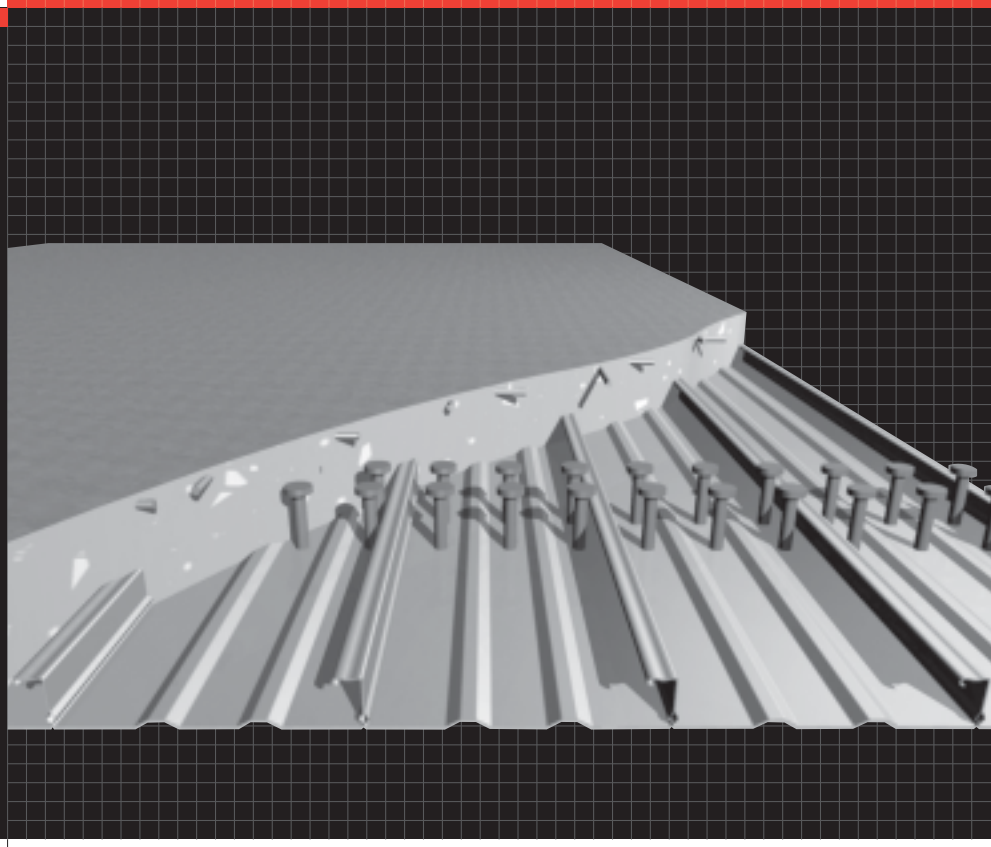
Stramit Building Products

Technical Supplement

Stramit Condeck HP® composite decking

INSTALLATION AND TEMPORARY PROPPING



This guide to installing and propping ***Stramit Condeck HP®*** Composite Decking is designed for use on-site by formworkers and steel fixers. For full engineering data, refer to the ***Stramit Condeck HP®*** Composite Decking Technical Manual.

The ***Stramit Condeck HP®*** composite slab system includes:

Stramit Condeck HP® decking (0.75mm, 0.90mm and 1.00mm BMT)
Stramit Condeck HP Plus™ end span accessory (1.00mm BMT)
Stramit Edgeforma™ slab edging (1.00mm and 1.60mm BMT)
Stramit® Ceiling Hanger (two-piece bracket and suspension rod)

Benefits for formworkers

- Easy to carry in long lengths
- No need for side lap fasteners
- No filler strips required for exposed applications
- No voids to tape
- End span accessory for longer unpropped end spans
- Hanger facility for suspended ceilings and services

Handling and storage

To ensure delivery of product undamaged, suitable arrangements should be made for unloading.

When lifting product by crane, care must be taken to ensure the load is spread evenly. If a crane is not available, sufficient labour must be supplied to assist with manual unloading.

Sheet weight per metre

BMT (mm)	Weight (kg/m)
0.75	3.1
0.90	3.7
1.00	4.1

Site Storage

Sheets should be laid as soon as possible after delivery. If site storage is necessary, packs should be kept dry and above ground. If sheets do become wet, separate them, wipe and place in the open to dry.

