR ANCHORING
TIEBACKS AND STRANDS

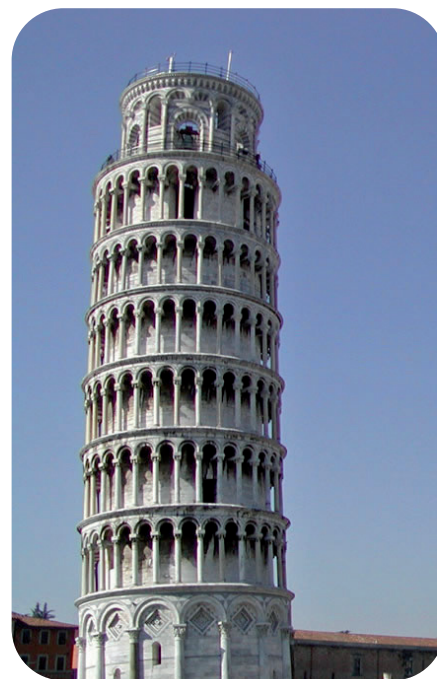


FLUECO 77 CABLE is a ready-to-use cement-based product formulated for making injectable grout to protect steel cables and bars from the "stress corrosion" phenomenon. The injection grout you obtain with **FLUECO 77 CABLE** is extremely fluid with superior initial and final tensile strength, shrinkage compensation, bleed-free, pumpable, impermeable and durable, with superior adhesion to both steel and concrete.

BENEFITS

FLUECO 77 CABLE is pumpable and easy to inject:

- ✓ Its special formula, in a base of hydraulic binders and exclusive additives, enables you to produce a completely impermeable and chemically resistant grout that ensures full protection for post-tensioned steel cables and bars against stress corrosion while guaranteeing superior tensile strength in both short and long curing stages;
- ✓ **FLUECO 77 CABLE does not contain chlorides, sulphates or other substances that are potentially destructive to metal reinforcement bars and shows;**
- ✓ **no signs of water exudation (bleeding) according to the UNI 8998 standard;**
- ✓ **optimal fluidity enables it to penetrate gaps** between braided steel cables as well as between the braided cable and sheath;
- ✓ **shrinkage-compensated**, ensuring complete cavity filling;
- ✓ **its initial setting time at 30 °C is more than 3 hours;**
- ✓ **superior adhesion** to both steel and concrete.



WHERE TO USE

FLUECO 77 CABLE is ideal for:

- ▶ Injecting sheaths around post-tensioned braided cable;
- ▶ anchoring steel bars and cables subject to increased tensile stress;
- ▶ filling structural joints in prefabricated elements;
- ▶ injecting hollow concrete and stone, even where natural aggressive agents such as sulphates, chlorides, etc. are present.

© Copyright 2012 - All rights reserved - The information in this data sheet is based on our knowledge of the product at the time of publication. Changes may occur depending on the accuracy of every step of the application procedure over which we have no control. For this reason, our warranty only covers the quality and consistent compliance of the products with the specifications provided. This data sheet invalidates and supersedes the previous ones.

Rev. 01-23 / Pag. 01/4

APPLICATIONS INSTRUCTIONS

SUBSTRATE PREPARATION

- ▶ After making the holes, wash the inside of the cavities abundantly with water, starting from the top to allow dust and loose particles to exit from the holes below.
- ▶ **Wet the inner surface with pressurized water until saturated:** this procedure allows the removal of residues due to the realization of the holes and avoids the absorption of the slurry water by the support, which could lead to cracking phenomena and decrease the adhesive capacity of the mortar.

GROUT PREPARATION

Mix the **FLUECO 77 CABLE** grout with a conventional on-site concrete mixer but, better yet, with a turbo mixer and, in either case, at low speed.

For every 20 kg bag, add about 6.4 litres of water. Pour 90% of the mix water into the concrete mixer then pour in **FLUECO 77 CABLE** without stopping and mix for at least 5 minutes after pouring in the last bag, making sure that the mix is well blended and clot-free. Add the remaining water and mix for a couple of more minutes before injection.



PRECAUTIONS IN HOT CLIMATES

- ▶ Store FLUECO 77 CABLE in a shaded area;
- ▶ use cold mix water;
- ▶ work in the early morning, stopping during the sunniest hours of the day and work again only in late afternoon, keeping the structure wet for at least 6 hours before returning to work.



PRECAUTIONS IN COLD CLIMATES

- ▶ If possible, keep FLUECO 77 CABLE in a warm environment;
- ▶ use water no hotter than 50°C;
- ▶ start work in the late morning;
- ▶ make sure that the support surface does not freeze.

APPLICATION

The smooth slurry produced by **FLUECO 77 CABLE**, keep the workability and pumpability for long time in no windy condition until 2 hours at 20°C 65% UR. , for to permit a easy and practical work without interruption.

