

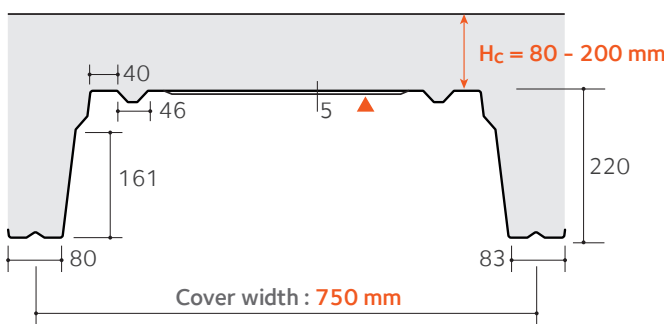
Long span floor decking

Cofraplus® 220

Cofraplus® 220 is a long span floor system with an additive design approach, which means that the structural resistance of the steel profile on one hand and the resistance of the ribbed reinforced concrete slab on the other hand are combined to give the slab its full resistance.

The unique performance of this versatile floor system makes it suitable for any type of construction, particularly for light weight structures with long spans (car parks, service sector, industrial use, etc.) associated to any kind of main structures (steel, concrete or even timber)

The Cofraplus® 220 profile can be produced based on galvanised steel (ZMEvolution) or based on any other organic coated steel.



▲ Coated face

CE - Marking
DTA No. 3.1/17-927_V1 or AbZ Z-26.1-55

Characteristics of the base material		Norms
Steel grade	S 350 GD	EN 10346
Type of corrosion protection	galvanised steel ZM 175 galvanised steel ZM 175 with organic coating	EN 10346 P 34-310 ETPM ZMEvolution or AbZ Z-30.11-61 EN 10169+A1 P 34-301
Organic coating		Norms
Hairplus 25 µm	Category IIIa Category CPI3	P 34-310 EN 10169+A1
Other coatings	on demand	

Characteristics	Nominal thickness of the profile sheet [mm]	
	1,13	1,25
Weight [kg/m ²]	15,14	16,75
Cross section A_p [mm ² /m]	1 817	2 017
Effective inertia I_{eff} [mm ⁴ /m]	92 600	106 300
Height of neutral axis [mm]	159,90	159,90
Modulus of inertia [mm ³ /m]	57 910	66 480

Nominal concrete consumption

	Thickness h_c [cm]							
	80	90	100	110	120	130	140	150
Concrete volume [l/m ²]	117	127	137	147	157	167	177	187
Theoretical weight of the composite slab [kg/m ²]	308	333	358	383	408	433	458	483

Density of the concrete 2500 kg/m³

Possibility of bridging large spans

- Up to 5,5 m without props
- Up to 8,5 m with props

Considerable flexibility in use: the profile's lightness (12,5 kg/ml) makes it easy to handle, thus reducing the costs of lifting devices for installation.

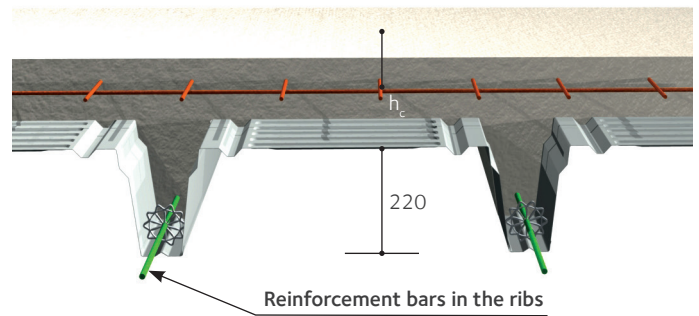
Compatibility with steel, concrete or timber frame for new builds, extensions and renovations

Fire resistance 60 to 120 minutes, thanks to the incorporation of reinforcement in the ribs.

Fire resistance

h_c mini [mm]	REI [min]			
	30	60	90	120
80	80	80	100	120

The size and amount of reinforcement get calculated according to the project specifications.
A specific calculation note for a pre-design will be communicated by our consultant engineers.



Structural performance

Acceptable unweighted q values with $g' = 0$ in kg/m^2

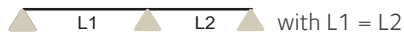
Our engineering design office will be able to refine these indications based on the detailed specifications of your project

Single span



Thickness of the slab [cm]	span [m]																				
	5,00	5,10	5,20	5,30	5,40	5,50	5,60	5,70	5,80	5,90	6,00	6,20	6,40	6,60	6,80	7,00	7,20	7,40	7,60	7,80	8,00
15	614	575	540	500	470	725	685	650	610	575	545	610	575	545	490	490	465	440	420	405	380
14	625	585	545	510	480	725	690	650	615	580	550	600	570	540	460	460	460	440	415	395	355
13	630	591	555	520	490	715	690	655	625	585	555	590	560	535	435	435	455	435	415	395	330
12	720	600	565	530	495	700	685	655	625	590	555	585	555	525	414	415	455	430	410	390	310
11	730	690	570	540	480	690	670	655	625	590	560	575	545	520	395	395	450	430	410	390	295
10	735	695	630	550	470	675	660	640	625	595	565	565	540	515	380	380	445	425	405	385	285
9	745	700	614	530	460	665	650	630	615	600	565	555	530	505	375	375	440	420	400	380	280
8	670	685	600	525	455	650	635	620	605	590	555	550	525	500	365	365	435	415	400	370	275
Steel reinforcement per rib	Ø 12 mm					Ø 16 mm					Ø 20 mm					Ø 25 mm					
	stirrups Ø6 mm, spaced 200 mm																				
	Without propping										With propping										

Multiple spans



Thickness of the slab [cm]	span [m]																				
	5,00	5,10	5,20	5,30	5,40	5,50	5,60	5,70	5,80	5,90	6,00	6,20	6,40	6,60	6,80	7,00	7,20	7,40	7,60	7,80	8,00
15	665	645	625	605	585	565	550	530	515	500	485	455	430	405	380	355	335	315	295	275	260
14	655	635	615	595	575	560	540	525	510	495	480	450	425	400	35	355	335	315	295	280	260
13	645	325	605	585	570	550	535	520	505	490	475	445	420	400	375	355	335	315	295	280	265
12	635	615	595	580	560	545	530	515	500	485	470	445	420	395	35	350	335	315	295	280	265
11	625	605	585	570	555	535	520	505	490	480	465	440	415	395	370	350	330	315	295	280	265
10	610	595	575	560	545	530	515	500	485	475	460	435	410	390	370	350	330	315	300	285	270
9	600	585	570	550	535	520	510	495	480	475	455	430	410	390	370	350	330	315	300	285	270
8	595	575	560	545	530	515	500	490	475	460	450	425	405	385	365	350	330	315	300	285	270
Steel reinforcement per rib	Ø 12mm					Ø 16mm					Ø 20mm					Ø 25mm					
	Stirrups Ø 6 mm, spaced 200 mm + welded mesh Ø 8/100mm on mid-supports																				
	Without propping										With propping										

Assumptions

- Concrete C25/30 (density 2500 kg/m^3)
- Fire resistance REI30
- Deflection while pouring $L / 180$
- Deflection in service L [cm] / 350 if $L < 3,5$ m or $(0.5 \text{ cm} + L / 700)$ if $L > 3,5$ m

Key	Thickness [mm]
Installation without propping	1,13
With propping	1,25