

3.2 PERFORMANCE

3.2.1 GENERAL DESIGN

Dimond Flooring Systems may be used as formwork only or in composite slab applications. Where used as formwork only, the contribution of the steel sheet to the tensile strength of the slab is ignored and tensile reinforcement is provided by additional reinforcing bars placed in the concrete. Where used as a composite slab, the tensile reinforcement is provided by the steel sheet itself.

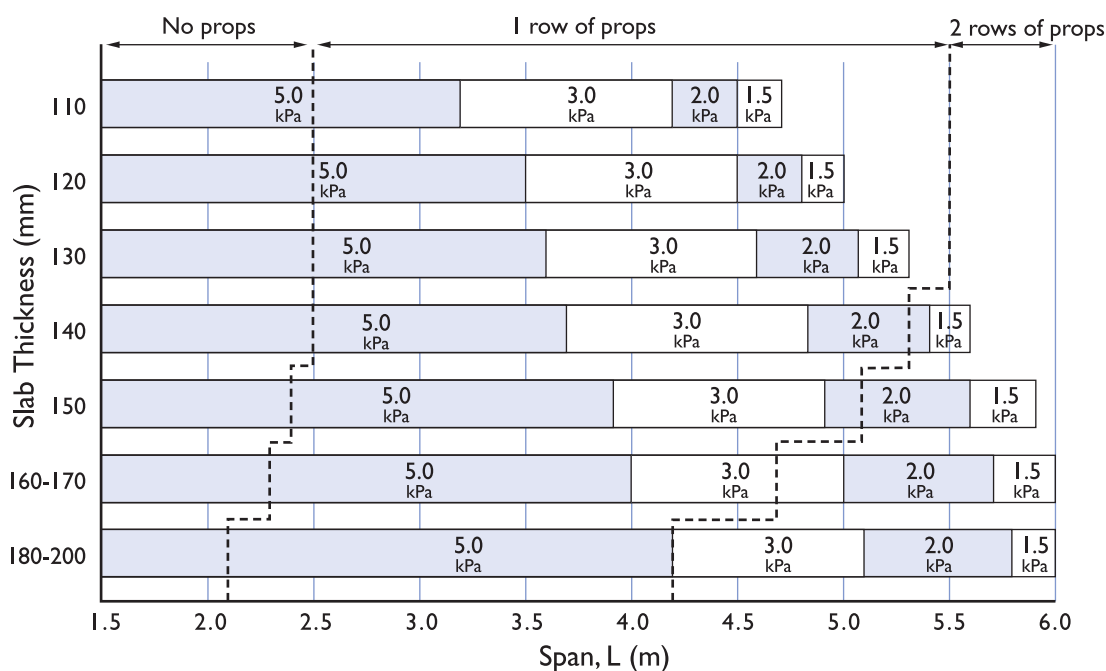
The following charts and tables are based on typical product use and are intended as a quick reference guide only. These must not be used for design purposes or as a substitute for specific design (refer to Sections 3.3 Specific Design – Hibond Flooring and 3.4 Specific Design – Flatdeck Flooring).

There may be specific cases in this section where the spans indicated on the guides will not be achievable, for example no allowance has been made for fire design, acoustics or vibration sensitivity.

3.2.2 HIBOND QUICK REFERENCE GUIDE

1. Values shown are based on 0.75mm Hibond used in single span configuration for the medium term loading condition.
2. The imposed loads (Q) shown in kPa allow for an additional 0.5 kPa as superimposed dead load (SDL) on loads up to 3.0 kPa and 1.0 kPa SDL for Q = 5.0 kPa. Long term loads have been assumed. Span, L (m) shown indicates clear span + 100mm.
3. It is important to place the stated number of temporary propping lines for the selected span prior to Hibond being laid. These span limits should be reduced where minimal soffit deflection is important.
4. Deflection limits used within this table are:
 Formwork: L/180 due to dead load or (slab thickness)/10 to avoid concrete ponding problems.
 Composite Slab: L/350 or 20mm due to superimposed load (where unpropped) or L/250 due to superimposed load plus prop removal.

The user should satisfy themselves that these limits are adequate for the application considered.



