



HOIPLEYS 'TRUSSES

MIDALIA STEEL

HOPLEYS TRUSSES

Introduction

Hopleys steel joists are manufactured from light weight galvanised steel for durability and require little or no maintenance. Their obvious advantages over timber products are stability without warping or shrinking, lack of costly offcuts and ease of handling during construction. These characteristics afford the ease of modular design for enhanced strength plus a pleasing appearance when exposed.

The HJ range comes in standard heights of 150mm, 200mm, 250mm & 300mm. The HB range comes in standard heights of 300mm, 350mm, 400mm & 450mm as well as 'made to order' specials as requirements dictate, and are manufactured to any length required.

The open web design permits ready access for all pass through services, such as pipes and cables. The unique design has no sharp edges or surfaces which adversely affect these services. They offer flat surfaces for easy seating and fixing of ceilings and flooring. They also offer easy man handling, low cartage and crane costs and are an economical, strong alternative to conventional timber and rolled steel beams.

“AT MIDALIA STEEL WE ARE PROUD TO BE A MAJOR DISTRIBUTOR OF HOPLEYS TRUSSES IN WESTERN AUSTRALIA...MMMATE!

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Their innovative design, high quality fabrication, neat appearance and light weight have proven to be dominant features in outstanding market acceptance of this relatively new product.

Hopleys open web steel joists offer the following design features:

1. Economical
2. Conform to building standards
3. Light weight for ease of handling
4. Made from galvanised steel for long life and low maintenance
5. No shrinking, warping, or twisting compared to alternative products, resulting in a longer lasting floor system
6. Reduced dead loads
7. Open web construction permitting access for pass through services
8. Standards heights available 150mm, 200mm, 250mm, 300mm, 350mm, 400mm & 450mm
9. All lengths precut to save time and labour on site. Standard lengths are also available in stock.
10. Hopleys open web steel joists are available Australia wide from our extensive distributor network
11. Steel products conserve our natural timbers and forests
12. Manufactured to comply with Australian Standards: AS1170.1, AS1170.2, AS4100, AS1657, AS4055, AS3623, and the Building Code of Australia.

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Flooring – Commercial and Industrial

Open Web Steel Joists offer unique possibilities in both design and cost effectiveness because of fast erection, high rigidity and a no maintenance finish. Typical industrial applications include mezzanine and multi-level flooring, conveyor decks, catwalks, stages, platforms, workrooms and storage rooms.

Some typical commercial applications include office mezzanines, raised floors, showrooms, computer floors and raised storage areas. They offer a flat easy to mount surface, with good load bearing characteristics and high durability.

The open web design also allows access for pass through services, reducing the overall floor thickness.

The 'HB' Range can be doubled up, when required, to provide structural members which can be hidden within the floor thickness, eliminating unsightly bulkheads.



Cost Effective Design and Construction

Budget specific design, manufacture and installation, producing significant cost savings for any size project

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Flooring – Commercial and Industrial

Mezzanine Floors/Light Industrial Workrooms/Storage up to 2.4m high/General Industrial Mezzanines

Industrial Flooring		Maximum Allowable Span							
Load	Spacing (mm)	HJ150	HJ200	HJ250	HJ300	HB300	HB350	HB400	HB450
Live Load 3.0kPa	450	3.4	4.2	4.6	5.6	6.6	7.4	8.1	8.8
	600	2.9	3.6	4.0	4.7	6.1	6.7	7.3	7.0
Live Load 5.0kPa	450	3.1	3.8	4.5	5.1	5.8	6.5	7.2	8.0
	600	2.8	3.5	4.0	4.6	5.2	6.0	6.5	7.2

Dead Load = 0.3kPa Maximum Deflection = Span/250

Workshops/Factories/Classrooms/Offices/Commercial Kitchens/Gymnasiums/Shops

Commercial Flooring		Maximum Allowable Span							
Load	Spacing (mm)	HJ150	HJ200	HJ250	HJ300	HB300	HB350	HB400	HB450
Live Load 3.0kPa	450	-	3.3	3.9	4.5	5.0	5.7	6.3	6.8
	600	-	3.0	3.5	4.0	4.6	5.1	5.7	6.2
Live Load 5.0kPa	450	-	2.8	3.4	3.8	4.3	4.8	5.4	5.9
	600	-	2.6	3.0	3.4	3.9	4.4	4.9	5.4

Dead Load = 0.3kPa Maximum Deflection = Span/500

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Flooring – Domestic

Hopleys light weight galvanised open web joists are ideal for domestic flooring applications. They are suitable for both subfloor and particularly first floor applications because of their light weight and easy installation.

