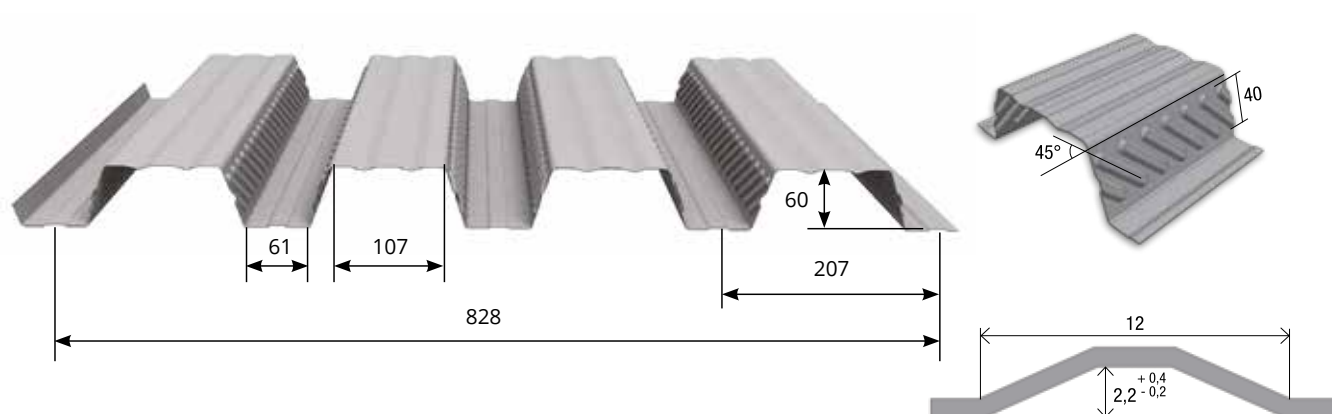


PCB 60



Geometric detail of the sheet

Geometric detail of the embossing

THICKNESS mm	0.75	0.88	1
WEIGHT (daN/m ²)	8.67	10.18	11.57

RECOMMENDED APPLICATION

Shuttering and reinforcement of concrete slabs

PRODUCTION PROGRAMME

Galva S320 GD + Z275

Polyester 25μ

SHEET
thickness 0.75 mm
(other thickness available on request)



Contact us
for coloured floor systems

STANDARDS

Galvanised steel NF EN 10346/NF P 34-310

Pre-painted steel NF EN 10169/NF P 34-301

REGULATIONS

TECHNICAL APPLICATION DOCUMENT

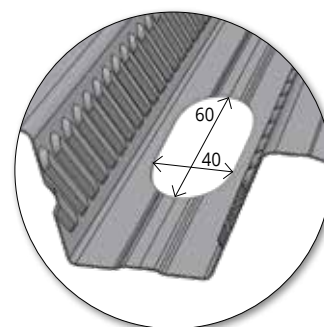
DTA 3/15-806

QUALITY

QB MARKING

CE MARKING

Production programme



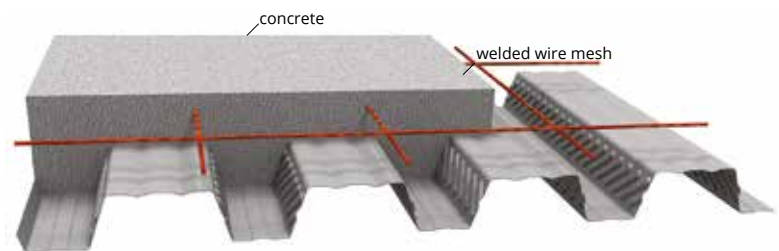
The PCB 60 composite floor is available in a pre-punched version (oblong holes, 60 mm long x 40 mm wide). The punching plan shall be provided.