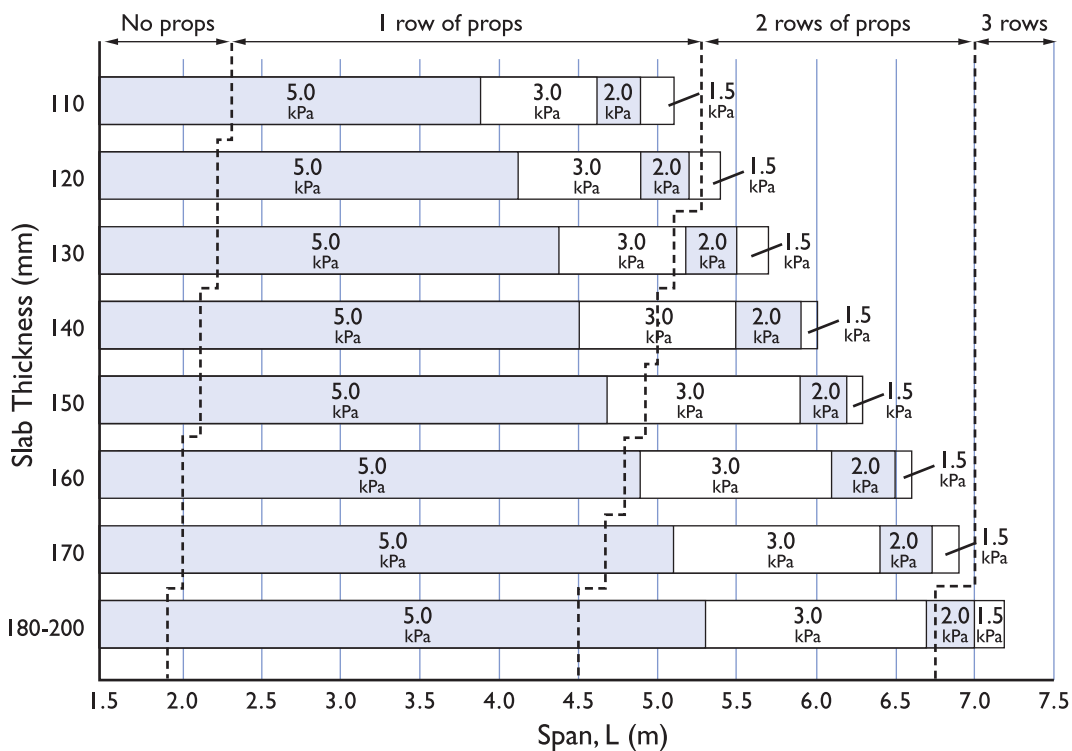
- Loading Key:**
- 5.0 kPa Office storage, plant rooms and workshops
 - 3.0 kPa Offices for general use
 - 2.0 kPa Balconies in residential self-contained dwellings
 - 1.5 kPa Residential self-contained dwellings.

3.2 PERFORMANCE *continued*

3.2.3 FLATDECK QUICK REFERENCE GUIDE

1. Values shown are based on 0.75mm Flatdeck used in single span configuration for the medium term loading condition.
2. The imposed loads (Q) shown in kPa allow for an additional 0.5 kPa as superimposed dead load (SDL) on loads up to 3.0 kPa and 1.0 kPa SDL for Q = 5.0 kPa. Long term loads have been assumed. Span, L (m) shown indicates clear span + 100mm.
3. It is important to place the stated number of temporary propping lines for the selected span prior to Flatdeck being laid. These span limits should be reduced where minimal soffit deflection is important.
4. Deflection limits used within this table are:
 Formwork: L/180 due to dead load.
 Composite Slab: L/350 or 20mm due to superimposed load (where unpropped) or L/250 due to superimposed load plus prop removal.

The user should satisfy themselves that these limits are adequate for the application considered.



- Loading Key:**
- 5.0 kPa Office storage, plant rooms and workshops
 - 3.0 kPa Offices for general use
 - 2.0 kPa Balconies in residential self-contained dwellings
 - 1.5 kPa Residential self-contained dwellings.

