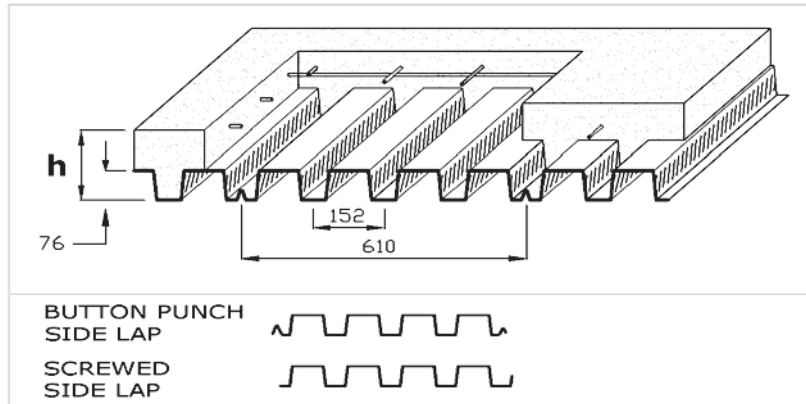


HI-BOND
COMPOSITE FLOOR

HB306
ZF75 GALVANNEAL



METRIC

LIMIT STATES DESIGN

Note

- Load Tables are based on the design of ONE-WAY composite slabs carrying uniformly distributed loads on a simple span basis. For complete design criteria see the VICWEST Hi-Bond Composite Floor Designer's Manual.
- A uniform loading in excess of 10 kPa (200 psf) is often an indication of concentrated or moving loads. Such conditions may require additional reinforcing steel. Contact VICWEST for additional design information
- Slab Thickness *h*, is from underside of steel deck to top of concrete. Maximum span is not to exceed 32*h*.
- Properties and loads are based on Grade 230 steel (Grade 33 steel) with a minimum yield stress of 230 MPa (33,000 psi) and a maximum stress under Factored loads of 207 MPa (29,700 psi).
- Load values are based on Normal Weight Concrete (density of 2300 kg/m³) (145 pcf) with a minimum compressive strength of 20.7 MPa (3,000 psi) and a Modular Ratio *n*=9

NOMINAL CORE THICKNESS (mm)	AREA OF STEEL (mm ²)	MASS WITH ZF75 GALVANNEAL (kg/m ²)	SECTION MODULUS		Moment of Inertia		DEPTH FROM NEUTRAL AXIS TO BOTTOM OF DECK Y _b (mm)	MAXIMUM FACTORED REACTIONS	
			MIDSPAN S _m (mm ³ x 10 ³)	SUPPORT S _s (mm ³ x 10 ³)	MIDSPAN I _m (mm ⁴ x 10 ³)	FULL I _f (mm ⁴ x 10 ³)		EXTERIOR (kN)	INTERIOR (kN)
0.76	1429.7	11.64	25.94	26.67	1186.8	1309.8	42.83	13.6	21.5
0.91	1717.3	13.94	33.41	33.81	1488.4	1572.3	42.94	19.0	30.1
1.22	2284.3	18.42	46.42	48.39	2071.6	2088.8	43.17	32.1	50.7
1.52	2856.1	23.03	59.06	60.10	2608.4	2608.4	43.40	48.2	76.4

PHYSICAL PROPERTIES STEEL PROPERTIES

(PER METRE WIDTH)
In accordance with CSA Specification S136-07

SLAB THICKNESS <i>h</i> (mm)	141	151	166	176				
Slab Weight, W ₁ (kN/m ²)	2.32	2.55	2.90	3.12				
Concrete Volume, (m ³ /m ²)	0.095	0.105	0.120	0.130				
Base Steel Nominal Thickness (mm)	l _c	d	l _c	d	l _c	d	l _c	d
0.76	13790	98.2	16828	108.2	22205	123.2	26380	133.2
0.91	14721	98.1	17953	108.1	23669	123.1	28103	133.1
1.22	16398	97.8	19978	107.8	26309	122.8	31214	132.8
1.52	17920	97.6	21814	107.6	28703	122.6	34040	132.6

PHYSICAL PROPERTIES COMPOSITE SLAB

(PER METRE WIDTH)
Composite Moment of Inertia, I_c (mm⁴ x 10³)
Effective Depth, d (mm)

