



Cobix CQL Report

Project:

1.PP

Location:

Position:

1.PP

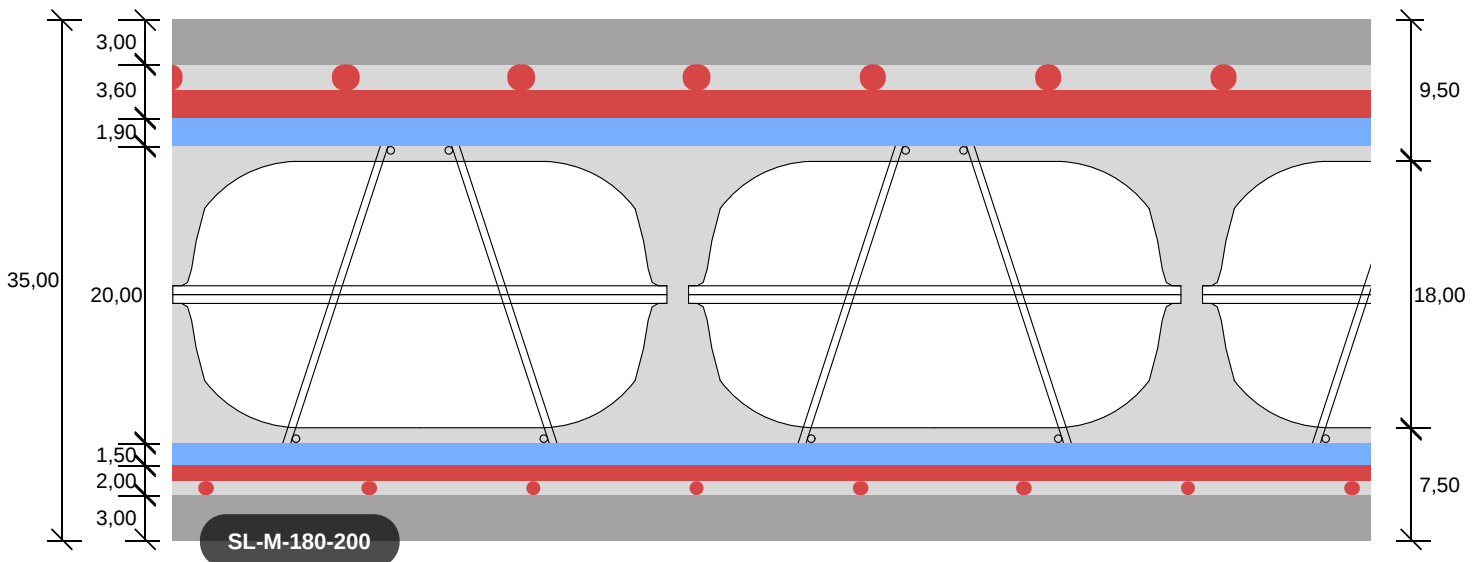
Project 1.PP
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Characteristics of Cobiax slab		Cross-sectional structure	
Method	In-situ	h_d	35,00 cm
Concrete strength class	C 30/37	Concrete cover top $c_{nom, o}$	3,00 cm
Concrete density	25,00 kN/m ³	Top reinforcement layer height $h_{bew, o}$	3,60 cm
Compressive strength f_{ck}	30,00 N/mm ²	Bottom reinforcement layer height $h_{bew, u}$	2,00 cm
System values of the void formers		Concrete cover bottom $c_{nom, u}$	3,00 cm
		Height of top intermediate layer $c_{i, o}$	1,90 cm
Cobiax void former system	SL-M-180-200	Height of bottom intermediate layer $c_{i, u}$	1,50 cm
Support height h_u	20,00 cm		
Cavity height h_v	18,00 cm		
Center distance of void formers e	35,00 cm		
Width of the void former	31,50 cm		

Results

Load reduction due to void formers g_{cx}	2,40 kN/m ²	Static height d	29,75 cm
Dead load in the void former area g_k	6,35 kN/m ²	Stiffness factor f_{EI}	0,93
Concrete saving in the void former area	0,0961 m ³ /m ²	Ultimate limit moment	336,87 kNm/m
CO ₂ -Reduction	0,020 to/m ²		

Illustration Values in cm



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Shear resistance proof of the Cobiax slab

(according to EC 2 (EN 1992-1-1 and DIN EN 1992-1-1/NA))

Reduction factor of the shear resistance f_v	0,50
Cross section of flexural strength rebar $A_{s,l}$	5,00 cm ² /m
b	100,00 cm
d	29,75 cm
γ_c	1,50
k	1,82
ρ_l	0,0017
Shear resistance of the solid slab $V_{Rd,c}$	111,41 kN/m
Shear resistance of the Cobiax slab $V_{Rd,c,cobiax}$	55,710 kN/m

Concreting joint proof in the void former area

(according to EC 2 (EN 1992-1-1 and DIN EN 1992-1-1/NA))

If the Cobiax slab is casted in two steps to avoid buoyancy, an additional connection joint proof must be carried out. A reduced bonding area is applied in the void former area.

Impact V_{Ed} (= $V_{Rd,c,cobiax}$)	55,71 kN/m
Joint characteristics	smooth
Reduction of the bonding area to	30%
z	26,78 cm
β	1,00
α	90,00 °
c	0,20
μ	0,60
v	0,20
f_{ctd}	1,13
V_{Edi}	0,21 MN/m
σ_n	0,00 MN/m ²
Required bond reinforcement $a_{s,erf}$	4,48 cm ² /m ²
Existing bond reinforcement $a_{s,vorh}$	5,39 to 9,24 cm ² /m ²