CHARACTERISTICS OF PCB 60 PROFILE

SHEET THICKNESS		SECTION	WEIGHT	EFFECTIVE INERTIA MOMENT	MOMENT OF RESISTANCE	RESISTANT SHEAR STRESS
Galvanised	Bare	Ap	g0	leff	Mtrd	Vrd
mm	mm	cm ²	daN/m ²	cm ⁴	daN.m	daN
0.75	0.71	10.61	8.67	42.76	426	1142.7
0.88	0.84	12.55	10.18	51.47	507.5	1553.9
1	0.96	14.35	11.57	59.7	583	1981.5

CONCRETE CONSUMPTION FOR THE PCB 60

Slab thickness	Nominal volume in litres	Weight of concrete alone
cm	litres/m ²	daN/m ²
11	73	182.5
12	83	207.5
13	93	232.5
14	103	257.5
15	113	282.5
16	123	307.5
17	133	332.5
18	143	357.5
19	153	382.5
20	163	407.5
21	173	432.5
22	183	457.5
23	193	482.5
24	203	507.5



View of concrete composite floor and its welded wire mesh

Assumed bulk density of concrete: 2500 daN/m³
 Due to the deflection and weight of the profile, the weight of the concrete must be added to obtain the total weight of the floor

CONCRETE/STEEL SHEET COMPOSITE

The factors m and k opposite are used during the verification of the concrete/steel sheet composite. This verification is one of the floor dimensioning criteria.

	SLIP ULTIMATE LIMIT STATE	SLIP SERVICEABILITY LIMIT STATE
	N/mm ²	N/mm ²
m	139.73	13.65
k	-0.0322	0.159

FIRE STABILITY

PCB 60 sheet metal has a fire resistance of 30 minutes without additional reinforcement.

For periods between 60 and 120 minutes, reinforcement steel bars need to be placed in the ribs of the concrete slab to ensure mechanical strength.

THERMAL INSULATION

For a desired fire resistance, a minimum slab thickness is recommended to ensure compliance with the temperature criterion on the unexposed face.

FIRE RESISTANCE (MIN)	30	60	90	120
MIN. SLAB THICKNESS (CM)	11	12	14	16

Steel/concrete composite construction

WHAT IS A STEEL/CONCRETE COMPOSITE CONSTRUCTION?

In a steel/concrete composite construction, the concrete slab is fixed to the beam using connectors (or studs). These connectors prevent slipping between the two materials and allow the concrete to strengthen the beam.

Principle:

Connectors are attached along the length of the beam. They are used to connect the steel and concrete. In the case of riveted connectors, they are fixed directly across the beam. They are simple and fast to install. In the case of welded connectors, they are shop-welded to the beams and the sheets must be pre-punched for installation.

PRE-PUNCHING OPTION

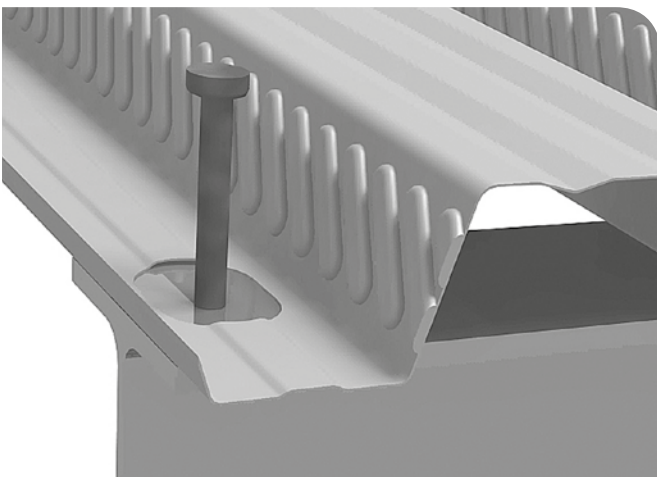
The PCB 60 composite floor is available in a pre-punched version (oblong holes, 60 mm long x 40 mm wide). The punching plan shall be provided.



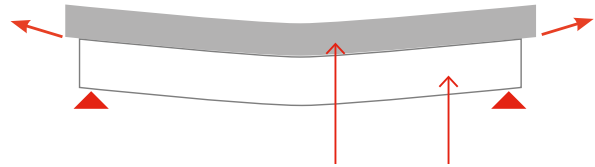
THE TYPE OF CONNECTORS TO USE IS DECIDED WHEN THE FRAMEWORK IS BEING DESIGNED.