Installation

Good Practice

Stramit recommends that good trade practice be followed when using these products, such as found in CCAA/Standards Australia handbook HB67 'Concrete practice on building sites'.

Supports

It is imperative that permanent supports (steel or concrete beams, or walls) be stable and of adequate strength to withstand loadings prior to the placement of the decking. Ensure that the end bearing width (min 50mm) and internal bearing width (min 100mm) nominated by the engineer is achieved on site.

In the case of masonry walls, a damp-course strip should be installed between the masonry and the decking.

Temporary Propping

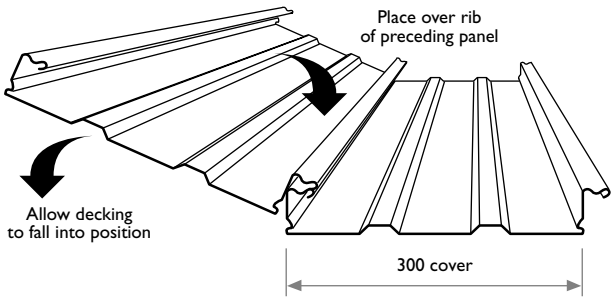
Temporary propping, where required, must provide continuous transverse (across the sheet) support at the prescribed spacings. The prop bearer width must be no less than 100mm, unless established by calculation.

Continuous support is generally provided by substantial timber or steel beams supported by vertical props. If the deck soffit is to be left exposed, it is recommended that a piece of caneite or similar be placed between the bearer and the deck. All propping should meet the requirements of AS3610, including bracing. Prop bearers should not be placed higher than the permanent end support.

Propping tables for a range of typical circumstances are provided later in this supplement.

Sheet Placement

Stramit Condeck HP® decking is easily placed by hinging the overlap edge of one sheet over the underlap edge of the previous sheet. If the decking is used as a platform for laying subsequent sheets, designated propping must be positioned first.



Walking On The Deck

Take care when walking on ***Stramit Condeck HP***® decking, particularly if the surface has become wet. Wear suitable rubber-soled footwear at all times. Also note that, when first delivered, there may be traces of rolling oil present. It is possible to step either in the pans or on the ribs of ***Stramit Condeck HP***® decking but when walking use only the pans. Avoid walking on the edge sheet, or on rib ends.

Cutting

Stramit Condeck HP® decking is supplied cut to length. Generally, cutting is only required around projections and cut-outs. Use a power saw fitted with an abrasive disc or metal cutting blade.

Cuts should be started with the decking laid upside down (ribs down). If necessary, turn the sheet and complete the cutting of the ribs. This method provides the neatest finish and minimises the risk of burred edges being exposed on the finished slab.

Fixing

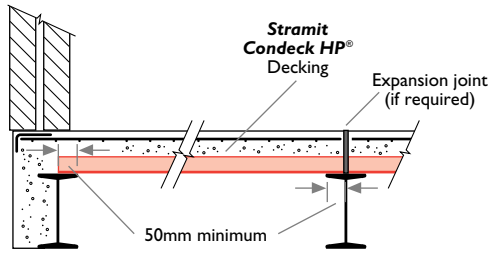
Once decking panels are laid they should immediately be secured against possible wind uplift. Typically use one fixing per pan at end supports, and one fixing every third pan at permanent internal supports. Self-drilling and tapping screws or 4.5mm powder actuated drive pins are commonly used. These fixings should be adjacent to the decking ribs. In exposed conditions additional fixing may be required. Shear studs, if used, attached immediately after decking placement, or puddle welds, will provide wind uplift resistance.

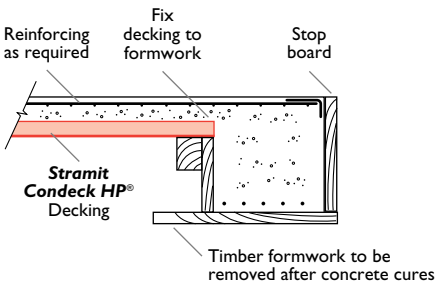
Side-Lap Fasteners

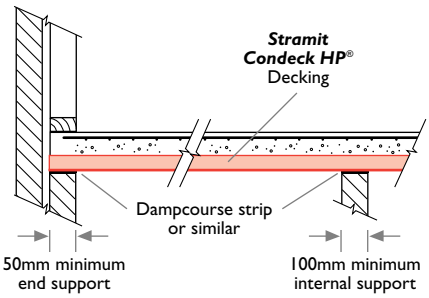
Side-lap fastening is only required if stacked construction materials are to be laid in the decking pans. Where required, side-lap fasteners should be at least No.10x16 self-drilling and tapping screws. These should be fixed through the trough in the rib tops, and positioned at mid span on every rib.