They also make fitting for pass through services, such as electrical wiring and plumbing, extremely easy. They offer a flat surface, good load bearing characteristics and high durability.

Our light weight joists reduce flooring dead loads which in turn reduces the size of the supporting members and lowers overall costs. They allow larger spans, reducing stump and bearer costs and installation time.

“They offer a flat surface, good load bearing characteristics and high durability.”



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Flooring – Domestic

Residential Floors/Balconies under 1m high/Balconies over 2m high

Domestic Flooring		Maximum Allowable Span							
Load	Spacing (mm)	HJ150	HJ200	HJ250	HJ300	HB300	HB350	HB400	HB450
Live Load 1.5kPa	450	3.5	4.2	4.8	5.5	6.5	7.3	8.0	8.7
	600	3.2	3.8	4.3	5.0	6.0	6.6	7.2	7.9
Live Load 2.0kPa	450	3.1	3.8	4.5	5.1	5.8	6.5	7.2	8.0
	600	2.8	3.5	4.0	4.6	5.2	6.0	6.5	7.2

Dead LOAD = 0.25kPa Maximum Deflection = Span/500

Domestic Bearer Span Table		Maximum Allowable Span				
Live Load 1.5kPa		Load Width = Add the joist spans to both sides of the bearer then divide by 2				
Load Width	HJ150	HJ200	HJ250	HJ300	HB300	
1800	2400	2900	3500	4000	4500	
2400	2200	2700	3200	3600	4100	
3000	2000	2500	2900	3200	3800	
3600	1900	2300	2600	3000	3500	
4200	1800	2100	2400	2800	3300	
4800	1700	2000	2300	2600	3200	
5400	1600	1900	2100	2400	3100	
6000	1500	1800	2000	2200	3000	

Dead LOAD = 0.25kPa Maximum Deflection = Span/500

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HOPLEYS TRUSSES

Roofing – General

Although commonly referred to as a joist, the HJ & HB range of products are ideal for use as a truss or rafter in all types of roofing. Skillion or gable constructions are suited to our joists for use in domestic, industrial and agricultural areas. ie. houses, carports, garages, factories, farm sheds and lean-to's. They may also be used for hanging beams and suspended ceilings. Hopleys Joists may be powder coated in a range of fashion colours to make them a design feature on internal applications.



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Roofing – General

Span	Maximum Allowable Spacing, Simply Supported					
Metres	HJ150	HJ200	HJ250	HJ300	HB350	HB450
3.5	3600					
4.0	2700	4200				
4.5	2100	2700	3600			
5.0	1700	2500	3300	3600		
6.0	1200	2300	2300	3000		
7.0	900	2100	1700	2800	7000	
8.0	650	1000	1300	2600	5600	7000
9.0		800	1000	2400	4400	5800
10.0			800	1100	3400	4700
11.0				900	2500	3900
12.0					1800	3200

Live Load 0.25kPa
Dead Load 0.13kPa

Maximum Deflection
Span / 180

This table may also be used for wind uplift to a maximum of 0.4 kPa with suitable lateral restraints. here wind load governs, ie., in excess of 0.4 kPa, the span shall be reduced. No provision has been made for the 1.3kN concentrated load. Where joist ends have rigid connections or are over multiple supports the spans may be increased.

Consult your / our engineer for details.

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1. HJ JOIST TO WHALING PLATE USING HJ SHOE



2. HJ TO HB SHOE CONNECTION



3. HJ OVER WALLPLATE USING TRIPLE GRIP



4. HJ SHOE TO COLUMN



5. HJ TO WALLPLATE USING NAIL CLIP (END-CLIP WELDED BY HOPLEYS)



6. HJ BALCONY SETDOWN SHOE



7. HJ TOP HUNG SHOE (WELD ON SITE)



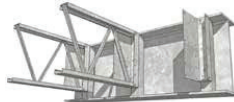
8. HJ TOP HUNG SHOE TO PFC USING TIMBER PLATE (BOLTED TO PFC)