Base Steel Nominal Thickness (mm)	Span (mm)	1			2			3			1			2			3		
		Span	Span	Span	Span	Span	Span	Span	Span	Span	Span	Span	Span	Span	Span	Span	Span	Span	
0.76	2600	14.5	14.5	14.5	16.0	16.0	16.0	18.2	18.2	18.2	19.7	19.7	19.7						
	2800	12.7	12.7	12.7	14.0	14.0	14.0		16.0	16.0		17.3	17.3						
	3000		11.3	11.3			12.4	12.4					14.2						
	3200			10.1															
0.91	2600	15.9	15.9	15.9	17.6	17.6	17.6	20.0	20.0	20.0	20.0	20.0	20.0						
	2800	14.0	14.0	14.0	15.4	15.4	15.4	17.5	17.5	17.5	19.0	19.0	19.0						
	3000	12.4	12.4	12.4	13.6	13.6	13.6	15.5	15.5	15.5	16.8	16.8	16.8						
	3200	11.0	11.0	11.0	12.2	12.2	12.2		13.9	13.9		15.0	15.0						
	3400	9.9	9.9	9.9		10.9	10.9					12.5							
1.22	3000	14.6	14.6	14.6	16.1	16.1	16.1	18.3	18.3	18.3	19.8	19.8	19.8						
	3200	13.0	13.0	13.0	14.3	14.3	14.3	16.3	16.3	16.3	17.6	17.6	17.6						
	3400	11.7	11.7	11.7	12.9	12.9	12.9	14.7	14.7	14.7	15.9	15.9	15.9						
	3600	10.6	10.6	10.6	11.7	11.7	11.7	13.3	13.3	13.3	14.4	14.4	14.4						
	3800	9.6	9.6	9.6	10.6	10.6	10.6		12.1	12.1		13.1	13.1						
	4200		8.1	8.1			8.9												
1.52	4400			7.5															
	3400	13.4	13.4	13.4	14.7	14.7	14.7	16.8	16.8	16.8	18.2	18.2	18.2						
	3600	12.1	12.1	12.1	13.3	13.3	13.3	15.2	15.2	15.2	16.4	16.4	16.4						
	3800	11.0	11.0	11.0	12.1	12.1	12.1	13.8	13.8	13.8	14.9	14.9	14.9						
	4000	10.1	10.1	10.1	11.1	11.1	11.1		12.6	12.6		13.7	13.7						
	4200	9.2	9.2	9.2		10.2	10.2			11.6	11.6		12.5	12.5					
	4400		8.5	8.5		9.4	9.4			10.7	10.7								
4600		7.9	7.9			8.7													

LOAD TABLE

Maximum Specified Uniformly Distributed Load in kN/m² (kPa)

Shear Bond Coefficients
k₁ = 155.0061
k₂ = 90.2766
k₃ = 0.0305
k₄ = 0.0691

Continued on back

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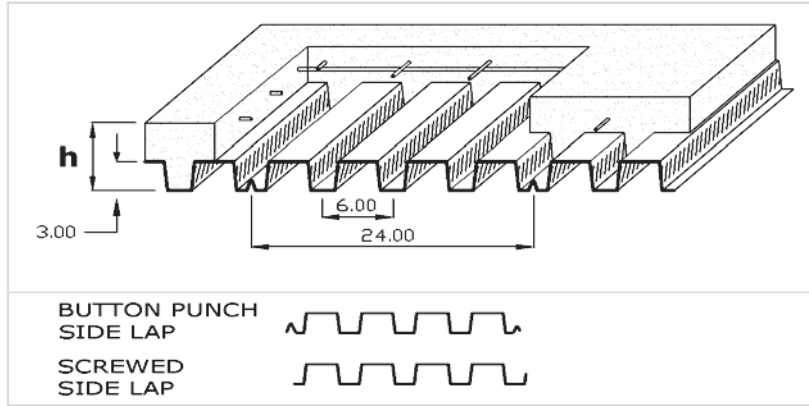
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HI-BOND
COMPOSITE FLOOR