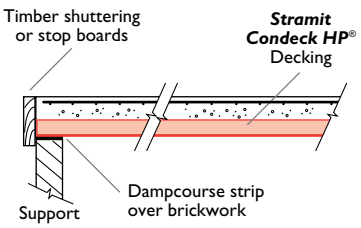
Finishing Slab Edges

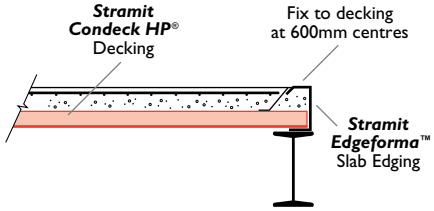
The edge of ***Stramit Condeck HP***® composite slabs can be formed in a variety of ways. The illustrations below show the alternatives:

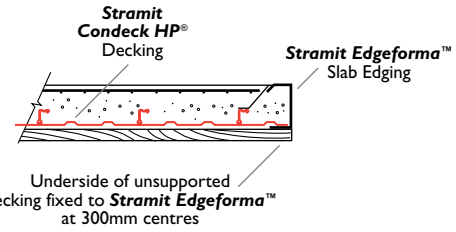


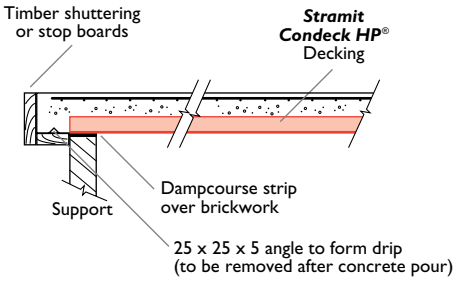










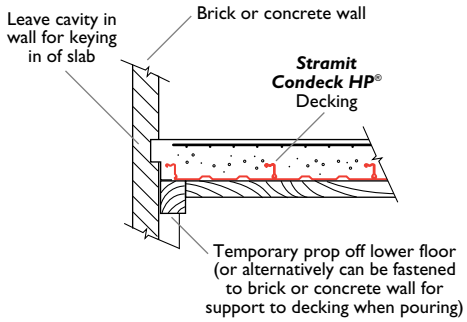


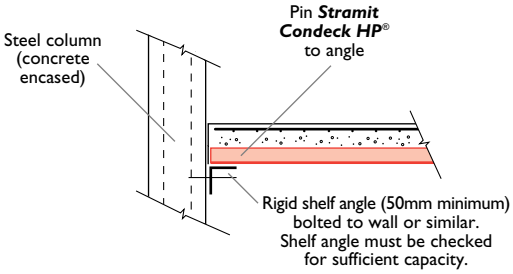
IMPORTANT!

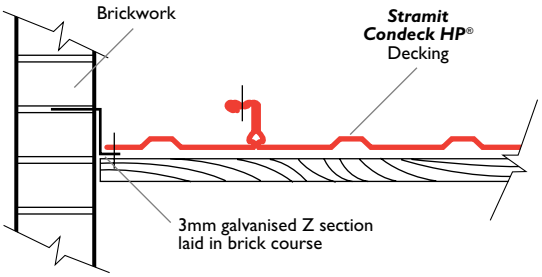
Edges of metal deck slabs exposed to direct or indirect rainfall must have a continuous drip feature to prevent water running to the underside of the decking. This is typically achieved by incorporating a formed notch in an all-concrete edge strip overhanging the supports.

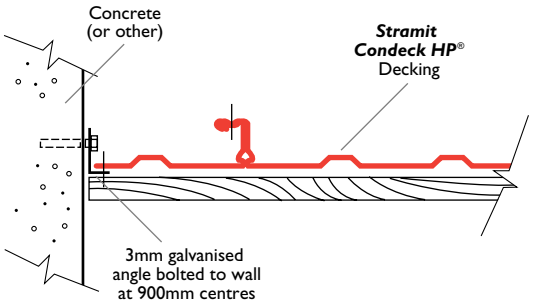
Wall Abutments

The illustrations below show alternative methods of treating slabs adjacent to walls.

