

FLOOR JOIST:

Speedfloor Steel Joist System - Span Tables

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

Profile	Web	Flange	Lip	Material	Max Span*		
					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 applications

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

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*:

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

Joist Span up to:	Size	Max Perimeter Channel Span		
			3kPa	5kPa
3000*	FJ140x1.55	1800	1300	1100
	FJ190x1.55	2100	1600	1200
	FJ240x1.85	2700	2000	1600
	FJ290x2.5	3700	2700	2200

4000*	FJ140x1.55	1600	1100	–
	FJ190x1.55	1800	1400	1100
	FJ240x1.85	2300	1700	1400
	FJ290x2.5	3200	2400	1900

5000*	FJ140x1.55	1400	1000	–
	FJ190x1.55	1600	1200	1000
	FJ240x1.85	2100	1600	1200
	FJ290x2.5	2800	2100	1700

6000*	FJ140x1.55	1300	–	–
	FJ190x1.55	1500	1100	–
	FJ240x1.85	1900	1400	1100
	FJ290x2.5	2600	1900	1500

*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.

Composite Beam

Joist Span up to:	Composite Section Size	1.5kPa	3kPa	5kPa
3000*	PC140 + C200/18	4.2	3.6	2.8
	PC190 + C200/18	4.3	3.6	2.9
	PC240 + C250/18	5.1	4.4	3.6
	PC290 + C300/18	6.0	5.2	4.1

4000*	PC140 + C200/18	3.9	3.1	2.5
	PC190 + C200/18	4.0	3.1	2.5
	PC240 + C250/18	4.7	3.9	3.1
	PC290 + C300/18	5.6	4.5	3.6

Joist Span up to:	Composite Section Size	1.5kPa	3kPa	5kPa
5000*	PC140 + C200/18	3.7	2.8	2.2
	PC190 + C200/18	3.8	2.8	2.2
	PC240 + C250/18	4.5	3.5	2.8
	PC290 + C300/18	5.3	4.0	3.2

6000*	PC140 + C200/18	3.4	2.5	2.0
	PC190 + C200/18	3.4	2.5	2.0
	PC240 + C250/18	4.2	3.2	2.5
	PC290 + C300/18	4.9	3.7	2.9

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

Cantilever Joists

Profile	Web	Flange	Lip	Material	Max Span*		
					400 Centres	450 Centres	600 Centres
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
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

		Second moment of area (full)		Section modulus (full)	Moment Capacity (distortional buckling)	Shear capacity (reduced for web penetrations)	End Connection Capacity
"C"Section	Thickness (mm)	1x (10 ⁶ mm ⁴)	1y (10 ⁶ mm ⁴)	Zx (10 ³ mm ³)	ΦM _{dist} (kNm)	ΦV _v (kN)	kN
140x45	1.55	1.110	0.102	15.840	3.56	22.60	6.09
150x45	1.55	1.110	0.102	15.840	3.56	22.60	6.09
190x45	1.55	2.303	0.117	24.240	4.71	13.79	6.09
240x45	1.85	4.818	0.138	40.150	7.21	18.41	15.00
250x45	1.85	5.329	0.139	42.630	7.53	18.80	15.00
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.

