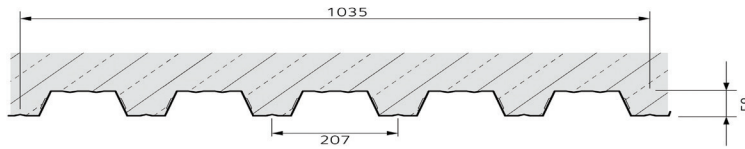
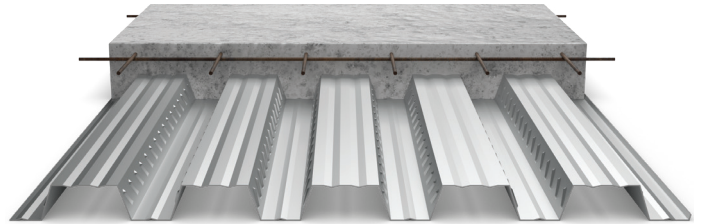


Cofraplus® 60

Composite floor decking

Up to 30% lighter than traditional concrete slabs and easily stacked for efficient transportation and storage, Cofraplus® 60 composite slabs are a mainstream solution designed for medium load / span floors. It is ideal for all kinds of projects including refurbishments.

Cofraplus® 60 is proposed with two cover widths (1035 mm and 828 mm) for an optimized installation on site.



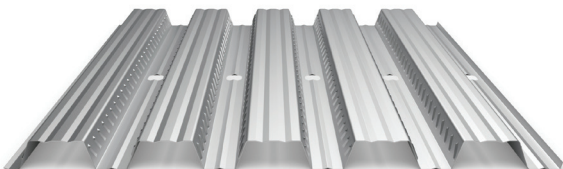
CE marking according to EN 1090-1

Characteristics of the base material		Norms
Steel grade	S 350 GD	EN 10346
Corrosion protection	Galvanised steel ZM 175	P 34-310 ETPM ZMevolution® or AbZ Z-30.11-61
	Galvanised coated steel ZM 175	P 34-301 EN 10169+A1
Organic coating		Norms
Hairplus® 25	Category CP13	P 34-310
Other coatings		On demand

Characteristics	Nominal thickness of the profile sheet [mm]			
	0,75	0,88	1,00	1,25
Weight [kg / m ²]	8,53	10,00	11,37	14,22
Cross section A _p [mm ² / m]	1 029	1 217	1 391	1 797
Effective inertia I _{eff} [cm ⁴ / m]	44,37	52,64	60,08	75,10
Height of neutral axis [mm]	33,70	33,70	33,70	33,70
Modulus of inertia [cm ³ / m]	13,16	15,62	17,83	22,28

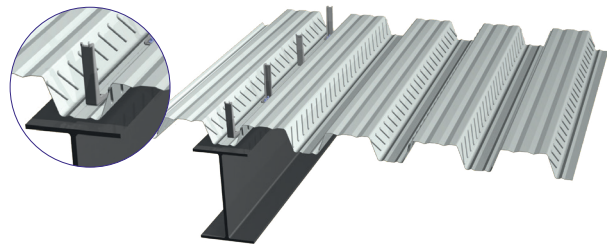
Cofraplus® 60P:

Pre-punched version, compatible with shear connectors welded in advance or in shop to composite beams.



Cofraplus® 60C:

If shear connectors are welded or nailed to the across the profile sheet to the beam, the Cofraplus® 60 C version brings advantages. The spacing between the 2 stiffeners in the lower flange permits to well position the connector.



Nominal concrete consumption

	Thickness of the slab [cm]									
	11	12	13	14	15	16	17	18	19	20
Concrete volume [l / m ²]	100	110	120	130	140	150	160	170	180	190
Theoretical weight* of the composite slab [kg / m ²]	250	275	300	325	350	375	400	425	450	475

Concrete density 2500 kg / m³

Maximum recommended slab thickness d = 30 cm

*Additional weight du to pounding effect is not included



Fire resistance

	REI [min]			
	30	60	90	120
Thickness of the slab [cm]	11	12	14	16

REI: fire protection rating of the raw composite slab

The minimum thickness is required to comply with the temperature criterion (I) on the non-fire exposed side.

According to EN 1994-1-2 §4.3.2, Cofraplus® 60 composite floors are rated REI 30 even without specific reinforcement in the rib. For higher fire resistance classes, reinforcement bars are required. These are positioned in the ribs of the profile. Their section is determined by using Cofra® 5.

Sound insulation

The acoustic behaviour of a raw composite slab is determined by its mass. Values calculated by modelling – study report CSTB No. AC15-26054708

	Thickness of the slab [cm]								
	11	12	13	14	15	16	17	18	19
R_w [dB]	46	47	48	48	49	50	51	52	53
(C; Ctr) [dB]	(-2; -6)	(-2; -6)	(-2; -6)	(-1; -6)	(-1; -6)	(-2; -6)	(-2; -7)	(-2; -7)	(-2; -7)

Structural performance

Load / Span table

The value provided in each cell of the table loads is the maximum live load capacity Q (kN / m²). The self weight of the slab is already included. The color of each cell give information about the required steel thickness. A calculation using Cofra 5 might optimise the given values according to the project requirements.