9. HJ VERTICAL HUNG SHOE TO SUIT NOMINATED STRUCTURAL PFC (WELD ON SITE)



10. HJ VERTICAL HUNG SHOE TO SUIT NOMINATED STRUCTURAL UB/UC (WELD ON SITE)



11. HJ LARGER BEAM WITH VERTICAL SHS STUBS WELDED TO FLANGES BY HOPLEYS OR STEEL FABRICATOR



12. HJ SMALLER BEAM WITH VERTICAL SHS STUBS WELDED TO FLANGES BY HOPLEYS OR STEEL FABRICATOR

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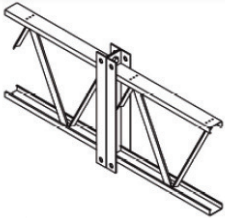
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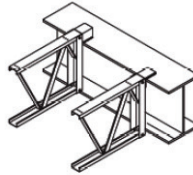
HOPLEYS TRUSSES



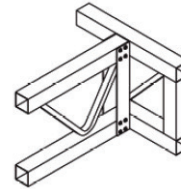
HOPLEYS JOIST CONNECTION
USING KNEE CHANNELS,
2 - M16 X 40 BOLTS



HOPLEYS JOIST END CLIP FITTED



HOPLEYS TOP HUNG SHOES 50 X
50 SHS OR 75X8 E.A WELD SHOE
AT TOP ONLY



HOPLEYS BEAM TO HOPLEYS
BEAM WITH HB SHOE
24 - 12 X 20 SELF TAPPING

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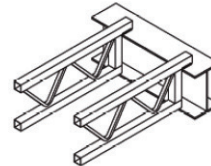
HOPLEYS JOIST TO COLUMN
REVERSE KNEE CHANNEL
2 - M16 X 80 BOLTS



HOPLEYS JOIST OVER WALL PLATE
LOAD CLIP 1 SIDE
4 X 12 X 20 SELF TAPPING
SCREWS



LOOSE END CLIP ALSO DOUBLES
AS A LOAD CLIP



HOPLEYS TOP HUNG HB WELD TO
SUPPORTING STEEL WORK

ALL STEEL FIXINGS CAN BE REPLACED WITH WELDED CONNECTIONS



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Floor Sheeting

We recommend the following minimum sheet flooring thickness:

1.5kPa Floor Load, Joists @ 450mm c/c

19mm Structaflor™ Yellow Tongue Particleboard Flooring OR 17mm Plywood, F14

1.5kPa Floor Load, Joists @ 600mm c/c

22mm Structaflor™ Red Tongue Particleboard Flooring OR 17mm Plywood, F14

3.0kPa Floor Load, Joists @ 450mm c/c

22mm Structaflor™ Red Tongue Particleboard Flooring OR 17mm Plywood, F14

3.0kPa Floor Load, Joists @ 600mm c/c

25mm Structaflor™ Blue Tongue Heavy Duty Particleboard Flooring OR 19mm Plywood, F14

5.0kPa Floor Load, Joists @ 450mm c/c

25mm Structaflor™ Blue Tongue Heavy Duty Particleboard Flooring OR 19mm Plywood, F14

5.0kPa Floor Load, Joists @ 600mm c/c

25mm Structaflor™ Blue Tongue Heavy Duty Particleboard Flooring OR 21mm Plywood, F14

An approved construction grade adhesive should be used to bond the sheet flooring to the joists. Approximately 2 tubes of 850ml will be required per 10 - 3600mm x 900mm sheets.

Check with your/our Engineer to determine the appropriate design loads for your floor



We use and recommend DuraGal® Adjustable stumps

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Steel framed floors are generally stronger, lighter and have less deflection than a conventionally framed timber floor. They offer many benefits including savings in costs, installation time and dead loads. Steel framed floors also react differently to applied loads than a timber floor.

This dramatic increase in dynamic performance and without the effects of creep, rot and termites, will see your steel floor deflect the same amount after 20 years as it did when completed.

Our span tables have been designed to keep the deflection below the level required by the Building Code of Australia.

When using Hopleys Joists to create large open areas such as family or rumpus rooms, please consult your Hopleys representative.

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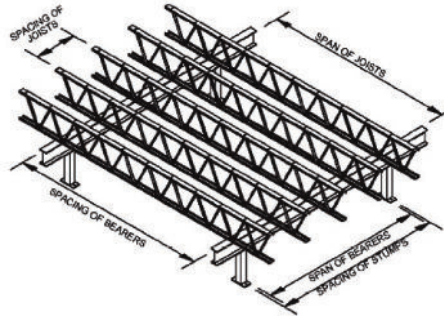
Spacing and Span

“Spacing” is the centre to centre distance between structural members and is assumed to be 450mm unless noted otherwise “Span” is the face to face distance between points of support for the structural members. “Single Span” is the span of a member supported at both ends with no intermediate support. This is also known as “simply supported”.

