Fluid Cable

Powder additive for preparation of high-performance injection fluid grouts

Fluid Cable is a powder product that is added to cement to obtain, after mixing with a very small amount of water, injection fluid grouts that are free of bleeding and with no shrinkage. The cement grouts obtained by adding the Fluid Cable additive provide high sliding values, high mechanical strength, protection from "stress corrosion" and exceptional adhesion to iron, thus making them ideal for filling cable sheaths subjected to post-tensioning and for the structural strengthening of soils, concretes, and uneven or unstable hollow masonry through low pressure injection. The product contains no chlorides or metal expansives.

CUSTOMS CODE: 3824 4000
COMPONENTS: Single-component
APPEARANCE: Powder
AVAILABLE COLORS: White
PACKAGING AND DIMENSIONS: Bag 25 kg - Pallet: 50 x (Bag 25 kg)

OBTAINED CERTIFICATIONS AND REGULATIONS

CE
EN 934-4

FEATURES AND BENEFITS

The physical-chemical action of Fluid Cable allows you to obtain performances not possible with conventional mixtures. From a chemical and physical-mechanical point of view the following advantages are obtained: • Great fluidity with the lowering of the water/cement ratio. • Water retention and mixing stabilisation such as to eliminate bleeding, segregation and to allow high cohesion. • Shrinkage compensation with an induced expansion in the range from 250 to 400 microns/metre; no cracks in the filling volume; perfect filling of structural discontinuities. • Preservation of reinforcements in aggressive environments and increased adherence to steel. • Extended workability times. • Increased mechanical strength compared to those of the initial cement; the mechanical strength values will obviously depend on the reactivity and the type of cement used. Fluid Cable meets the requirements contained in the standard EN 934-4 prospectus T2 and has the CE marking relative to additives for mortar for pre-stressing cables. The values obtained, in accordance with UNI EN 934-4, with CEM I cement type, strength class 42.5, in compliance with EN 197/1 are in "Technical specifications". Indicative mechanical strengths adding 6% of Fluid Cable to different Portland Cements: o PTL 52.5: values => at 25 N/mm2 at 24 h and at > = 65 N/mm2 after 28 days; o PTL 42.5: values => at 20 N/mm2 at 24 hours and at > = 50 N/mm2 after 28 days. o PTL 32.5: values => at 15 N/mm2 at 24 hours and at > = 40 N/mm2 at 28 days. The setting times are longer than the normal setting values of the cement used, but obviously they are conditioned by the type of cement and by the varying climatic and environmental conditions. In general, it can be stated that the setting times are about 20% -25% longer than the setting times of the cements used.

FIELDS OF APPLICATION

Mix from 4 to 6 kg of Fluid Cable additive with 100 kg of hydraulic binder to obtain a fluid grout that can be used in the following fields of applications. • Filling of cable sheaths subjected to post-tensioning and of sheaths or cavities for anchor rods. • Permeation and strengthening of porous or loose conglomerates. • Sealing or strengthening of gravel or cement conglomerates. • Sealing of cracks in cement, masonry, and rock conglomerates. • Large-scale strengthening injections on masonry structures.

ALLOWED SUPPORTS

Concrete - Bricks - Mixed walls (bricks and stones) - Stone walls

MODE OF USE

Add Fluid Cable directly into the mixer, about 4-6% in weight with respect to the mixture binder (4-6 kg of product per 100 kg of hydraulic binder). The dosage of mixture water must be drastically reduced compared to classic water-cement grout: the correct use values, for an injectable consistency, are between 30% and 38% in weight with respect to the hydraulic binder, bearing in mind the rule that the finer the cement, the more water is needed. The loading sequence in the mixer, kept in continuous motion, is as follows (the indicative dosages of each component to obtain about 70 litres of injection grout are in brackets): • Water (25 litres) • Fluid Cable (6 kg) • Hydraulic binder (100 kg) • Then gradually add the remaining water. Add extra water, if strictly necessary, and proceed with mixing until you obtain a homogeneous lump-free fluid grout that is injectable without superficial bleeding. Use suitable mechanical mixers and mix for at least 5-6 minutes. The mixing time can be reduced to 2-3 minutes if turbomixers or high speed mixers are used. Temperature of use from +5°C to +35°C. At temperatures close to the lower limit of use, mix with warm water (40°C). In strengthening operations, it is always advisable to saturate the cavities or conglomerates with water (to be performed a few hours before the grout is injected, avoiding any excess water on the surface) to prevent the substrates absorbing water from the mixture before it hardens. Avoid using brackish water or water containing chlorides. Do not store the bags in wet or damp environments; PROTECT FROM HUMIDITY. The product has an acid-base reaction: adopt the same precautions for when using cements and limes (wear protective gloves, goggles and clothing to avoid contact with alkaline dust that can cause irritation). Do not use the contents of open bags if you notice agglomeration of the powder.

