

Fibrobeton

Concretes with guaranteed performance

Specifically for fibre-reinforced flooring

Compliant with standards UNI EN 206 and UNI 11104 and CNR DT 211:2014

DESCRIPTION

Fibrobeton is a fibre-reinforced concrete, with metal or polymer fibres, specifically for industrial concrete floors, with a minimum compressive strength class of C25/30.

- medium-low thickness floors (12–15 cm);
- floors without electro welded mesh;
- flooring subjected to considerable stress
(e.g. repeated impacts from falling metal objects, ...)

In industrial flooring made with traditional technologies, the positioning of the mesh is very often incorrect (e.g. due to the failure to use the appropriate spacers and/or due to the bulkiness of the mesh in the areas where the sheets overlap). These problems can be resolved very conveniently through the use of **Fibrobeton Metal** and **Fibrobeton Poli STR** with the following advantages:

- reduction of labour costs for mesh placement;
- elimination of the cost of the mesh and spacers;
- increased safety on the construction site as operatives do not have to walk over the mesh during pouring;
- reduction in the risk of macroscopic cracks appearing.

Fibrobeton Metal and **Fibrobeton Poli STR** are recommended for floors that have to withstand metal objects constantly falling onto them, such as in engineering workshops.

Fibrobeton Poli, enforced with non-structural polymer fibres, is suitable for laying flooring during hot and windy periods, when there is a greater risk of cracking in the plastic phase due to rapid evaporation. By increasing its tensile strength in the first few hours after laying the mix, **Fibrobeton Poli** is able to cope with the

tensile stresses arising from plastic shrinkage.

With careful design, correct laying and curing, the **Fibrobeton** range makes it possible to construct floors with excellent durability.

Fibrobeton is available in a range of strength classes that will ensure durability in accord with the environmental conditions. **Fibrobeton** is also available in consistency classes S3, S4 and S5. We strongly recommend the use of consistency class S5 when laying concrete by hand.

The following table can help to define the **Fibrobeton** characteristics that should be included in the specifications.

Parameters to be defined when specifying FIBROBETON	STRENGTH CLASS	CONSISTENCY CLASS	EXPOSURE CLASS	MAXIMUM DIAMETER	FIBRE REINFORCED
	from C25/30 to C35/45	S3, S4, S5	XC, XD, XA, XF	16, 32	Metal, Poli STR, Poli

Fibrobeton Metal can also be ordered with a specific toughness class in accordance with Model Code 2010.

Tables 1, 2 and 3 show, by way of example, some characteristics of **Fibrobeton C25/30**. The values, while reflecting our best experience, should be regarded as indicative.

Table 1:

Approximate finishing times of **Fibrobeton C25/30** DEPENDING ON TEMPERATURE

FINISHING OPERATIONS	INIZIO		FINE	
	10°C	20°C	10°C	20°C
Fibrobeton C25/30	8 h	6 h	10 h	8 h
Normal C25/30 concrete	12 h	9 h	15 h	11 h

Note: in addition to the temperature, the trowelling start and end times depend on the ambient relative humidity, radiation and wind conditions.

Attention: do not rely on these data alone to establish the trowelling times for the flooring

Table 2:

Guideline compressive strengths of **Fibrobeton C25/30** depending on temperature

TIME (DAYS)	COMPRESSIVE STRENGTH (MPa)	
	20°C	10°C
3	15	10
7	25	21
28	37	38

Note: The values were obtained with wet curing (R.H. = 95%) in the laboratory and on specimens compacted to minimise trapped air content. The values actually obtainable on site depend on the temperature and relative humidity conditions to which the structure is exposed, as well as the degree of compaction of the structure.

Attention: given the variability of the environmental conditions to which the paving may be subjected, do not rely on these data alone to establish when the paving can be walked on or entered into service.

Table 3:

Principal characteristics of **Fibropav C25/30** (guideline values)

NORMAL STRENGTH	PROCTOR SETTING TIME START AT 20°C	PROCTOR SETTING TIME END AT 20°C	28-DAY HYGROMETRIC SHRINKAGE (R.H.=50%)	60-DAY HYGROMETRIC SHRINKAGE (R.H.=50%)	SECANT ELASTIC MODULUS AT 28 DAYS (AT 20°C AND RH>95%)
MPa	min	min	µm/m	MPa	MPa
30	390	500	250	280	33000