

The Floor System The Others Look Up To

Steel Joist Systems

The unparallelled Steel Joist System designed for fast, accurate assembly with a unique tab connection system and optional pre-punched service holes.





The Game Changer

The Speedfloor Steel Joist system offers extended spanning capability and unmatched constructional flexibility in almost any type of construction.

Applications

- The galvanised C sections feature unique fold-out 'tab' connectors in the perimeter channel for fast and accurate joining. There is also the option of pre punched holes for fast, efficient installation of services.
- Assembled on site or delivered as a pre-assembled cassette, Speedfloor joists are easily configured for mezzanine floors, portal framed sheds, industrial platforms, residential mid floors and piled sub floors or integrated into timber framed buildings.

High Tensile Strength

Speedfloor cold formed joists are manufactured from high strength, pre-galvanised steel coil conforming to AS 1397. The minimum mass coating of galvanising is 275g/m2. The standard steel used is grade 250 and has a minimum yield stress of 250MPa and a minimum tensile stress of 280MPa.







System Advantages

- Strong but lightweight joists allow for easy manoeuvrability.
- Available in the following sections with pre-punched service holes
 - 140, 150, 190, 240, 250 and 290mm
- Pre-galvanised 275g/m2 steel for long-term corrosion protection.
- Pre-cut to length, for time and cost savings.
- Producer Statements are available on request.

Speedfloor Steel Joist System - Standard Construction Details



Joist onto concrete or block walls



Perimeter channels and joist to structural steel



Speedfloor Steel Joist System - Span Tables

Max Span (m) of joists at nominated centers (mm) for 1.5kPa live load – Typical for Residential applications

Duefile	Web	Flange	Lip	Metoviel	Max Span*					
Profile				Material	400 Centres	450 Centres	600 Centres			
FJ140	140	45	15	1.55	3.7	3.4	3.1			
FJ190	190	45	15	1.55	4.7	4.5	4.1			
FJ240	240	45	15	1.85	5.7	5.5	5.1			
FJ290	290	45	15	2.50	6.9	6.7	6.2			
Max Span (m) of joists at nominated centers (mm) for 3.0kPa live load – Typical for Commercial application										
FJ140	140	45	15	1.55	3.5	3.4	3.0			
FJ190	190	45	15	1.55	4.3	4.0	3.5			
FJ240	240	45	15	1.85	5.1	5.0	4.3			
FJ290	290	45	15	2.50	6.2	6.0	5.6			
Max Span (m) of joists at nominated centers (mm) for 5kPa floor live load typical for Industrial applications.										
FJ140	140	45	15	1.55	2.9	2.7	2.4			
FJ190	190	45	15	1.55	3.4	3.2	2.8			
FJ240	240	45	15	1.85	4.2	4.0	3.4			
FJ290	290	45	15	2.50	5.6	5.3	4.6			
	Profile FJ140 FJ190 FJ240 FJ290 Max Span FJ140 FJ140 FJ190 FJ240 FJ140 FJ140 FJ140 FJ140 FJ240 FJ240 FJ240 FJ240 FJ240 FJ240 FJ240 FJ140 FJ140 FJ140 FJ240 FJ240 FJ240	Profile Web FJ140 140 FJ190 190 FJ240 240 FJ240 290 Max Span of joists FJ140 140 FJ240 290 Max Span of joists FJ140 140 FJ190 190 FJ240 240 FJ240 240 FJ240 240 FJ240 190 FJ240 190 FJ140 140 FJ140 140 FJ140 140 FJ140 240 FJ140 240 FJ140 240 FJ140 240 FJ290 240 FJ240 240	Profile Web Flange FJ140 140 45 FJ190 190 45 FJ240 240 45 FJ240 240 45 FJ240 290 45 FJ240 0 45 FJ240 290 45 FJ140 140 45 FJ140 140 45 FJ240 240 45 FJ240 140 45 FJ140 140 45 FJ140 190 45 FJ140 190 45 FJ240 240 45 FJ240 240 45 FJ290 290 45	Profile Web Flange Lip FJ140 140 45 15 FJ190 190 45 15 FJ240 240 45 15 FJ140 140 45 15 FJ240 240 45 15 FJ240 240 45 15 FJ240 240 45 15 FJ240 240 45 15 FJ240 290 45 15 FJ240 140 45 15 FJ140 140 45 15 FJ140 140 45 15 FJ140 140 45 15 FJ240 240 45 15 FJ240 240 45	Profile Web Flange Lip Material FJ140 140 45 15 1.55 FJ190 190 45 15 1.55 FJ240 240 45 15 1.85 FJ290 290 45 15 2.50 Max Span of joists tominate 5.55 1.55 FJ140 140 45 15 1.55 FJ140 140 45 15 1.55 FJ140 140 45 15 1.55 FJ240 240 45 15 1.55 FJ240 240 45 15 1.85 FJ240 240 45 15 2.50 Max Span of joists tominate tomis for SkPac FJ140 140 45 15 1.55 FJ140 140 45 15 1.55 FJ140 140 45 15 1.55	Profile Web Flange Lip Material 400 Centres F]140 140 45 15 1.55 3.7 F]190 190 45 15 1.55 3.7 F]190 190 45 15 1.55 4.7 F]240 240 45 15 1.85 5.7 F]200 290 45 15 2.50 6.9 Max Span (m) of joist trominate tenters (minor 3.0kg model of 1.55) 3.5 1.55 3.5 F]140 140 45 15 1.55 3.5 F]140 140 45 15 1.55 4.3 F]240 240 45 15 1.55 4.3 F]240 240 45 15 2.50 6.2 Max Span (m) of joist trominetter tenters (minor 5kF or live load type 1.5 2.50 6.2 Max Span (m) of joist trominetter tenters (minor 5kF or live load type 1.5 2.50 6.2 F]140 140	Profile Web Flange Lip Material Image Material </td			