Single span 

Thickness of the slab [cm]	Span [m]																				
	2,00	2,10	2,20	2,30	2,40	2,50	2,60	2,70	2,80	2,90	3,00	3,10	3,20	3,30	3,40	3,50	3,60	3,70	3,80	3,90	4,00
20	9,20	8,57	8,00	7,48	7,00	6,56	6,15	5,78	5,43	5,11	4,80	4,52	4,25	4,00	3,77	3,55	3,34	3,14	2,95	2,78	2,61
19	8,76	8,17	7,62	7,13	6,68	6,26	5,87	5,52	5,18	4,88	4,59	4,32	4,07	3,83	3,61	3,40	3,20	3,01	2,83	2,66	2,50
18	8,33	7,76	7,25	6,78	6,35	5,96	5,59	5,25	4,94	4,65	4,37	4,12	3,88	3,66	3,44	3,24	3,06	2,88	2,71	2,55	2,40
17	7,89	7,36	6,88	6,43	6,03	5,65	5,31	4,99	4,69	4,42	4,16	3,92	3,69	3,48	3,28	3,09	2,92	2,75	2,59	2,44	2,29
16	7,46	6,96	6,50	6,08	5,70	5,35	5,03	4,73	4,45	4,19	3,95	3,72	3,51	3,31	3,12	2,94	2,77	2,62	2,47	2,32	2,19
15	7,03	6,56	6,13	5,74	5,38	5,05	4,75	4,46	4,20	3,96	3,73	3,52	3,32	3,13	2,96	2,79	2,63	2,48	2,34	2,21	2,08
14	6,59	6,15	5,75	5,39	5,05	4,75	4,46	4,20	3,96	3,73	3,52	3,32	3,13	2,96	2,79	2,64	2,49	2,35	2,22	2,10	1,98
13	6,16	5,75	5,38	5,04	4,73	4,45	4,18	3,94	3,71	3,50	3,30	3,12	2,95	2,78	2,63	2,49	2,35	2,22	2,10	1,99	1,88
12	5,72	5,35	5,01	4,69	4,41	4,14	3,90	3,67	3,47	3,27	3,09	2,92	2,76	2,61	2,47	2,34	2,21	2,09	1,98	1,87	-
11	5,29	4,95	4,63	4,35	4,08	3,84	3,62	3,41	3,22	3,04	2,87	2,72	2,57	2,44	2,31	2,18	2,07	-	-	-	-
	Without propping										With propping										

Multiple spans  with $L_1 = L_2$ and internal width support 100mm

Thickness of the slab [cm]	Span [m]																				
	2,00	2,10	2,20	2,30	2,40	2,50	2,60	2,70	2,80	2,90	3,00	3,10	3,20	3,30	3,40	3,50	3,60	3,70	3,80	3,90	4,00
20	11,65	10,93	10,28	9,68	9,14	8,63	8,17	7,74	7,34	6,97	6,63	6,30	6,00	5,71	5,45	5,19	4,95	4,73	4,51	4,31	4,12
19	11,09	10,41	9,79	9,22	8,70	8,23	7,79	7,38	7,00	6,65	6,32	6,01	5,72	5,45	5,20	4,96	4,73	4,51	4,31	4,12	3,93
18	10,53	9,88	9,29	8,76	8,27	7,82	7,40	7,01	6,65	6,32	6,01	5,72	5,44	5,19	4,95	4,72	4,50	4,30	4,11	3,92	3,75
17	9,97	9,36	8,80	8,30	7,83	7,41	7,01	6,65	6,31	5,99	5,70	5,42	5,17	4,92	4,70	4,48	4,28	4,08	3,90	3,73	3,57
16	9,41	8,83	8,31	7,83	7,40	7,00	6,63	6,28	5,96	5,67	5,39	5,13	4,89	4,66	4,45	4,24	4,05	3,87	3,70	3,54	3,38
15	8,85	8,31	7,82	7,37	6,96	6,59	6,24	5,92	5,62	5,34	5,08	4,84	4,61	4,40	4,20	4,01	3,83	3,66	3,50	3,34	3,20
14	8,29	7,78	7,33	6,91	6,53	6,18	5,85	5,55	5,27	5,01	4,77	4,55	4,33	4,13	3,95	3,77	3,60	3,44	3,29	3,15	3,01
13	7,73	7,26	6,84	6,45	6,09	5,77	5,47	5,19	4,93	4,69	4,46	4,25	4,05	3,87	3,69	3,53	3,37	3,23	3,09	2,96	2,83
12	7,17	6,74	6,34	5,99	5,66	5,36	5,08	4,82	4,58	4,36	4,15	3,96	3,78	3,61	3,44	3,29	3,15	3,01	2,89	2,76	2,65
11	6,61	6,21	5,85	5,53	5,22	4,95	4,69	4,46	4,24	4,03	3,84	3,67	3,5	3,34	3,19	3,06	2,92	2,80	2,68	2,46	-
	Without propping										With propping										

Key	Thickness [mm]
Installation without propping	0,75
	0,88
	1,00
With propping	0,75

Assumptions

- Concrete C25 / 30 (density: 25 kN / m³)
- Fire resistance REI30
- Deflection while pouring L / 180
- Deflection in service L / 350 if $L < 3.5$ m or $(0.5 \text{ cm} + L / 700)$ if $L > 3.5$ m
- Materials safety factors : $\gamma_M=1.0$, $\gamma_C=1.5$, $\gamma_S=1.15$
- Construction loads according to EN 1991-1-6 ($Q_{ca} = 0,75 \text{ kN} / \text{m}^2$, $Q_{cf} = 0,75 \text{ kN} / \text{m}^2$)