

Prebeton

Early strength concretes

concretes with guaranteed performance

Compliant with standards UNI EN 206 and UNI 11104

Prebeton is a high-performance early strength concrete with a minimum compressive strength class of C35/45, specifically for the construction of precast reinforced and prestressed concrete structures, such as:

- pillars, beams and roof tiles for craft workshops and industrial buildings;
- infill panels for craft workshops and industrial buildings;
- beams for overhead cranes, box beams for bridge decks for road, motorway and railway works.

Prebeton is a special concrete the composition of which is designed to achieve high mechanical performance in the short term in order to meet the requirements typical of **prefabrication**.

The use of early strength cements and the use of water-reducing admixtures makes it possible to obtain high performance while guaranteeing the durability of the concrete in all classes of environmental exposure (with the exception of those requiring the use of an aerating agent), including the most severe (XA3) laid down in UNI 11104. **Prebeton** special concrete with aggregates having a D max of 16–22 mm is available in three consistency versions: S4, S5 and SCC.

Table 1:

Development over time of the compressive strength of **Prebeton C45/55** under laboratory conditions (20°C) and for an accelerated curing cycle with low-pressure steam (total duration 18 hours: 3 hours of pre-curing, heating at 10°C/h, steady state temperature 45°C)

TIME H/GG	COMPRESSIVE STRENGTH (MPA)	
	20 °C	Tmax 45 °C
18h	–	30
3 days	35	40
7 days	55	50
28 days	65	60

DEFINITION (AND ORDER)	STRENGTH CLASS	CONSISTENCY CLASS	EXPOSURE CLASS	MAXIMUM DIAMETER
PREBETON	from C45/55	from S4 to SCC	XC, XD, XA, XF	16

PHYSICAL AND MECHANICAL CHARACTERISTICS		
PREBETON	Normal strength	C45/55
	Standard hygrometric shrinkage with R.H. 50% after 6 months	520 µm/m
	Secant elastic modulus at 28 days	42500 mm
	Permeability at 28 days. Penetration of water under pressure (5 atm) in accord with UNI EN 12390-8	1 mm
	Flexural tensile strength	6 MPa
PREBETON SCC	Normal strength	C45/55
	Standard hygrometric shrinkage with R.H. 50% after 6 months	570 µm/m
	Secant elastic modulus at 28 days	42000 mm
	Permeability at 28 days. Penetration of water under pressure (5 atm) in accord with UNI EN 12390-8	1 mm
	Flexural tensile strength	6,5 MPa