3.2.4 HIBOND AND FLATDECK NOISE CONTROL FLOOR/CEILING SYSTEMS SUMMARY

System Reference Code	STC	Description of System	Floor Covering Option	IIC
G General	42	0.75 or 0.95mm Hibond or Flatdeck. Acoustic performance is based on 120mm overall concrete slab thickness.	Bare slab	23
			15mm strip timber on Bostic Ultraset adhesive	40
			6mm cork flooring	42
			Gerffloor Taralay Comfort Vinyl 3.1mm thick	43
			15mm strip timber on 1mm polyethylene foam	44
			Carpet, nylon or wool 40oz without underlay	66
			Carpet, wool 60oz without underlay	67
			Wool or nylon carpet plus 8mm foam underlay	71
SDL Separate Dwelling Living Zone	54	0.75 or 0.95mm Hibond or Flatdeck with 120mm overall slab thickness. USG furring channel at 600mm centres supported by Potters sound isolation clips. 1 x layer of 13mm GIB [®] standard plasterboard.	Bare slab	39
			15mm strip timber on Bostic Ultraset adhesive	46
			6mm cork flooring	47
			Gerffloor Taralay Comfort Vinyl 3.1mm thick	49
			15mm strip timber on 1mm polyethylene foam	47
			Carpet, nylon or wool 40oz without underlay	60
			Carpet, wool 60oz without underlay	62
			Wool or nylon carpet plus 8mm foam underlay	66
MDLa Multi-Unit Dwelling Living Zone Alternative a	61	0.75 or 0.95mm Hibond or Flatdeck with 120mm overall slab thickness. 75mm thick R1.8 Pink Batts insulation blanket (density 9 kg/m ³ min). USG furring channel at 600mm centres supported by Potters sound isolation clips. 1 x layer of 13mm GIB [®] standard plasterboard.	Bare slab	42
			15mm strip timber on Bostic Ultraset adhesive	54
			6mm cork flooring	56
			Gerffloor Taralay Comfort Vinyl 3.1mm thick	56
			15mm strip timber on 1mm polyethylene foam	57
			Carpet, nylon or wool 40oz without underlay	67
			Carpet, wool 60oz without underlay	69
			Wool or nylon carpet plus 8mm foam underlay	73
MDLb Multi-Unit Dwelling Living Zone Alternative b	59	0.75 or 0.95mm Hibond or Flatdeck with 120mm overall slab thickness. USG Donn Screwfix suspended ceiling system and furring channel at 600mm centres suspended by wire, supported by either the Dimond hanger tab (for Hibond only) or a masonry suspension anchor for both Hibond and Flatdeck. 1 x layer of 13mm GIB [®] standard plasterboard.	Bare slab	35
			Ceramic tile on Bostic Ultraset adhesive	51
			15mm strip timber on Bostic Ultraset adhesive	50
			6mm cork flooring	53
			Gerffloor Taralay Comfort Vinyl 3.1mm thick	52
			Carpet, nylon or wool 40oz without underlay	63
			Carpet, wool 60oz without underlay	65
			Wool or nylon carpet plus 8mm foam underlay	69
MDS Multi-Unit Dwelling Service Zone	61	0.75 or 0.95mm Hibond or Flatdeck with 120mm overall slab thickness. 75mm thick R1.8 Pink Batts insulation blanket (density 9 kg/m ³ min). USG Donn Screwfix suspended ceiling system and furring channel at 600mm centres suspended by wire, supported by either the Dimond hanger tab (for Hibond only) or a masonry suspension anchor for both Hibond and Flatdeck. 1 x layer of 13mm GIB [®] standard plasterboard.	Bare slab	43
			Ceramic tile on Bostic Ultraset adhesive	55
			15mm strip timber on Bostic Ultraset adhesive	62
			6mm cork flooring	64
			Gerffloor Taralay Comfort Vinyl 3.1mm thick	66
			Carpet, nylon or wool 40oz without underlay	75+
			Carpet, wool 60oz without underlay	75+
			Wool or nylon carpet plus 8mm foam underlay	75+

Note

- Shaded areas above show values of Sound Transmission Class (STC) and Impact Insulation Class (IIC) of 55dB or above.
- For full system description and construction detailing reference must be made to the specification sheets in Section 3.3.7.
- Call Dimond on 0800 Roofspec (0800 766 377) for the sound insulation performance when the slab is greater than 120mm thick.

3.2.5 COST COMPARISON OF DIMOND FLOORING SYSTEMS

As a guide for cost comparison purposes the following table has been calculated for Hibond and Flatdeck composite flooring for various formwork base metal thickness (BMT) and slab thickness.

DIMOND FLOORING	Unit	Auck \$	Wgtn \$	Chch \$	Dun \$
0.75mm BMT Hibond composite flooring system,					
110mm thick	m ²	98.00	97.00	94.00	97.00
150mm thick	m ²	107.00	106.00	102.00	106.00
200mm thick	m ²	125.00	123.00	117.00	123.00
0.95mm BMT Hibond composite flooring system,					
110mm thick	m ²	103.00	102.00	100.00	102.00
150mm thick	m ²	113.00	112.00	108.00	112.00
200mm thick	m ²	130.00	128.00	123.00	128.00
0.75mm BMT Flatdeck composite flooring system,					
110mm thick	m ²	102.00	101.00	98.00	101.00
150mm thick	m ²	112.00	110.00	106.00	110.00
200mm thick	m ²	129.00	127.00	121.00	127.00
0.95mm BMT Flatdeck composite flooring system,					
110mm thick	m ²	108.00	107.00	103.00	107.00
150mm thick	m ²	117.00	116.00	111.00	116.00
200mm thick	m ²	135.00	133.00	126.00	133.00

Costs for Hibond and Flatdeck include:

- Propping, placed and stripped
- Dimond steel flooring and accessories, installed inclusive of shear studs
- Edge formwork, installed
- Mesh reinforcing
- 25 MPa concrete, pumped and placed