WHAT ARE THE ADVANTAGES OF THIS SOLUTION?

For an identical live load, the use of connectors reduces the size of the metal beams. The reduction in the weight of the steel can be up to 30%. As the dimensions are reduced, the overall floor height is reduced, thereby maximising space.

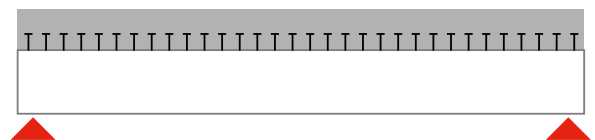


Traditional

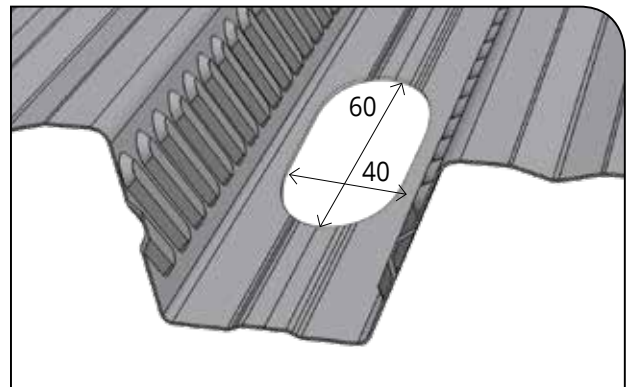


Slippery between the concrete and the beam

Composite



The connectors prevent slippery between the concrete and the beam.



The "composite slab + connectors" solution optimises the structure and reduces costs.

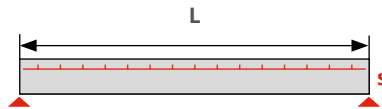
The shape of the BACACIER PCB60 composite floor can be used with any type of connector as the bottom of the corrugation includes a flat stiffener.



Maximum use load (in daN/m²)

SHEET THICKNESS: 0.75 mm

INSTALLATION ON 2 SUPPORTS



0 PROP 1 PROP 2 PROPS

Span L (cm)	SLAB THICKNESS s (cm)							
	11	12	14	16	18	20	22	24
200	1235	1394	1711	2028	2345	2662	2704	2991
210	1114	1257	1543	1829	2115	2154	2410	2666
220	1010	1139	1398	1658	1697	1926	2155	2384
230	919	1037	1272	1316	1522	1727	1933	2138
240	839	947	999	1183	1368	1553	1737	1922
250	769	868	899	1066	1232	1398	1564	1731
260	707	661	811	961	1111	1261	1410	1560
270	529	597	732	867	1002	1137	1273	1408
280	477	538	660	782	904	1026	1148	1270
290	431	486	596	706	816	926	1036	1146
300	388	438	537	636	735	834	934	1033
310	350	394	483	572	662	751	840	929
320	314	354	434	514	594	673	753	833
330	281	316	388	459	531	602	673	521
340	250	281	345	408	472	535	391	432
350		249	305	361	417	473	314	347
360		218	267	316	365	216	241	267
370			231	273	316	153	171	189
380								
390								
400								

The dead weight of the slab is not included in the table values.

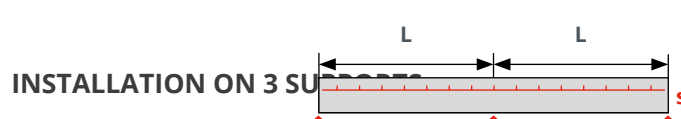
For a given span L and slab thickness d , the tables above give the maximum load in daN/m² uniformly distributed that the floor can receive (in addition to the dead weight of the slab) as well as the number of props to use at casting

Calculation hypotheses:

- ✓ Equal spans
- ✓ Distributed load
- ✓ Grade C25/30 concrete with density of 2500 kg/m³
- ✓ 30-minute fire rating
- ✓ Slenderness ratio $L/d \leq 33$
- ✓ Width of support: 160mm
- ✓ Reinforcement steel bar: yield strength 500MPa
- ✓ Deflection during casting $L/180$
- ✓ Slab deflection: not considered
- ✓ Moment redistribution on supports=15%

