

# Finnjoist® I-beam



Metsä Wood Finnjoists (FJI) are 'I' shaped engineered wood products used as joists, rafters and columns. They have excellent strength to weight ratio and are easy to install. Finnjoists are used in thermally high performing structures and can be used in passive house construction.

The composite structure consists of LVL (laminated veneer lumber) top and bottom flanges and OSB (oriented strand board) web. The web and the flange are bonded together with a structural water resistant adhesive to EN 301. The LVL flanges resist bending and the OSB web provides outstanding shear resistance. The combination of high quality raw materials ensure a robust, versatile and economical framing member that is easy to install in a wide range of construction projects.

## MAIN APPLICATIONS

Finnjoists are used as floor and roof beams in residential, office, educational and light-industrial buildings. Finnjoists can also be used in high thermally performing walls as studs and roofs as rafters to allow insulation levels for a passive house type construction. The composite structure of Finnjoists ensure straight and light-weight product with excellent strength properties enabling long spans in construction and easy installation and service supply.

## MAJOR ADVANTAGES

- Light and straight
- Dimensionally stable
- Great workability and quick to install
- Easy to fasten, staple, screw and nail using conventional woodworking tools
- Easy to install large service holes through the web
- Ensures material efficiency with standardised product dimensions
- Easy to design with free Finnwood design software
- Made of sustainable northern wood and PEFC certified
- Responsibly sourced Northern Timber
- Finnjoist (1 kg) contains the stored carbon equivalent to 1.6 kg CO<sub>2</sub>

## APPROVALS AND DESIGN PROPERTIES

Finnjoist is CE marked and the design properties are determined according to ETA 02/0026. The design properties given in the Declaration of Performance (DoP) are to be used for structural calculations with EN 1995 (Eurocode 5). The DoP documents can be downloaded from [www.metsawood.com/dop](http://www.metsawood.com/dop).

Finnjoists have also BM TRADA Q-mark certificate. Finnjoist production is managed according to the principles of standard ISO 9001. The quality and the constancy of performance of the product is controlled by regular third party inspections and audits.

## BONDING

Finnjoists are bonded with weather and boil resistant MUF adhesive in the flange-web joint and in the web-web joint. After cold pressing the joists are cured in a curing chamber, where the adhesive cures as thermoset plastic, and therefore is inert and non-hazardous to humans and animals.

## FORMALDEHYDE EMISSIONS

The formaldehyde potential of the LVL flange is classified to be E1 in accordance with EN 14374 and the formaldehyde potential class of the web board is classified to be E1 in accordance with EN 13986. Determined according to EN 717-1, the formaldehyde emitted by Finnjoist falls below the Class E1 requirement of  $\leq 0.100$  ppm. The formaldehyde emission of Finnjoist is approximately 0.060 ppm.

## FURTHER PROCESSING

Larger packs of Finnjoists can be length cut in packs. The length tolerance is  $-0\text{mm} / +25\text{mm}$ .

## PACKAGING

Products are packed in moisture-resistant plastic packing hoods. Packages can be stored outside temporarily. Longer-term storage is recommended under cover in dry conditions.

## STANDARD SIZES

FLANGE SIZE WIDTH $b_f$ x DEPTH $h_f$ [mm x mm]							
	45x36	45x39	53x36	63x36	69x36	89x39	96x39
200		FJI 45x200				FJI 89x200	
220	FJI 45x220-36		FJI 53x220-36		FJI 69x220-36		FJI 96x220
240	FJI 45x240-36		FJI 53x240-36	FJI 63x240-36	FJI 69x240-36		FJI 96x240
300	FJI 45x300-36		FJI 53x300-36	FJI 63x300-36	FJI 69x300-36		FJI 96x300
360		FJI 45x360		FJI 63x360-36		FJI 89x360	
400		FJI 45x400		63x400-36		FJI 89x400	

For non-standard sizes please contact the Metsä Wood sales representative

## OVERALL DIMENSIONS

		MINIMUM (mm)	MAXIMUM (mm)
Width	$b_f$	45	96
Flange depth	$h_f$	36	45
Depth	H	160	600
Length	L	8,000	14,000

## STANDARD TOLERANCES

		MINIMUM (mm)	MAXIMUM (mm)
Overall joist depth	H	-1.5 mm	+1.5 mm
Overall joist length	L	-0 mm	+10 mm
Flange width	$b_f$	-1.5 mm	+1.5 mm
Flange depth	$h_f$	-2.0 mm	+2.0 mm
Web thickness	$b_w$	-0.4 mm	+1.6 mm

## HEALTH AND SAFETY

Finnjoists themselves are not a hazardous substance. Contact with Finnjoists therefore does not create a health risk under normal use, although some of the timbers making up the Finnjoists may cause skin irritation or dermatitis to sensitised individuals.

Skin contact with some gums or resins, introduction of splinters into the skin, inhalation of disturbed moulds and dusts together with dust derived from sawing can occasionally produce an increased risk of ill health.

Wood dust which will be created during cutting or machining is a hazardous substance and subject to the full provisions of COSHH Regulations. Effective dust extraction systems are recommended to remove dust particles and thereby minimise exposure. Softwood dust is classified as a respiratory sensitiser. Exposure should be kept as low as is reasonably practical and must not exceed the Workplace Exposure Limit (WEL) of  $5\text{mg}/\text{m}^3$ .

Exposure to wood dust may produce adverse reactions, such as skin disorders and respiratory effects.

## SPECIAL CONTROL MEASURES

Effective dust extraction will be necessary from areas where wood machining operations are conducted.

## PERSONAL PROTECTION

When prolonged machining of Finnjoists is to be undertaken it may be necessary to supplement the dust extraction with approved dust masks. Similarly, during machining, the use of safety glasses is recommended where there is a risk of eye injury. IT SHOULD BE NOTED THAT THE USE OF PERSONAL PROTECTIVE EQUIPMENT IS A LAST RESORT AND OTHER FORMS OF CONTROL MUST BE USED WHERE POSSIBLE.

## FIRE AND EXPLOSION HAZARD

Extinguisher type - water.

Explosion hazard - none for the raw material, however, airborne dust particles may be present a hazard, therefore, appropriate and effective dust extraction must be in place and maintained.

Smoking should be prohibited.

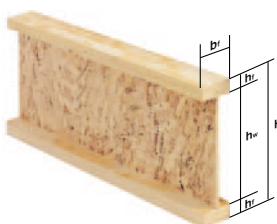
## FIRST AID MEASURES

Wood dust in eyes - Irrigate eyes with tepid water. If any adverse reactions persist, seek medical guidance. Inhalation of wood dust - Inhalation of fresh air, cleansing of nasal passages.

## FURTHER INFORMATION

- Finnjoist Declaration of Performance [www.metsawood.com/dop](http://www.metsawood.com/dop)
- Finnjoist ETA02/0026

For additional information on this product please visit our website: [metsagroup.com/metsawood/products-and-services/products/finnjoist/](http://metsagroup.com/metsawood/products-and-services/products/finnjoist/)



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