I + Z 'C' Section Properties



STEEL JOIST SYSTEM



FASTER LIGHTER EASIER

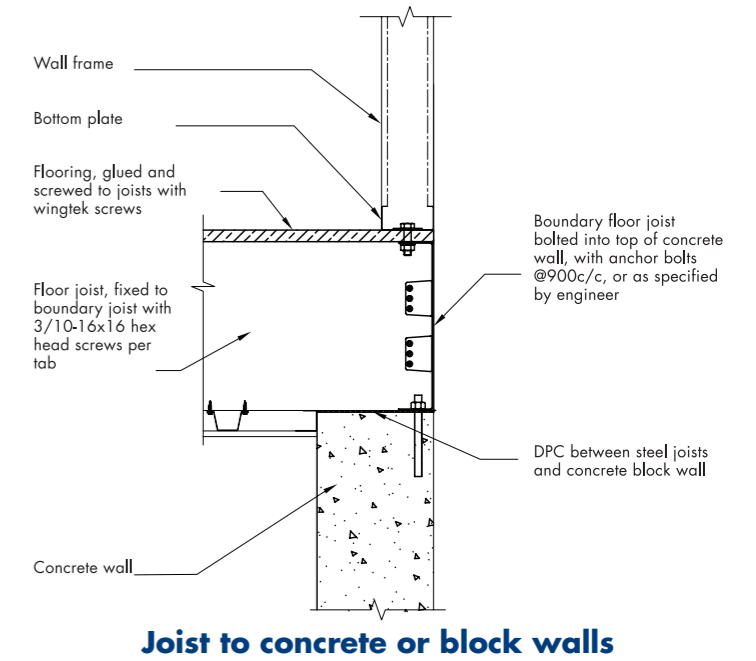
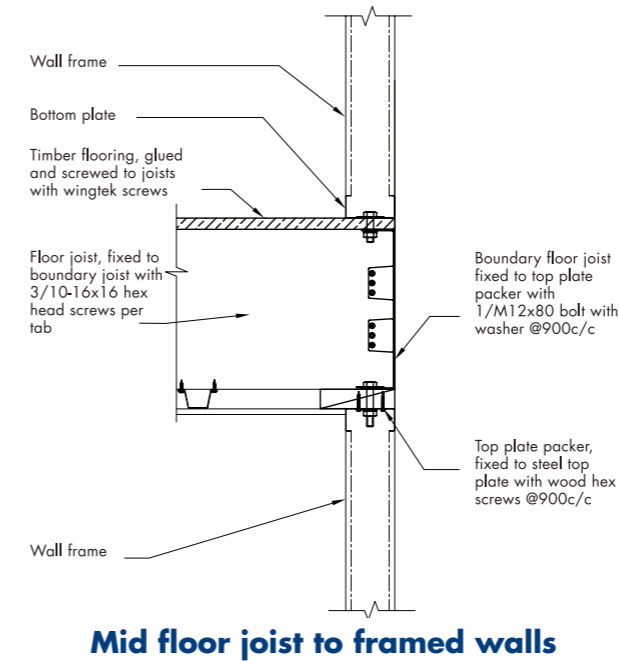
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The Speedfloor Steel Joist span table is pre-engineered to AS/NZS 4600:2005. The Speefloor steel joist are designed to comply with the sensitivity deflection and dynamic vibration requirements imposed by AS 3623. The Speedfloor Joist System will also meet the requirements set out in AS 4100, NZS 3404 & NZS1170.0



Speedfloor Steel Joist System - Standard Construction Details



SPECIFY STEEL FLOORING WITH EASE



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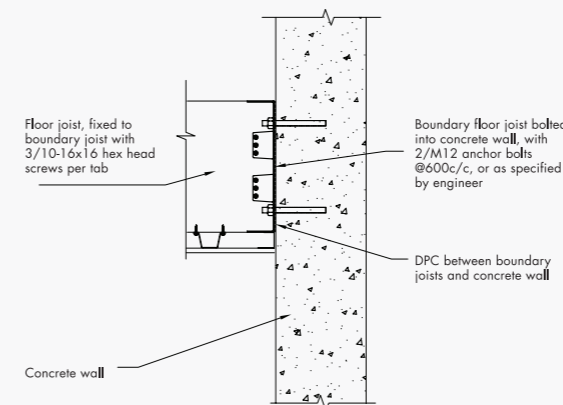
INTRODUCTION

The Speedfloor steel joist system is an engineered solution providing exceptional performance and construction efficiency. The steel joist system has been successfully used in a large number of projects. Designed for strength and ease of installation while offering economical spanning performance that is adaptable to a variety of building designs and construction methods.

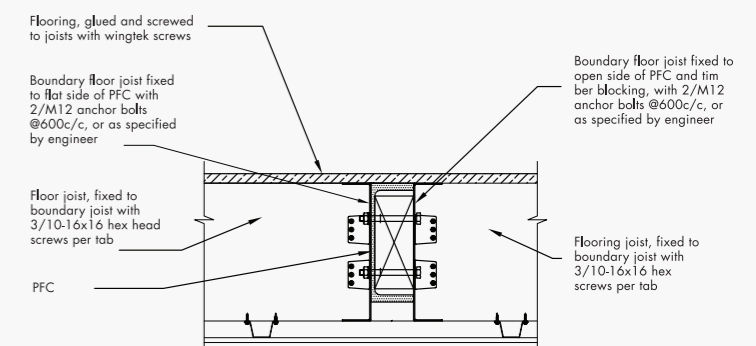
Whether its mezzanine floors in commercial buildings or portal framed sheds, platforms for industrial structures, residential sub floors on piles and bearers or for transportable units, the Speedfloor steel joist system is the smart choice.

In addition to being a logical decision when cost and design count, the Speedfloor system offers peace of mind in the knowledge that its span tables are pre-engineered, making council approvals uncomplicated including specifications for both Fire and Noise ratings.

Joist onto concrete or block walls



Perimeter channels and joist to structural steel



Advantages

- Durability – Joist are galvanised steel providing long term protection against corrosion
- Practical – pre-cut to length, eliminating on-site cutting time and cost
- Selection – four sizes to choose from and the added option of pre-punched service holes in the 190, 240 & 290mm joist web sections
- Service – design and engineering support
- Coverage – Systems are available nationally
- Support – Design Certificates and Producer Statements available on request.



The Speedfloor Steel Joist System provides a simple effective solution to your floor structure requirements.

STEEL JOIST SYSTEM

www.speedfloor.co.nz