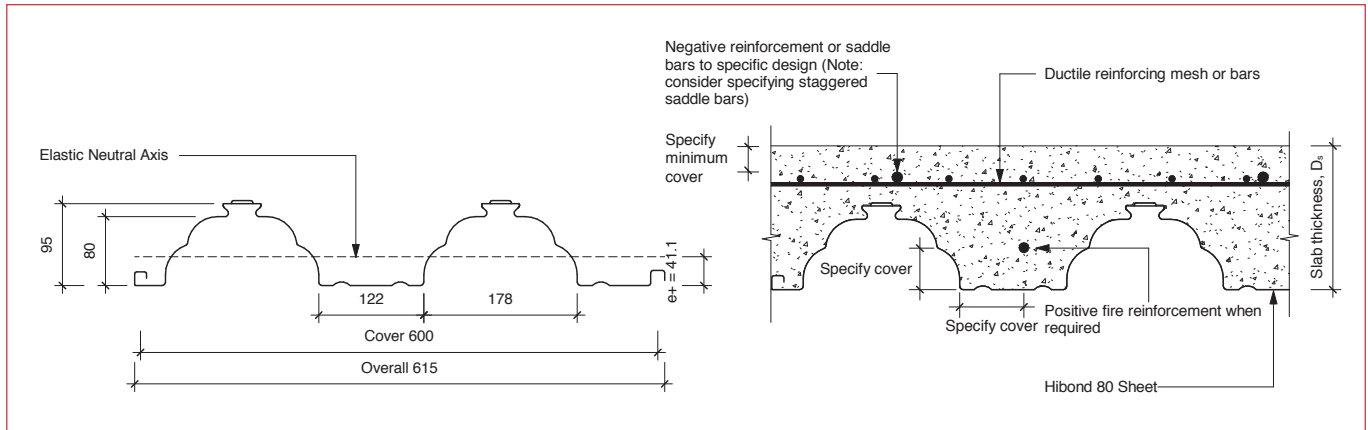


## HIBOND 80 SECTION PROPERTIES



## FORMWORK PROPERTIES

Hibond 80 Formwork Reliable Design Properties (per metre width unless noted otherwise)

Hibond 80 Thickness	0.75mm	0.95mm	1.05mm	1.15mm
Design Strength, $f_y$ (MPa)	550	550	500	500
Base metal thickness (mm)	0.75	0.95	1.05	1.15
Self weight (kN/m <sup>2</sup> )	0.093	0.117	0.129	0.141
$M_{c,Rd+}$ (kN/m)	10.34	15.85	18.31	21.22
$M_{c,Rd-}$ (kN/m)	8.03	11.81	13.72	15.75
$I_{a+}$ ( $10^6$ mm <sup>4</sup> /m)	1.085	1.166	1.178	1.414
$I_{a-}$ ( $10^6$ mm <sup>4</sup> /m)	0.910	1.091	1.256	1.527
Elastic Neutral Axis, $e+$ (mm)	41.1	41.1	41.1	41.1
$R_{w,Rd}$ (kN/m)	14.96	20.20	28.33	36.46

### Notes

- Design Values determined according to EN1990, Annex D.8 to account for material, profile shape and test result variations.
- $M_{c,Rd+}$  and  $M_{c,Rd-}$  are bending moments due to positive and negative bending respectively.
- $I_{a+}$  and  $I_{a-}$  are second moments of area for positive and negative sense respectively.
- $R_{w,Rd}$  is web crushing resistance for an effective end bearing of 50mm.

## COMPOSITE FLOOR SLAB PROPERTIES

0.75mm Hibond 80 Composite Floor Slab Properties (Per Metre Width)

$D_s$ (mm)	Weight (kN/m)	$I_g$ ( $10^6$ mm <sup>4</sup> )		$Y_g$ (mm)		$I_{cr}$ ( $10^6$ mm <sup>4</sup> )		$Y_{cr}$ (mm)		$I_{av}$ ( $10^6$ mm <sup>4</sup> )	
		medium	long	medium	long	medium	long	medium	long	medium	long
150	2.63	12.9	9.2	65.5	68.6	11.8	7.8	45.4	51.9	12.3	8.5
160	2.86	15.7	11.1	70.2	73.4	13.5	9.2	49.9	56.2	14.6	10.1
170	3.09	18.8	13.2	74.9	78.2	15.5	10.8	54.5	60.7	17.2	12.0
180	3.32	22.5	15.7	79.6	83.0	17.6	12.5	59.2	65.3	20.1	14.1
190	3.55	26.8	18.4	84.4	87.9	19.9	14.3	63.9	69.9	23.3	16.4
200	3.78	31.6	21.6	89.2	92.7	22.3	16.3	68.7	74.6	27.0	18.9
210	4.01	37.1	25.1	94.0	97.6	25.0	18.5	73.5	79.3	31.0	21.8
220	4.24	43.3	29.0	98.8	102.5	27.8	20.9	78.3	84.1	35.5	25.0
230	4.47	50.2	33.4	103.7	107.4	30.8	23.4	83.1	88.8	40.5	28.4

