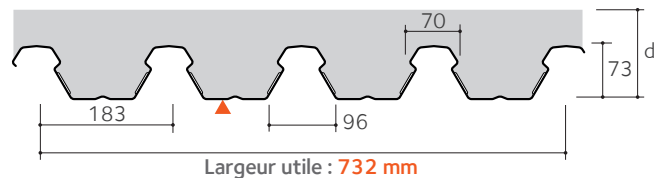
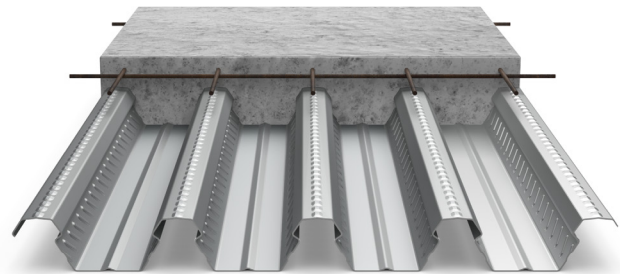


Composite floor decking with dovetail section

Cofrastra® 70



Cofrastra® 70 is a steel profile used to realise composite slabs. The longitudinal shear bond between the concrete and the profile realised by embossment and its dovetail section gives an additional reinforcement to the slab construction. The profile serves as formwork in the pouring phase of the concrete and allows savings to be made on the lower reinforcement layer and to its self-weight due to its geometry. Due to its high inertia Cofrastra® 70 allows to bridge larger spans without propping in the construction stage. Further, its strong shears resistance makes it suitable for heavy loads. Its dovetail geometry ensures a very good adhesion and, with its Cofrafix clip system, allows to suspend building equipment, ducts or false ceilings without any dowels or pins.



▲ Coated face

CE - Marking

German technical approval: AbZ Z-16.1-22

French technical approval : DTA No. 3/15-802

Characteristics of the base material		Norms
Steel grade	S 350 GD	EN 10346
Type of 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 µm	Category IIIa	P 34-310
	Category CPI3	EN 10169+A1
Other coatings	On demand	

Characteristics	Nominal thickness of the profile sheet [mm]		
	0,75	0,88	1,00
Weight [kg/m ²]	10,05	11,80	13,40
Cross section A_p : [mm ² /m]	1 219	1 442	1 648
Effective inertia I_{eff} : [mm ⁴ /m]	657 600	774 900	883 200
Height of neutral axis [mm]	29,80	29,80	29,80
Modulus of inertia [mm ³ /m]	22 050	25 990	29 620

Nominal concrete consumption

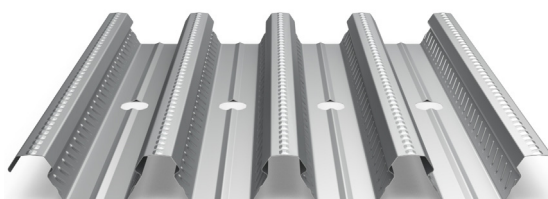
	Thickness of the slab [cm]											
	12	13	14	15	16	17	18	19	20	22	25	30
Concrete volume [l/m ²]	94	104	114	124	134	144	154	164	174	194	224	274
Theoretical weight of the composite slab [kg/m ²]	235	260	285	310	335	360	385	410	435	485	560	685

Concrete density 2500 kg/m³

Maximum recommended slab thickness d = 30 cm

Cofrastra 70 P:

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



The Cofra® 5 web based software application

will give detailed information about the required reinforcement according to the project specifications.



www.arcelormittal.com/cofra5

Fire resistance

Thickness of the slab [cm]	REI [min]			
	30	60	90	120
12	12	12	13	15

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 EN1994-1-2 4.3.2, Cofrastra® 70 floors are by default REI 30, even without specific reinforcement in the ribs. For higher fire resistance classes, reinforcement bars are required. These are positioned in the ribs of the profile. Their size is determined by calculation (see Cofra5).

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]									
	12	13	14	15	16	17	18	19	20	21
R _w [dB]	48	49	49	50	51	52	53	53	54	54
(C;Ctr) [dB]	(-2;-6)	(-2;-7)	(-1;-6)	(-2;-6)	(-2;-7)	(-2;-7)	(-2;-6)	(-2;-7)	(-2;-6)	(-1;-6)

Structural performance

Acceptable unweighted q values with g' = 0 in kg/m²

A calculation using Cofra 5 might optimise the design 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	
21	2336	2137	1961	1806	2367	2349	1433	1333	1242	1159	1084	1014	950	892	837	787	740	697	656	618	583	
20	2271	2076	1904	1752	2281	2124	2115	1290	1201	1121	1047	979	917	860	808	759	713	671	632	595	561	
19	2205	2014	1846	1698	1566	2042	2037	1247	1161	1082	1010	945	885	829	778	730	686	645	607	572	538	
18	2140	1953	1789	1644	1515	1959	1826	1829	1120	1043	974	910	852	798	748	702	659	620	583	548	516	
17	2074	1891	1731	1590	1464	1352	1748	1631	1640	1005	937	875	819	766	718	674	633	594	559	525	494	
16	2009	1830	1673	1535	1413	1304	1206	1557	1569	966	901	841	786	735	688	645	606	569	534	502	472	
15	1943	1769	1616	1481	1362	1256	1160	1482	1384	1401	864	806	753	704	659	617	579	543	510	479	450	
14	1879	1708	1559	1428	1312	1208	1116	1033	1313	1227	1248	772	721	673	630	590	553	518	486	456	429	
13	1813	1646	1501	1373	1260	1159	1070	989	916	1158	1082	1107	687	641	599	560	525	492	461	432	406	
12	1747	1585	1443	1319	1209	1111	1024	946	876	812	1017	951	978	610	569	532	498	466	436	409	-	
	Without propping												With propping									

Multiple spans



with L1 = L2 and prop width 100 mm

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
21	3000	2762	2548	2359	2190	2039	1904	1781	2277	2185	2099	1999	1897	1870	1177	1116	1059	1006	956	910	866
20	2917	2679	2469	2284	2120	1972	1840	1721	1613	2061	1980	1904	1816	1764	1701	1073	1018	966	918	873	831
19	2829	2596	2391	2210	2049	1905	1776	1660	1555	1459	1861	1790	1723	1646	1599	1030	976	926	880	837	796
18	2741	2512	2312	2136	1979	1838	1713	1599	1497	1404	1319	1675	1613	1553	1489	1444	935	887	842	800	761
17	2595	2429	2234	2061	1908	1771	1649	1539	1439	1348	1266	1190	1503	1447	1396	1345	1299	847	804	763	725
16	2407	2278	2155	1987	1838	1704	1585	1478	1381	1293	1213	1140	1073	1341	1293	1248	1204	808	766	727	690
15	2218	2099	1991	1893	1767	1637	1521	1417	1323	1238	1160	1089	1024	964	1191	1149	1110	1071	728	690	655
14	2030	1921	1823	1733	1650	1571	1458	1357	1266	1183	1108	1039	976	919	866	1051	1015	979	947	654	620
13	1840	1742	1652	1570	1495	1426	1363	1296	1207	1127	1054	988	927	871	820	773	730	981	858	817	584
12	1652	1563	1482	1409	1342	1280	1222	1169	1120	1072	1001	937	879	825	776	730	688	650	769	730	682
	Without propping																				

Assumptions

- Concrete C25/30 (Density 2500 kg/m³)
- Fire resistance REI30
- Deflection while pouring L / 180
- Deflection in service L [cm] / 350 if L < 3.5 m or (0.5 cm + L / 700) if L > 3.5 m

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