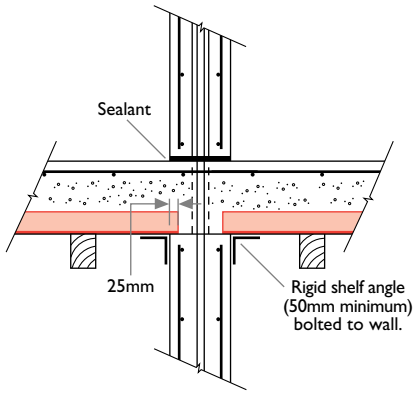








INTERNAL PRE-CAST WALL ABUTMENT

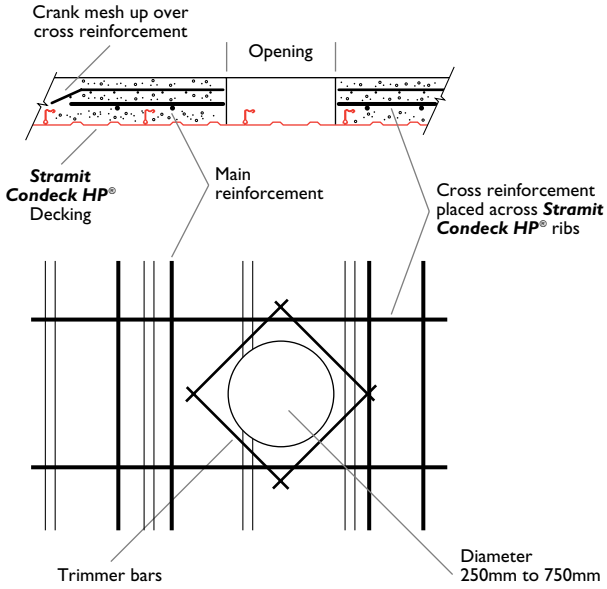


NOTES: 1. Standard end bearing of ***Stramit Condeck HP®*** Decking is 50mm.
2. For 25mm end bearing, end of sheets must be fastened to support.

Large Slab Penetrations

Decking penetrations greater than 200mm must be treated as a cantilever. Floor penetrations can be formed with conventional formwork and the decking cut out after the concrete has set. Penetrations from 200mm to 750mm require cross reinforcement and trimmer bars, as shown. For larger penetrations, such as for stairs and elevators, additional structural framing is required to support the slab.

The cross-sectional area of reinforcement around the opening is equal to the area of deck "lost" in the opening.



Small Slab Penetrations

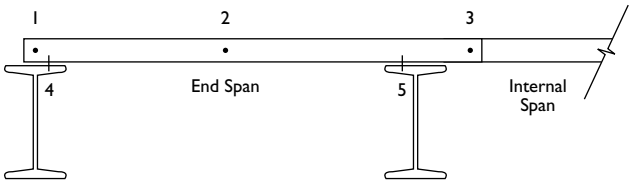
Holes no greater than 200mm diameter may be cut through a ***Stramit Condeck HP®*** composite slab without affecting its performance. However, the following constraints apply:

1. Obtain approval from the design engineer before cutting.
2. Do not cut holes through decking before the concrete pour.
3. Keep holes clear of internal supports.
4. Centre the holes in the pan of the decking.
5. Use appropriate drilling or cutting tools.
6. Avoid other penetrations within 1000mm.

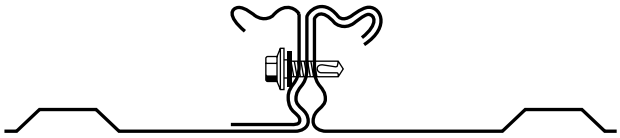
End Span Accessory

The ***Stramit Condeck HP Plus™*** end span accessory can eliminate temporary propping on end spans, providing convenient access beneath the slab for after trades. It is an "extra rib" fastened to the sidelap ribs on the end spans. On continuous slabs, this can reduce or eliminate end span props. For advice on suitable applications and installation, contact Stramit Technical Services.

Stramit Condeck HP Plus™ accessory is generally fixed to every rib in the nominated end span. The accessory runs the full length of the end span, plus an additional 300mm protruding into the adjacent internal span.



The accessory must be attached in three places: at the end support (1), in the middle of the end span (2), and at the internal end (3) (within the adjacent internal span). Fix using at least No10x16 self-drilling and tapping screws, fastened through the rib sides as shown below. The bottom flange of the accessory should also be attached to the support beams (4 & 5).