“Continuous Span” is when a member has support at both ends and at one or more evenly spaced points between the ends.

All span tables comply with the following provisions and regulations:

- AS1170.1- Structural Design Actions (Loading Code)
- AS1170.2 - Structural Design Actions (Wind Code)
- AS4100 - Steel Structures
- AS4055 - Wind Loads for Housing
- AS3623 - Domestic Metal Framing
- NASH Residential and Low-Rise Steel Framing Part 1: Design Criteria 2005



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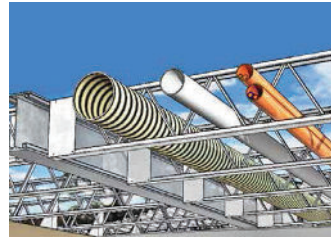
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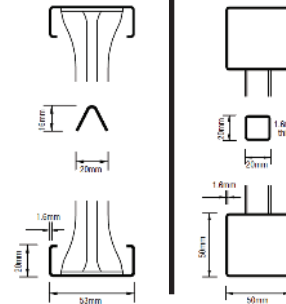
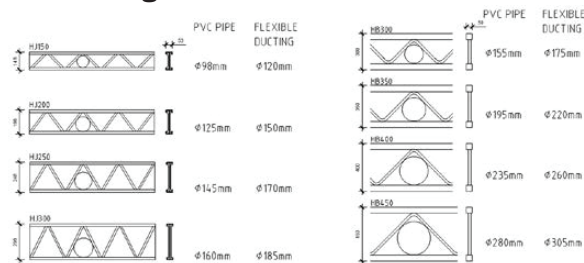
Spacing and Span

Joist Type	Chord Area	Joist Mass	Radius of Gyration	Moment of Inertia
HJ150	288mm ²	2.78kg/m	$r_{yy} = 20\text{mm}$	$I_{xx} = 1.52 \times 10^6 \text{mm}^4$
HJ200	288mm ²	2.89kg/m	$r_{yy} = 20\text{mm}$	$I_{xx} = 2.82 \times 10^6 \text{mm}^4$
HJ250	288mm ²	3.04kg/m	$r_{yy} = 20\text{mm}$	$I_{xx} = 4.52 \times 10^6 \text{mm}^4$
HJ300	288mm ²	3.11kg/m	$r_{yy} = 20\text{mm}$	$I_{xx} = 6.62 \times 10^6 \text{mm}^4$
HB300	606mm ²	6.00kg/m	$r_{yy} = 19.6\text{mm}$	$I_{xx} = 9.70 \times 10^6 \text{mm}^4$
HB350	606mm ²	6.10kg/m	$r_{yy} = 19.6\text{mm}$	$I_{xx} = 13.9 \times 10^6 \text{mm}^4$
HB400	606mm ²	6.20kg/m	$r_{yy} = 19.6\text{mm}$	$I_{xx} = 18.9 \times 10^6 \text{mm}^4$
HB450	606mm ²	6.30kg/m	$r_{yy} = 19.6\text{mm}$	$I_{xx} = 24.5 \times 10^6 \text{mm}^4$



HJ Section G300 Z275 **HB Section G350 DuraGal**

Pass through Services



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PLEASE NOTE: YOU MUST OBTAIN AN ENGINEERS CERTIFICATION FOR YOUR SPECIFIC JOB TO ENSURE THAT YOU ADEQUATELY SUPPORT LOAD REQUIREMENTS AND RELEVANT SPANS.

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- **Geraldton**
89 Flores Rd, Geraldton WA 6530 | tel: 08 99608833 | e: geraldton@midaliasteel.com
- **Midvale**
34 Farrall Road, Midvale WA 6056 | tel: 08 94621305 | e: midvale@midaliasteel.com
- **Lansdale**
10 Rogers Way, Lansdale WA 6065 | tel: 08 64018788 | e: lansdale@midaliasteel.com
- **Welshpool**
475 Orrong Road, Welshpool WA 6106 | tel: 08 93334444 | e: welshpool@midaliasteel.com
- **Bibra Lake**
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- **Wagin**
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- **Mandurah**
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- **Bunbury**
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