

Fluicem

HIGH-QUALITY LIQUID TECHNOLOGICAL SUPERPLASTICIZER, GUARANTEED FOR ADDITION TO CEMENT MORTARS AND CONCRETE. ALLOWS A SIGNIFICANT REDUCTION IN MIXING WATER, CONSIDERABLY INCREASING MECHANICAL STRENGTH AND IMPROVING WORKABILITY.



TECHNICAL DATA SHEET - REVISION 01/2022

DESCRIPTION

FLUICEM is a superplasticizing admixture based on multifunctional synthetic polymers with dispersing action. It is a dark brown liquid, soluble in water in all proportions and chloride-free. FLUICEM acts on the surface tension of the mixing water, reducing it together with the frictional forces between cement and aggregates. Through the action of the superplasticizer, cement and aggregates have improved wetting and flowability, resulting in a reduction in the required mixing water. The mix is more cohesive, homogeneous and compact, with no segregation. FLUICEM delays the initial setting time of the concrete, depending on dosage, cement type and temperatures during placement. FLUICEM is compatible with all types of Portland, pozzolanic and blast-furnace cements and with all COLMEF admixtures such as air-entraining, water-repellent and expansive agents, which must be added separately during mixing.

Complies with Standards:

- UNI 8145;
- UNI EN 934-2;
- ASTM 494-79 B, D and G.

FIELDS OF APPLICATION

FLUICEM is used to produce high-quality fluid concrete. Suitable for ready-mixed concrete and mass pours. FLUICEM makes it possible to use concrete with a low water/cement ratio even in small-section, heavily reinforced structures, minimizing vibration operations. At the same water/cement ratio, mechanical strength and impermeability to both water and atmospheric gases are increased. FLUICEM makes it possible to obtain concrete with high resistance to chemical attack from aggressive agents (sulfates, seawater, acid rain, de-icing salts, aggressive atmospheres, etc.), more compact concrete, free from air bubbles and surface cavities and without honeycombing, thanks to easy compaction and therefore a better exposed finish. It reduces placement times, reduces shrinkage and improves adhesion between concrete and reinforcement during pumping operations.

APPLICATION

FLUICEM is a ready-to-use product to be added to the mixer, manually or by dosing equipment, to the finished concrete mix or to the mixing water at the specified dosage. The concrete must be mixed for at least 5 minutes until a homogeneous, lump-free mix is obtained. Additional water may be added until the desired consistency is reached. The workability time of the mix remains substantially unchanged for about 1 hour at +23 °C, a value strongly influenced by temperature, cement type, aggregate grading curve and transport system. Therefore, to obtain precise data on the initial setting time of the concrete, preliminary site tests under the actual environmental conditions and using the actual materials are recommended. At high dosages, the development of early strength may be delayed; however, this does not affect the normal development of final strength.

YIELD

Recommended dosage range is 0.5-1.5% by weight of cement (500-1500 g of admixture per 100 kg of cement), depending on the desired plasticizing effect.

RECOMMENDATIONS

- After prolonged storage, remix before use.
- The product **MUST BE PROTECTED FROM FROST** and strong sunlight.
- Use the product at temperatures between +5 °C and +35 °C.
- Equipment that comes into contact with FLUICEM can be washed with water.

PACKAGING

FLUICEM is supplied in 5 kg plastic canisters on 450 kg pallets and in 25 kg plastic canisters on 825 kg pallets. Store the product in dry areas in its original tightly closed packaging. Under these conditions, its stability is at least 12 months.

SAFETY INSTRUCTIONS

During handling, avoid contact with eyes and skin. During use, wear suitable rubber gloves, safety goggles and normal protective work clothing. In case of contact, wash thoroughly with water. For more information on safe use of the product, refer to the relevant Safety Data Sheet.

SPECIFICATION ITEM

Admixture for cement mortars and concrete using a high-quality technological liquid superplasticizer, such as FLUICEM by Colmef Srl, to allow a reduction in mixing water and increase mechanical strength.

TECHNICAL DATA

Complies with Standard:	EN 8145
Complies with Standard:	EN 934-2 Table 1
Complies with Standard:	ASTM 494-79 B, D and G
Appearance:	liquid
Color:	dark brown
Specific gravity (kg/dm ³):	1.15
pH value:	9-10
Chloride content (%):	< 0.1
Equivalent alkali content (%):	< 6
Solubility:	in water, in all proportions
Operating temperature (°C):	from +1

FINAL PERFORMANCE

Admixture dosage (% by weight of cement):	0	0,5	1,0	1,5
Water/cement ratio:	0,6	0,55	0,5	0,45
Water reduction compared with concrete without admixture (%):	-	7	16	25
Workability (cm): initial slump slump at 30 min.	21 15	23 13	21 15	24 19
Compressive strength (kg/cm ²) after:				
1 day	82	124	145	183
3 days	154	205	254	305
7 days	256	304	352	402
28 days	350	405	505	610
Water impermeability according to UNI 9858 and ENV 206:	no	yes	yes	yes

DATA MEASURED AT +23 °C - R.H. 50% AND NO VENTILATION

The information and recommendations above are based on our best experience. However, we cannot accept any responsibility for improper use of the products. We therefore recommend that anyone intending to use them assess whether they are suitable for the intended application and in any case carry out preliminary tests. Always refer to the latest updated version of the technical data sheet, available at www.colmef.com.

FOR FURTHER INFORMATION OR SPECIAL USES, CONTACT COLMEF TECHNICAL ASSISTANCE SERVICE.

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