Stacked Materials

Care must be taken during construction to avoid damage from materials stacked on the deck. Refer to the engineer or the design drawings for stacked material allowances. If in doubt, do not stack materials on the decking.

Sealing

The design of ***Stramit Condeck HP***® decking provides resistance to leakage during concrete pouring. For most applications no sealing is required. At most it is only necessary to tape over the ceiling hanger recess at the bottom of the ribs, and the two pan stiffening rib recesses, at each sheet end.

Mesh Placement

Place the shrinkage and temperature reinforcement (fabric) such that minimum cover requirement as per AS3600 is satisfied (generally 20mm to 30mm cover from top of slab or on top of the deck ribs for thin slabs).

- The fabric shall be properly lapped and tied to ensure continuity in both directions.
- If the slab has been designed as continuous, then additional steel reinforcement as specified by the Engineer shall be provided over supports.

Concrete Pouring

Pour the concrete evenly to the panel ends of the prepared, clean deck, in the direction of the span of the decking. Avoid heaping of wet concrete. As a guide, the slump should be 60mm to 80mm for vibrator compaction. Hand compaction is not recommended.

Concrete Curing

Stramit Condeck HP® composite slabs require the same degree of curing as a conventional reinforced concrete slab. Follow the guidelines within AS3610.

Prop Removal

Temporary propping must not be removed until the slab has cured sufficiently. Prop removal procedure should be in accordance with AS3610.

Adverse Conditions

Stramit Condeck HP® decking has excellent durability. However, in applications close to marine or severe industrial environments, or closer than 450mm to the ground, please contact Stramit for a more detailed assessment of your needs, and for guidance on any precautions that may be required.

Compatibility

Direct contact between galvanised steel and copper, or water run-off from copper onto galvanised steel must be avoided, as premature corrosion will result.

Ordering

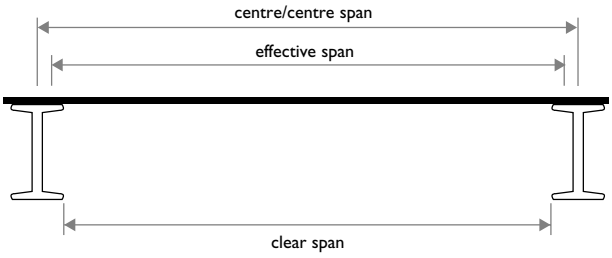
Please have the following information available to ensure speedy processing and delivery of your order:

- Customer name and account number
- Contact name and phone number
- Required BMT and galvanised coating thickness
- Number and length of sheets
- Accessories required (***Stramit Edgeforma***™ slab edging, ***Stramit***® Ceiling Hangers, ***Stramit Condeck HP Plus***™ end span accessory)
- Site conditions
- Delivery date
- Delivery address, lot number and nearest cross street

Stramit Condeck HP® decking can be supplied in any length up to the limit of the local transport authority regulations. Where possible, lengths ordered should be site measurements rather than plan dimensions. Tolerance on lengths supplied is +/- 5mm.

Span Definition

Spans in the tables are effective spans, which are intermediary between centre-to-centre spans and clear spans. In construction phase, the effective span is the lesser of the clear span plus 55mm or centre-to-centre distance. These rules apply only for stiff supports such as I-beams with stiff flanges and concrete beams.



Span tables for temporary props

Calculated for concrete density of 2400 kg/m³, reo mass 50 kg/m³, stacked material load of 1.5kPa in pans, 100mm wide prop bearers and rib deflection limit of span/240. Maximum spans for finished composite slabs must be checked using the ***Stramit Condeck HP®*** *Technical Manual* or the ***Stramit Condeck HP™*** *Slab Designer* software. Props or propping frames must be spaced approximately equally within the span.

— Cases below this line not recommended for exposed ceilings

Table 1

Single Span maximum span (mm)

slab thickness	Stramit Condeck HP® decking thickness		
(mm)	0.75mm	0.90mm	1.00mm
90	2100	2350	2450
100	2040	2280	2380
110	1990	2210	2310
120	1940	2160	2250
125	1920	2130	2220
130	1900	2110	2200
140	1860	2060	2150
150	1820	2020	2100
160	1780	1980	2060
170	1750	1940	2020
180	1720	1900	1990
190	1690	1870	1960
200	1660	1840	1920
210	1610	1810	1890
220	1600	1790	1870
230	1580	1760	1840
240	1560	1740	1820
250	1540	1720	1790