Perimeter Channel*:

Max Span (m) of joists at nominated centers (mm) for 1.5kPalive load – Typical for Residential applications

Joist Span		Max Perimeter Channel Span					
up to:	Size		3kPa	5kPa			
	FJ140x1.55	1800	1300	1100			
2000*	FJ190x1.55	2100	1600	1200			
3000	FJ240x1.85	2700	2000	1600			
	FJ290x2.5	3700	2700	2200			
	FJ140x1.55	1600	1100	-			
4000*	FJ190x1.55	1800	1400	1100			
4000	FJ240x1.85	2300	1700	1400			
	FJ290x2.5	3200	2400	1900			
	FJ140x1.55	1400	1000	-			
5000*	FJ190x1.55	1600	1200	1000			
5000	FJ240x1.85	2100	1600	1200			
	FJ290x2.5	2800	2100	1700			
	FJ140x1.55	1300	_	-			
4000*	FJ190x1.55	1500	1100	-			
8000"	FJ240x1.85	1900	1400	1100			
	FJ290x2.5	2600	1900	1500			

Max total deadload is 0.5KPa, the span tables are for single span, if joists are used in continuous span the max span should be reduced by 15%. The maximum length of a joist should be no longer than 6.9m. Service holes should be a minimum of 300mm minimum away from any load bearing supports and at a minimum of 1000mm centres apart. Joist spans of over 3.0m are to have at least one row of full depth mid-span blocking installed. Point loads on any joist are to be specifically engineered based on capacity tables.

*Perimeter Channel spans are not applicable for support of a loadbearing wall or roof loads. *Balustrade connecting to the channel need to be independently assessed for suitability. *No service holes are allowed within the span.

Joist Span up to:	Composite Section Size	1.5kPa	3kPa	5kPa	Joist Span up to:	Composite Section Size	1.5kPa	3kPa	5
	PC140 + C200/18	4.2	3.6	2.8		PC140 + C200/18	3.7	2.8	
3000*	PC190 + C200/18	4.3	3.6	2.9	5000*	PC190 + C200/18	3.8	2.8	
3000	PC240 + C250/18	5.1	4.4	3.6	5000	PC240 + C250/18	4.5	3.5	
	PC290 + C300/18	6.0	5.2	4.1		PC290 + C300/18	5.3	4.0	
	PC140 + C200/18	3.9	3.1	2.5		PC140 + C200/18	3.4	2.5	
4000*	PC190 + C200/18	4.0	3.1	2.5	6000*	PC190 + C200/18	3.4	2.5	
4000	PC240 + C250/18	4.7	3.9	3.1	0000	PC240 + C250/18	4.2	3.2	
	PC290 + C300/18	5.6	4.5	3.6		PC290 + C300/18	4.9	3.7	

* Tables relate to single span floors. Perimeter Channels to be fixed every 600mm with 2 x M12 bolts and washers to C Purlin

Joists	Profile	Web	Flange	Lip	Material	Max Span*			
						400 Centres	450 Centres	600 Centres	
ē	FJ140x1.55	140	45	15	1.55	0.9	0.9	0.8	
	FJ190x1.55	190	45	15	1.55	1.2	1.1	1.0	
	FJ240x1.85	240	45	15	1.85	1.5	1.5	1.3	
3	FJ290x2.5	290	45	15	2.50	2.0	1.9	1.7	

NOTE: Minimum Back Span required is 2 x Cantilever Span. Maximum live load of 5KPa. Dynamic vibration of cantilevers is based on NZS1170.0:2002 with a 1-2mm deflection under a 1kN point load and assumes a rigid wall below. For cantilever joists supported by beams, specific vibration design should be undertaken. No service penetrations on cantilever span.

Speedfloor offer the SPEEDFLOOR STEEL FLOOR Joist system in a range of section sizes

rties			Second moment of area (full)		Section modulus (full)	Moment Capacity (distortional buckling)	Shear capacity (reduced for web penetrations)	End Connection Capacity	
bei	"C"Section	Thickness (mm)	1x (10º mm4)	1y (10ºmm⁴)	Zx (10³mm³)	ΦM dbx (kNm)	ΦVv (kN)	kN	
2	140x45	1.55	1.110	0.102	15.840	3.56	22.60	6.09	
Ę	150x45	1.55	1.110	0.102	15.840	3.56	22.60	6.09	
ci i	190x45	1.55	2.303	0.117	24.240	4.71	13.79	6.09	
Se	240x45	1.85	4.818	0.138	40.150	7.21	18.41	15.00	
ò	250x45	1.85	5.329	0.139	42.630	7.53	18.80	15.00	
Ň	290x45	2.5	10.240	0.184	70.630	13.28	36.54	20.28	

NOTES: For 150 & 250 joist spans use the 140 & 240 tables provided. Joist spans over 3m are to have at least 1 row of full depth mid span blocking. For definition of distortional buckling, refer AS/NZS 4600:2005. End connection capacity based on bearing capacity of 10g tek screws as per AS/NZS 4600:2005. The section modulus Zx in the table is for the full section. The actual section modulus varies depending on design stress. This table should be used in conjunction with the design requirements of AS/NZS 4600:2005.



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