Technical Data Sheet

Reference:	COBIAX CBX S-140
Product code:	45.03
Document ref.:	FT/45.03/v04
Issue date:	MAY/26
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COBIAX CBX S-140

1 PRODUCT

Void-forming element consisting of a metal support and ellipsoids made of recycled polypropylene (PP), part of the COBIAX CBX System.

2 PURPOSE

Weight reduction of reinforced concrete slabs by creating voids within them, reducing concrete consumption.

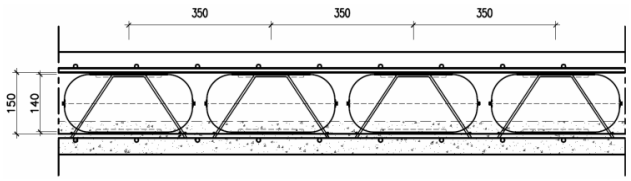
3 ADVANTAGES

Construction of voided slabs with appearance and performance similar to a solid slab of equal thickness, reducing concrete and steel consumption through a fast process adaptable to any geometry. By producing a lighter structure, the COBIAX CBX System enables optimisation of vertical elements and foundations, improvements in seismic behaviour and the achievement of longer spans, while reducing the CO_2 emissions inherent to the construction process.

4 CHARACTERISTICS

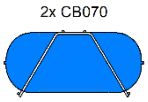
COBIAX CBX S-140 is intended for slabs with a thickness equal to or greater than 0.250 m. The table below sets out the main parameters for three configurations:

Slab Thickness (h)	**[mm]**	**250**	**260**	**270**
Load Reduction	[kN/m²]		-1.88	
Inertia Correction Factor	[-]	0.92	0.93	0.94
Shear Reduction Factor	[-]		0.50	
Support Height	[mm]		150	
Void Height	[mm]		140	
Horizontal Void Distance	[mm]		315	
Distance between Voids	[mm]		35	
Void Spacing	[mm]		350	
No. of Voids	[un/m²]		8.16	
Void Volume	[m³/m²]		0.075	
Voids per Support	[-]		7	
CO_2 Reduction	[ton/m²]		0.016	
Concrete Consumption	**[m³/m²]**	**0.175**	**0.185**	**0.195**



5 COMPONENTS

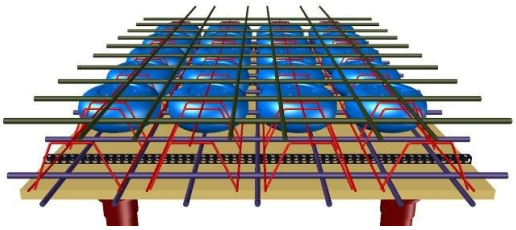
Ellipsoids – The ellipsoids consist of 2 units of recycled polypropylene (PP) with an outer horizontal diameter of 315 mm and a height of 2x 70 mm (CB070 + CB070), giving a total height of 140 mm.



Supports – The supports consist of an electro-welded steel mesh (A500ER) with 4.5 mm bar, mechanically bent and designated CM-140.

6 ASSEMBLY

The assembly process should follow the same procedure as for a solid slab, first placing the bottom reinforcement on which the COBIAX CBX modules rest (the supports must be oriented perpendicular to the reinforcement bars they rest on), after which the top reinforcement is placed on the supports, eliminating the need for “chairs” for this purpose. Concreting should take place in two stages, ensuring that the first stage secures the anchorage of the modules (interval of 1 to 2 hours).



7 SUPPLY

COBIAX CBX modules are supplied as sets of supports and ellipsoids, either coupled or separate. The following values are indicative only.

Coupled Modules	Separate Components	Separate Components	Weight of Modules
13.6 m Lorry	13.6 m Lorry	40” HC Container	kg/m^2
540 m^2	2059 m^2	1630 m^2	5.30

Note: Quantity per load refers to a lorry measuring 13.60 m.

8 USE

Handle with care using safety gloves and avoiding impacts. Cutting of the supports should be carried out using tools designed for this purpose. If no longer usable, COBIAX CBX modules are fully recyclable.

9 CAPACITY

The load-bearing capacity of the dry COBIAX CBX system has been tested to ensure the safe movement of people, equipment and materials during assembly. The test values obtained include loads applied to the modules, guaranteeing in all cases the resistance required for a load of 100 kg.

10 DESIGN

Design consideration of a COBIAX CBX slab should follow the legislation, procedures and criteria applicable to the definition, calculation and detailing of a solid slab, introducing the inertia reduction and shear resistance reduction factors in the voided zones and accounting for the load reduction resulting from the elimination of the corresponding concrete volume.

11 ENVIRONMENT

The system produces a CO_2/m^2 reduction equivalent to 127 km travelled by an Audi A3 (126 g/km average).