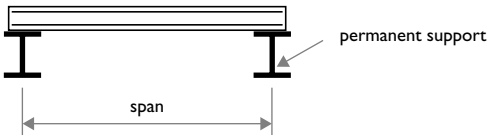


Table 2

Double Spans maximum span (mm)

slab thickness	Stramit Condeck HP® decking thickness		
(mm)	0.75mm	0.90mm	1.00mm
90	2440	2930	3090
100	2370	2840	3000
110	2300	2760	2920
120	2250	2690	2850
125	2220	2660	2820
130	2190	2630	2780
140	2140	2540	2720
150	2100	2460	2670
160	2050	2390	2610
170	1990	2330	2560
180	1940	2270	2470
190	1890	2210	2410
200	1840	2160	2350
210	1790	2110	2300
220	1710	2060	2250
230	1660	2010	2200
240	1620	1970	2150
250	1580	1930	2110

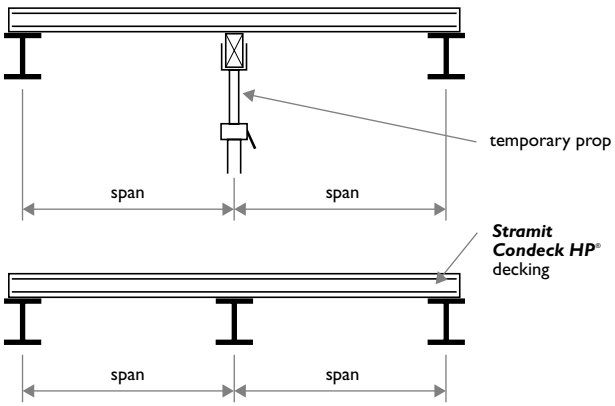


Table 3

Continuous Spans maximum span (mm)

slab thickness	Stramit Condeck HP® decking thickness		
(mm)	0.75mm	0.90mm	1.00mm
90	2450	2680	2830
100	2380	2600	2750
110	2320	2530	2680
120	2260	2470	2610
125	2230	2440	2580
130	2210	2420	2550
140	2160	2360	2500
150	2110	2320	2450
160	2070	2270	2400
170	2030	2230	2360
180	1990	2190	2320
190	1950	2160	2280
200	1900	2120	2250
210	1850	2090	2210
220	1800	2060	2180
230	1760	2030	2150
240	1720	2000	2120
250	1680	1980	2100

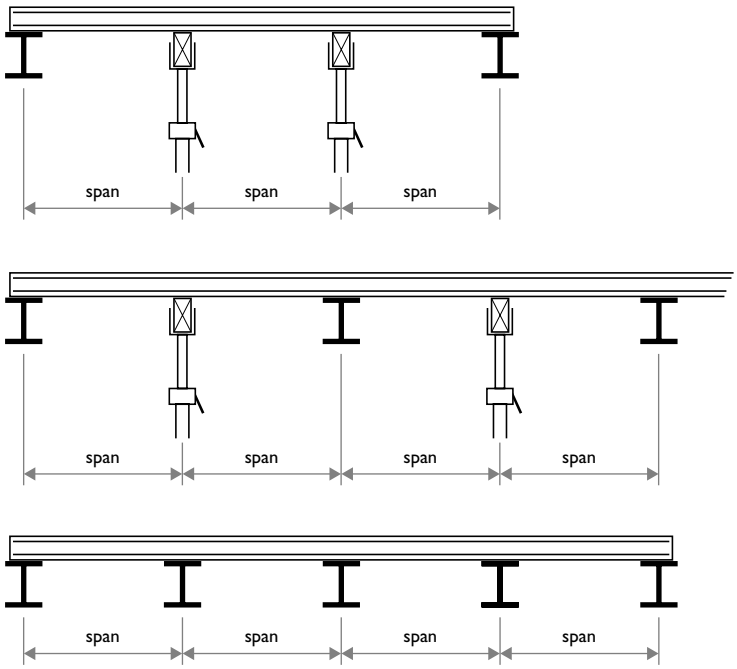
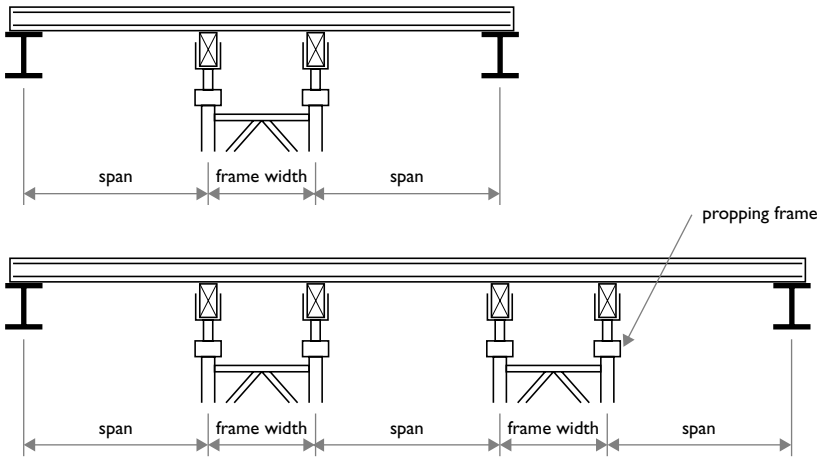