### 0.95mm Hibond 80 Composite Floor Slab Properties (Per Metre Width)

D <sub>s</sub> (mm)	Weight (kN/m)	I <sub>g</sub> (10 <sup>6</sup> mm <sup>4</sup> )		Y <sub>g</sub> (mm)		I <sub>cr</sub> (10 <sup>6</sup> mm <sup>4</sup> )		Y <sub>cr</sub> (mm)		I <sub>av</sub> (10 <sup>6</sup> mm <sup>4</sup> )	
		medium	long	medium	long	medium	long	medium	long	medium	long
150	2.65	14.2	10.3	66.6	70.2	13.7	9.1	47.7	55.2	13.9	9.7
160	2.88	17.1	12.4	71.3	75.1	15.8	10.7	52.2	59.5	16.4	11.5
170	3.11	20.6	14.7	76.0	80.0	18.1	12.5	56.7	64.0	19.3	13.6
180	3.34	24.5	17.4	80.8	84.9	20.6	14.5	61.3	68.5	22.5	15.9
190	3.57	29.0	20.4	85.6	89.8	23.3	16.7	66.0	73.1	26.1	18.5
200	3.81	34.1	23.8	90.4	94.7	26.2	19.1	70.7	77.8	30.2	21.4
210	4.04	39.9	27.6	95.2	99.6	29.4	21.7	75.5	82.5	34.6	24.6
220	4.27	46.4	31.8	100.1	104.6	32.8	24.5	80.3	87.2	39.6	28.1
230	4.50	53.6	36.5	105.0	109.5	36.4	27.5	85.1	92.0	45.0	32.0

### 1.05mm Hibond 80 Composite Floor Slab Properties (Per Metre Width)

D <sub>s</sub> (mm)	Weight (kN/m)	I <sub>g</sub> (10 <sup>6</sup> mm <sup>4</sup> )		Y <sub>g</sub> (mm)		I <sub>cr</sub> (10 <sup>6</sup> mm <sup>4</sup> )		Y <sub>cr</sub> (mm)		I <sub>av</sub> (10 <sup>6</sup> mm <sup>4</sup> )	
		medium	long	medium	long	medium	long	medium	long	medium	long
150	2.66	14.8	10.9	67.1	71.0	14.5	9.7	48.8	56.7	14.7	10.3
160	2.90	17.9	13.0	71.8	75.9	16.8	11.4	53.2	61.0	17.3	12.2
170	3.13	21.4	15.4	76.6	80.8	19.3	13.3	57.8	65.5	20.3	14.4
180	3.36	25.4	18.2	81.4	85.7	22.0	15.5	62.3	70.0	23.7	16.8
190	3.59	30.0	21.3	86.2	90.7	24.9	17.8	67.0	74.6	27.5	19.6
200	3.82	35.3	24.8	91.0	95.6	28.0	20.3	71.7	79.3	31.7	22.6
210	4.05	41.2	28.8	95.9	100.6	31.4	23.1	76.5	84.0	36.3	25.9
220	4.28	47.9	33.1	100.7	105.5	35.1	26.1	81.3	88.7	41.5	29.6
230	4.51	55.3	38.0	105.6	110.5	39.0	29.3	86.1	93.5	47.1	33.6

### 1.15mm Hibond 80 Composite Floor Slab Properties (Per Metre Width)

D <sub>s</sub> (mm)	Weight (kN/m)	I <sub>g</sub> (10 <sup>6</sup> mm <sup>4</sup> )		Y <sub>g</sub> (mm)		I <sub>cr</sub> (10 <sup>6</sup> mm <sup>4</sup> )		Y <sub>cr</sub> (mm)		I <sub>av</sub> (10 <sup>6</sup> mm <sup>4</sup> )	
		medium	long	medium	long	medium	long	medium	long	medium	long
150	2.68	15.4	11.4	67.6	71.7	15.4	10.2	49.9	58.1	15.4	10.8
160	2.91	18.6	13.6	72.3	76.7	17.8	12.1	54.3	62.4	18.2	12.8
170	3.14	22.2	16.1	77.1	81.6	20.4	14.1	58.8	66.9	21.3	15.1
180	3.37	26.4	19.0	81.9	86.6	23.3	16.3	63.3	71.4	24.8	17.7
190	3.60	31.1	22.2	86.7	91.6	26.4	18.8	68.0	76.1	28.7	20.5
200	3.83	36.5	25.9	91.6	96.5	29.8	21.5	72.7	80.7	33.1	23.7
210	4.06	42.5	29.9	96.5	101.5	33.4	24.5	77.4	85.4	38.0	27.2
220	4.29	49.3	34.4	101.3	106.5	37.3	27.7	82.2	90.2	43.3	31.0
230	4.52	56.9	39.4	106.2	111.5	41.5	31.1	87.0	94.9	49.2	35.2

#### Notes

- D<sub>s</sub> is the overall thickness of the composite floor slab.
- Composite floor slab weights are based on a dry concrete density of 2350kg/m<sup>3</sup> with no allowance for ponding.
- Section properties are presented in terms of equivalent steel units as follows:
  - Medium term superimposed loads are based on 2/3 short term and 1/3 long term load (i.e. modular ratio = 10) and apply to buildings of normal usage.
  - Long term superimposed loads are based on all loads being long term (i.e. modular ratio = 18) and apply to storage loads and loads which are permanent in nature.
- I<sub>g</sub> is the second moment of area of the Hibond 80 composite floor slab for the gross section.
- I<sub>cr</sub> is the second moment of area of the Hibond 80 composite floor slab for the cracked section.
- I<sub>av</sub> is the average value of gross (I<sub>g</sub>) and cracked (I<sub>cr</sub>) sections to be used for deflection calculations.
- Y<sub>g</sub> is the distance from top of composite floor slab to neutral axis of the Hibond 80 composite floor slab for the gross section.
- Y<sub>cr</sub> is the distance from top of composite floor slab to neutral axis of the Hibond 80 composite floor slab for the cracked section.