Check the structure, before apply the pressure by injection, taking in consideration that the density of FLUECO 77 Cable's slurry has a 2 kg/l of density. Don't overcome a 1 bar of injection pressure in static damage structure, if you not in safety conditions.

Start the injection by pump in the lowest hole and step by step, move the injection device, in the upper hole, for avoid air entrapment during the filling injection. Close well the under filled hole, until the slurry reach the final setting time.

PACKAGING & STORAGE

FLUECO 77 CABLE comes packaged in 20 kg bags.

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



FLUECO 77 CABLE



PRODUCT CHARACTERISTICS

APPEARANCE AND COLOUR	Grey powder
MAXIMUM AGGREGATE SIZE	< 600 microns
CHLORIDE ION CONTENT ($\leq 0,05\%$) UNI EN 1015-17	0.015 %
PACKAGING	20 kg bag
CUSTOM CODE	3824 50 90

APPLICATION DATA

MIX COLOR	Grey
MIXING WATER	Approx. 6.4 litres per bag
DENSITY OF MIX - UNI EN 12190	2050 kg/m ³
pH OF MIX	Approx. 12
FLOW AFTER MIXING - UNI EN 13395-2	70 cm
SETTING TIME - UNI EN 13294	I=480' F=540'
FLOW CONE FLUIDITY - EN 445	After mix ≤ 25 sec. 30 minutes after mix ≤ 25 sec.
TEMPERATURE OF USE	From +5°C to +35°C
TOTAL HARDENING	Approx. 28 days at +20°C
CONSUMPTION	1.55 kg of FLUECO 77 CABLE per dm ³ of volume

FINAL PERFORMANCE

AVERAGE MECHANICAL STRENGTH, TESTS CONDUCTED ON 4X4X16 SAMPLES ACCORDING TO UNI EN 196 32% Mix water FLUID CONSISTENCY				
Curing (Days)	1	3	7	28
FLEXURAL STRENGTH (MPa) UNI EN 196/1	4	8	9	10
COMPRESSIVE STRENGTH (MPa) UNI EN 196/1	20	36	45	65
PULL OUT TESTING Average bond strength (MPa)				
Curing (Days)	1	3	7	28
Smooth bar	2,5	3,5	4,5	4,5
Bar with improved bond	8,5	*	*	*
Workability time at 20°C	about 40 minutes			

Testing has been conducted on 8 mm diameter sections sheathed in 60 mm diameter metal pipes filled with FLUECO 77 CABLE.

(*) The bar broke before any unravelling phenomena occurred.

Rev. 01-23 / Pag. 03/4

FINAL PERFORMANCE MIXING WATER: 32% (20°C - 65% RH)

CHARACTERISTICS	TEST METHOD	REQUIREMENTS IN ACCORDANCE WITH PERFORMANCE EN 1504-3 (CLASS R4) AND EN 1504-6	PRODUCT PERFORMANCE
COMPRESSIVE STRENGTH (A 20° C)	EN 12190	≥ 45MPa (after 28gg)	65 MPa a 28 gg
MODULUS OF ELASTICITY IN COMPRESSION	EN 13412	≥ 20 GPa (after 28 gg)	> 20GPa
FLEXURAL STRENGTH (A 20° C)	EN 196/1	None	10 MPa a 28 gg
BOND STRENGTH ON CONCRETE AFTER 28 DAYS (PULL OUT) (substrate of type MC 0.40 w / c ratio = 0.40) according to EN 1766	EN 1542	≥ 2 MPa (after 28 gg)	> 2 MPa
CONTRASTED EXPANSION	UNI 8146-8147	None	> 0,030% (7 days)
DRAWING RESISTANCE OF THE STEEL RODS	EN 1881	splippage < 6mm a 75KN	< 0,02mm a 75KN
RESISTANCE TO ACCELERATED CARBONATATION	EN 13295	carbonation depth ≤ than reference concrete (type MC 0,45 ratio a/c = 0,45) UNI 1766	Meets specifications
IMPERMEABILITY TO WATER - penetration depth -	EN 12390/8	None	None
THERMAL COMPATIBILITY freeze-thaw cycles / storm / dry thermal cycles	EN 13687-1-2-4	≥ 2MPa	> 2MPa
DETERMINATION OF SLANT SHEAR STRENGTH	UNI EN 12615	≥ 14GPa	> 14GPa
CAPILLAR ADSORBTION	EN13057	≤ 0,5 kg/m ² ·h ^{0.5}	< 0,5 kg/m ² · h ^{0.5}
REACTION TO FIRE	EN 13501-1	manufacturer's declared value	A1
DANGEROUS SUBSTANCES			Check SdS
BLEEDING	UNI 8998	None	None

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.