Table 4

Propping Frames maximum span (mm)

slab thickness	Stramit Condeck HP® decking thickness		
(mm)	0.75mm	0.90mm	1.00mm
90	2420	2560	2710
100	2350	2490	2630
110	2290	2420	2560
120	2230	2360	2490
125	2200	2330	2460
130	2170	2300	2440
140	2120	2250	2380
150	2050	2210	2340
160	1910	2160	2290
170	2000	2120	2250
180	1970	2080	2210
190	1930	2050	2170
200	1900	2020	2140
210	1870	1990	2100
220	1810	1920	2070
230	1740	1930	2040
240	1790	1910	2020
250	1740	1880	1990



☐ Frame widths from 1200 up to 2400mm

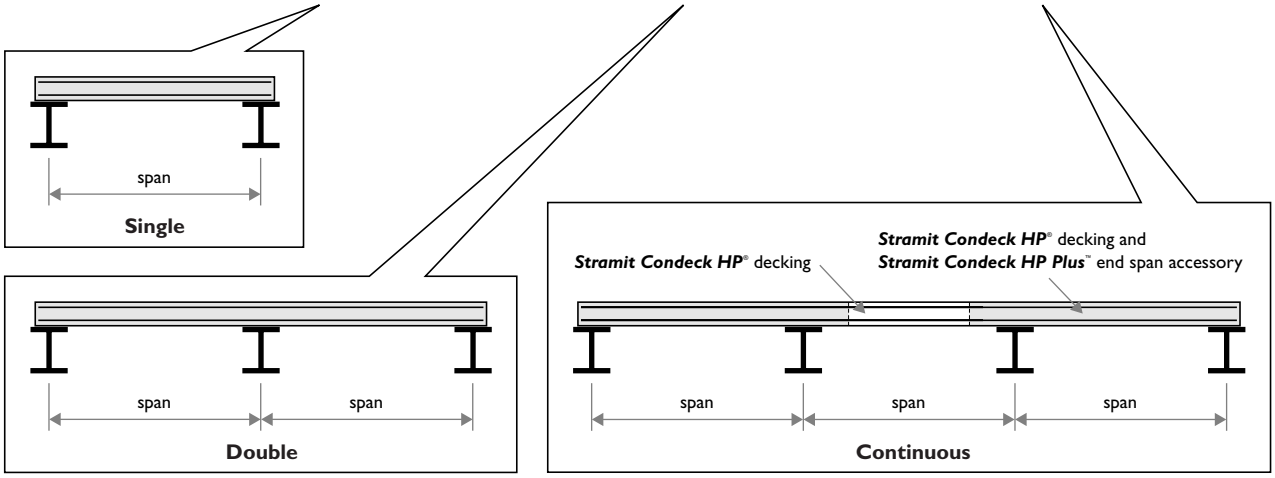
Frame widths from 1200 up to 1800mm

Frame widths from 1200 up to 1500mm

Table 5

Unpropped spans with Stramit Condeck HP Plus™ end span accessory maximum span (mm)