HB306
ZF75 GALVANNEAL



IMPERIAL

LIMIT STATES DESIGN

PHYSICAL PROPERTIES STEEL PROFILE

	NOMINAL CORE THICKNESS (inches)	AREA OF STEEL (inches ²)	MASS WITH ZF75 GALVANNEAL (lb/ft ²)	SECTION MODULUS		Moment of Inertia		DEPTH FROM NEUTRAL AXIS TO BOTTOM OF DECK Y _b (inches)	MAXIMUM FACTORED REACTIONS	
				MIDSPAN S _m (inches ³)	SUPPORT S _s (inches ³)	MIDSPAN I _m (inches ⁴)	FULL I _f (inches ⁴)		EXTERIOR (pounds)	INTERIOR (pounds)
(PER FOOT WIDTH)	.030	0.675	2.384	0.4825	0.4961	0.8691	0.9591	1.686	932	1473
In accordance with CSA Specification S136-07	.036	0.811	2.855	0.6214	0.6289	1.0899	1.1514	1.691	1302	2063
	.048	1.079	3.774	0.8634	0.9001	1.5170	1.5296	1.700	2200	3474
	.060	1.349	4.717	1.0985	1.1179	1.9101	1.9101	1.709	3303	5235

PHYSICAL PROPERTIES COMPOSITE SLAB

	SLAB THICKNESS h (inches)	5.50		6.00		6.50		7.00	
	Slab Weight, W ₁ (lb/ft ²)	47.9		54.0		60.0		66.1	
Concrete Volume, (cu yd/100 ft ²)	1.133			1.287		1.441		1.595	
(PER FOOT WIDTH) Composite Moment of Inertia, I _c (inches ⁴)	Base Steel Nominal Thickness (inches)	I _c	d	I _c	d	I _c	d	I _c	d
		.030	9.8324	3.814	12.6602	4.314	16.0035	4.814	19.9067
	.036	10.4972	3.809	13.5056	4.309	17.0599	4.809	21.2053	5.309
	.048	11.6945	3.800	15.0272	4.300	18.9635	4.800	23.5495	5.300
	.060	12.7817	3.791	16.4068	4.291	20.6902	4.791	25.6793	5.291

LOAD TABLE

	Base Steel Nominal Thickness (inches)	Span (inches)	1			2			3			1			2			3		
			Span	Span	Span	Span	Span	Span	Span	Span	Span	Span	Span	Span	Span	Span	Span	Span	Span	
Maximum Specified Uniformly Distributed Load in lb/ft ² (psf)	.030	8'-6"	302	302	302	341	341	341	381	381	381	400	400	400						
		9'-0"	273	273	273	308	308	308		344	344			380	380					
		9'-6"	248	248	248			280	280		313	313								345
		10'-0"			227	227			256											
	.036	9'-6"	272	272	272	308	308	308	343	343	343	379	379	379						
		10'-0"	248	248	248	281	281	281	314	314	314			346	346					
		10'-6"	228	228	228	258	258	258		288	288									318
		11'-0"	210	210	210			238	238			265								
	.048	11'-6"			195	195			220											
		12'-0"				181														
		10'-6"	268	268	268	303	303	303	338	338	338	373	373	373						
		11'-0"	247	247	247	279	279	279	312	312	312	344	344	344						
11'-6"		228	228	228	258	258	258	288	288	288	318	318	318							
12'-0"		212	212	212	240	240	240	268	268	268			295	295						
.060	12'-6"	197	197	197	223	223	223		249	249									275	
	13'-0"			184	184			209	209											
	13'-6"			173	173			195	195											
	14'-0"				162															
	11'-0"	283	283	283	320	320	320	357	357	357	395	395	395							
	11'-6"	261	261	261	296	296	296	330	330	330	365	365	365							
.060	12'-0"	243	243	243	275	275	275	307	307	307	339	339	339							
	12'-6"	226	226	226	256	256	256	285	285	285	315	315	315							
	13'-0"	211	211	211	239	239	239		267	267			294	294						
	13'-6"	198	198	198			224	224		250	250			276	276					
	14'-0"			185	185			210	210			234	234						259	

Note

Continued from front

- No additional reinforcing steel is required for the slab thicknesses shown on this table. For temperature reinforcing (crack-control) steel, see the VICWEST Hi-Bond Composite Floor Designer's Manual.
- Hi-Bond composite load capacities are dependant on the material finish of the steel. VICWEST publishes load tables for ZF75 Galvanneal steel and Z275 Galvanized steel. For other finishes contact your local VICWEST office.
- Loads for the deck acting as a Form include Slab Weight, W₁ and a construction load of 1.0 kN/m² (21 psf) Uniformly Distributed Live Load OR 2.0 kN/m (137 lb/ft) Transverse Live Load.
- Load Table values allow for slab self weight.

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