Maximum use load (in daN/m²)

SHEET THICKNESS: 0.75 mm



0 PROPS **1 PROPS** **2 PROPS**

Span L (cm)	SLAB THICKNESS s (CM)							
	11	12	14	16	18	20	22	24
200	1147	1293	1587	1881	2174	2468	2761	3055
210	1083	1222	1499	1776	2053	2331	2608	2885
220	1025	1156	1419	1681	1943	2206	2468	2730
230	972	1096	1345	1594	1843	2091	2301	2545
240	923	1041	1278	1514	1750	1862	2084	2305
250	864	975	1197	1419	1490	1691	1893	2094
260	794	896	1100	1174	1357	1540	1724	1907
270	733	827	904	1071	1238	1406	1573	1740
280	677	674	826	979	1132	1285	1438	1591
290	547	617	757	897	1037	1177	1317	1457
300	502	566	694	823	951	1079	1208	1336
310	461	519	637	755	873	991	1109	1226
320	423	477	586	694	802	910	1019	1127
330	389	439	538	638	737	837	936	1036
340	358	404	495	587	678	769	861	715
350	329	371	455	539	623	707	574	634
360	303	341	418	496	573	650	506	560
370	278	313	384	455	526	396	443	490
380	255	288	353	418	483	343	384	424
390	234	264	323	383	259	293	328	362
400		241	296	350	217	246	275	303

The dead weight of the slab is not included in the table values.

For a given span L and slab thickness d, the tables above give the maximum load in daN/m² uniformly distributed that the floor can receive (in addition to the dead weight of the slab) as well as the number of props to use at casting

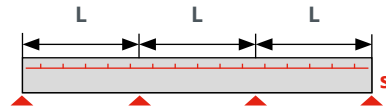
Calculation hypotheses:

- ✓ Equal spans
- ✓ Distributed load
- ✓ Grade C25/30 concrete with density of 2500 kg/m³
- ✓ 30-minute fire rating
- ✓ Slenderness ratio $L/d \leq 36$
- ✓ Width of support: 160mm
- ✓ Reinforcing steel: elasticity limit 500MPa
- ✓ Deflection during casting $L/180$
- ✓ Slab deflection: not considered
- ✓ Moment redistribution on supports=15%

Maximum use load (in daN/m²)

SHEET THICKNESS: 0.75 mm

**INSTALLATION ON 4
SUPPORTS**



0 PROPS **1 PROPS** **2 PROPS**

Span L (cm)	SLAB THICKNESS s (cm)							
	11	12	14	16	18	20	22	24
200	1161	1310	1607	1905	2202	2499	2797	3094
210	1097	1237	1518	1799	2080	2361	2642	2922
220	1038	1171	1437	1703	1969	2235	2500	2735
230	985	1111	1363	1615	1867	2119	2229	2467
240	922	1040	1277	1514	1751	1803	2017	2232
250	845	954	1170	1387	1441	1635	1830	2024
260	777	877	1076	1133	1310	1487	1664	1841
270	716	808	871	1032	1194	1355	1516	1677
280	662	648	795	942	1089	1236	1383	1531
290	525	592	727	861	996	1130	1264	1399
300	481	542	665	788	911	1034	1157	1280
310	440	496	609	721	834	946	1059	1171
320	403	455	558	661	764	867	970	1073
330	369	417	511	605	700	794	888	983
340	338	382	468	554	641	727	814	660
350	310	349	428	507	586	665	745	579
360	283	319	392	464	536	608	455	503
370	259	292	357	423	489	555	391	432
380	236	266	326	386	446	296	330	365
390	214	241	296	350	405	244	273	301
400		218	268	317	172	195	218	241

The dead weight of the slab is not included in the table values.

For a given span L and slab thickness d, the tables above give the maximum load in daN/m² uniformly distributed that the floor can receive (in addition to the dead weight of the slab) as well as the number of props to use at casting

Calculation hypotheses:

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