slab thickness	Single span with HP Plus™			Double span with HP Plus™			Continuous span with HP Plus™ in end spans		
	Stramit Condeck HP® decking thickness								
(mm)	0.75mm	0.90mm	1.00mm	0.75mm	0.90mm	1.00mm	0.75mm	0.90mm	1.00mm
90	2380	2510	2590	3040	3170	3310	2770	2890	3020
100	2310	2430	2520	2950	3080	3210	2690	2810	2930
110	2250	2370	2450	2870	3000	3130	2620	2740	2860
120	2190	2310	2390	2800	2920	3050	2560	2670	2790
125	2160	2280	2360	2760	2890	3020	2530	2640	2760
130	2140	2250	2330	2730	2850	2980	2500	2610	2730
140	2090	2200	2280	2670	2790	2920	2450	2560	2670
150	2050	2160	2230	2620	2730	2860	2400	2510	2620
160	2010	2120	2190	2570	2680	2800	2360	2460	2570
170	1970	2080	2150	2520	2630	2750	2310	2420	2530
180	1940	2040	2110	2480	2590	2710	2280	2380	2480
190	1900	2010	2080	2430	2550	2660	2240	2340	2440
200	1870	1970	2050	2400	2510	2620	2200	2300	2410
210	1840	1940	2010	2320	2470	2580	2170	2270	2370
220	1820	1920	1990	2270	2430	2540	2140	2240	2340
230	1790	1890	1960	2220	2400	2510	2110	2210	2310
240	1770	1860	1930	2170	2370	2480	2090	2180	2280
250	1750	1840	1910	2130	2340	2440	2060	2150	2250



Stramit®
Building Products

SYDNEY
33-83 Quarry Road, Erskine Park NSW 2759
Telephone (02) 9834 0900 Facsimile (02) 9834 0988

CANBERRA
4 Bass Street, Queanbeyan NSW 2620
Telephone (02) 6297 3533 Facsimile (02) 6297 8089

COFFS HARBOUR
6 Mansbridge Drive, Coffs Harbour NSW 2450
Telephone (02) 6652 6333 Facsimile (02) 6651 3395

NEWCASTLE
17 Nelson Road, Cardiff NSW 2285
Telephone (02) 4954 5033 Facsimile (02) 4954 5856

ALBURY
18 Ariel Drive, Albury NSW 2640
Telephone (02) 6041 7600 Facsimile (02) 6041 7666

ORANGE
51 Leewood Drive, Orange NSW 2800.
Telephone (02) 6361 0444 Facsimile (02) 6361 9814

MELBOURNE
2/1464 Ferntree Gully Road, Knoxfield VIC 3180
Telephone (03) 9237 6200 Facsimile (03) 9237 6299

BENDIGO
Ramsay Court, Kangaroo Flat VIC 3555
Telephone (03) 5447 8455 Facsimile (03) 5447 9677

HOBART
57 Crooked Billett Drive, Brighton TAS 7030
Telephone (03) 6263 5536 Facsimile (03) 6263 6950

LAUNCESTON
289 Hobart Road, Kings Meadows TAS 7249
Telephone (03) 6343 7390 Facsimile (03) 6343 7381

ADELAIDE
11 Stock Road, Cavan SA 5094.
Telephone (08) 8262 4444 Facsimile (08) 8262 6333

BRISBANE
57-71 Platinum Street, Crestmead QLD 4132
Telephone (07) 3803 9999 Facsimile (07) 3803 1499

TOWNSVILLE
402-408 Bayswater Road, Garbutt QLD 4814
Telephone (07) 4779 0844 Facsimile (07) 4775 7155

CAIRNS
Vickers Street, Edmonton QLD 4869
Telephone (07) 4045 3069 Facsimile (07) 4045 4762

MACKAY
Brickworks Court, Glenella QLD 4740
Telephone (07) 4942 3488 Facsimile (07) 4942 2343

MARYBOROUGH
10 Activity Street, Maryborough QLD 4650
Telephone (07) 4121 2433 Facsimile (07) 4123 3139

ROCKHAMPTON
41 Johnson Street, Parkhurst QLD 4702
Telephone (07) 4936 2577 Facsimile (07) 4936 4603

SUNSHINE COAST
Unit 1, 5 Kerryl Street, Kunda Park QLD 4556
Telephone (07) 5456 4083 Facsimile (07) 5456 4862

MURWILLUMBAH
6 Kay Street, Murwillumbah NSW 2484
Telephone (02) 6672 8542 Facsimile (02) 6672 6798

DARWIN
55 Albatross Street, Winnellie NT 0820
Telephone (08) 8947 0780 Facsimile (08) 8947 1577

PERTH
605-615 Bickley Road, Maddington WA 6109
Telephone (08) 9493 8800 Facsimile (08) 9493 8899

BUNBURY
25 Proffit Street, Bunbury WA 6230
Telephone (08) 9721 8046 Facsimile (08) 9721 8017

WEBSITE www.stramit.com.au

6073