APPLICATION METHODS

To be added to other components - Injection - Pump

TOOL CLEANING

Water

KEY FEATURES

- Highlighted product
- Nonflammable
- Temperature of use: + 5 / + 35 °C
- Mix with water: 35 - 38 %
- Shelf-life: 12 months
- UV-resistant

TECHNICAL SPECIFICATIONS

Water/binder ratio **≤ 0.38**

mix
Density **≥ 1980 g/l**

EN 445
Fluid cone after mixing 0' **15 s**

EN 445
Fluid cone after 30' **25 s**

EN 445
Volume variation with cylinder method **-0.1 < V ≤ +0.1 %**

Adherence to steel **10-20 N/mm²**

EN 445 3 h
Exudation **≤ 1.5 %**

CONSUMPTION

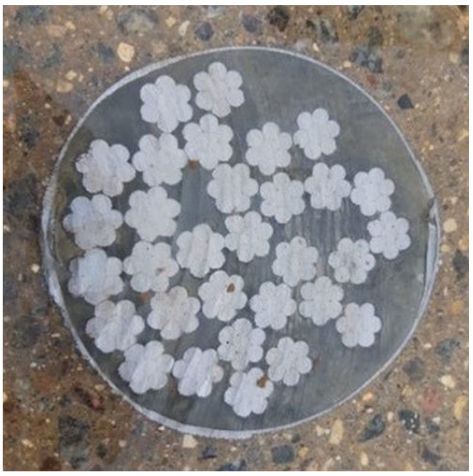
Add from 4 to 6 kg of Fluid Cable for every 100 kg of hydraulic binder.

STORAGE AND CONSERVATION

Store the product in its original packing, in a fresh and dry environment, avoiding frost and direct sunlight. Inadequate storage of the product may result in a loss of rheological performance. Protect from humidity. Store the product at a temperature between +5°C and +35°C.

PHOTO GALLERY





SPECIFICATION ITEM

The binary mixtures for strengthening injections, based on hydraulic binders + water must be packaged with the addition of the specific compound stabilizer, superlubricant, superpozzolanic Fluid Cable by AZICHEM srl, characterised by moderate expansion in the plastic phase, with a variable dosage by weight, on the weight of the binder, between 6 and 10%.

ADDITIONAL CONTENT

Mechanical performance

The main mechanical performance of a grout made with Fluid Cable, depending on the cement used, is detailed below:

Type of cement	PTL 52.5	PTL 42.5	PTL 32.5
Fluid Cable (%)	6%	6%	8%
Resistance to compression 7 days (MPa)	51.0	50.0	36.3
Resistance to compression 28 days (MPa)	61.5	62.5	48.2
Resistance to deflection 7 days (MPa)	4.8	4.5	4.1
Resistance to deflection 28 days (MPa)	5.1	5.0	4.9
Adhesion to steel at 28 days (MPa)	18.0	18.5	16.8
Expansion at 2 days (‰)	2	2	1

WARNINGS AND PRECAUTIONS

Check the appropriateness of the product depending on the specific requirements by performing adequate preliminary tests.The general information, along with any instructions and recommendations for use of this product, including in this data sheet and eventually provided verbally or in writing, correspond to the present state of our scientific and practical knowledge.
Any technical and performance data reported is the result of laboratory tests conducted in a controlled environment and thus may be subject to modification in relation to the actual conditions of implementation.

Azichem Srl does not assume any liability arising from inadequate characteristics related to improper use of the product or connected to defects arising from factors or elements unrelated to the quality of the product, including improper storage.
Those wishing to utilise the product are required to determine prior to use whether or not the same is suitable for the intended use, assuming all consequent responsibility.

The technical and characteristic details contained in this data sheet shall be updated periodically. For consultation in real time, please visit the website: www.azichem.com. The date of revision is indicated in the space to the side. The current edition cancels out and replaces any previous version.

Please note that the user is required to read the latest Safety Data Sheet for this product, containing chemical-physical and toxicological data, risk phrases and other information regarding the safe transport, use and disposal of the product and its packaging. For consultation, please visit: www.azichem.com.
It is forbidden to dispose of the product and/or packaging in the environment.