PRT-Lami Oy

PRT-Lami I beam

A lightweight beam for all types of construction

The lightweight PRT-Lami I beam is easy to work on

The PRT-Lami I beam is a lightweight support beam made by gluing timber flanges to a hardboard web. The I beam is suitable for intermediate, upper and lower flooring joists and external wall frames. The PRT-Lami I beam is at its best in structures requiring rigidity, thermal insulation, accuracy of measurement and cost-efficiency.

The PRT-Lami I beam is light and easy to handle on site. It is easy to work on with normal woodwork tools and holes can be made for heating, plumbing, ventilation and electrical inlets.

Property	Symbol	Value N/mm²
Bending strength of flanges	f_{mk}	27
Tensile strength of flanges	f_{t0k}	20
Compression strength of flanges	f_{c0k}	22
Shear strength of flanges	f_{vk}	2,8
Bending strength of web edgewise	$f_{mk,\,w}$	17
Shear strength of web	f_{vsk}	8,6
Shear strength of web/flange joint	f_{vpk}	1,1
Characteristic modulus of elasticity of flanges	E_k	7 700
Mean modulus of elasticity of flanges	E_f	11 500
Mean modulus of elasticity of web	E_w	3 500
Modulus of rigidity of web	G_w	1 400

Characteristic strength and modulus of elasticity and rigidity values of PRT-Lami I-joists to be used in calculations.

CE ETA-08/0225

- **Excellent rigidity**
- **Lightweight and accurate dimensions**
- **Delivered cut-to-size**
- **Heating, plumbing, ventilation and electrical inlets factory-prepared**
- **EC 5 vibration measurement**
- **Fast delivery**
- **Cheap**

Beam code	Timber flange, mm	Total height, mm
H 200/45	45 x 45	200
H 250/45	45 x 45	250
H 220/57	45 x 57	220
H 270/57	45 x 57	270
H 320/57	45 x 57	320
H 250/70	45 x 70	250
H 300/70	45 x 70	300
H 350/70	45 x 70	350
H 400/70	45 x 70	400
H 450/70	45 x 70	450

Homemade raw materials

The flanges of the PRT-Lami I beam are made from strength graded and specially dried northern tight-grained sawn spruce timber.

The web board of the PRT-Lami I beam is hard fibreboard fulfilling the requirements of the SFS-EN 622-1 And SFS-EN 622-2 standards for type HB.HLA1.

Weatherproof structures

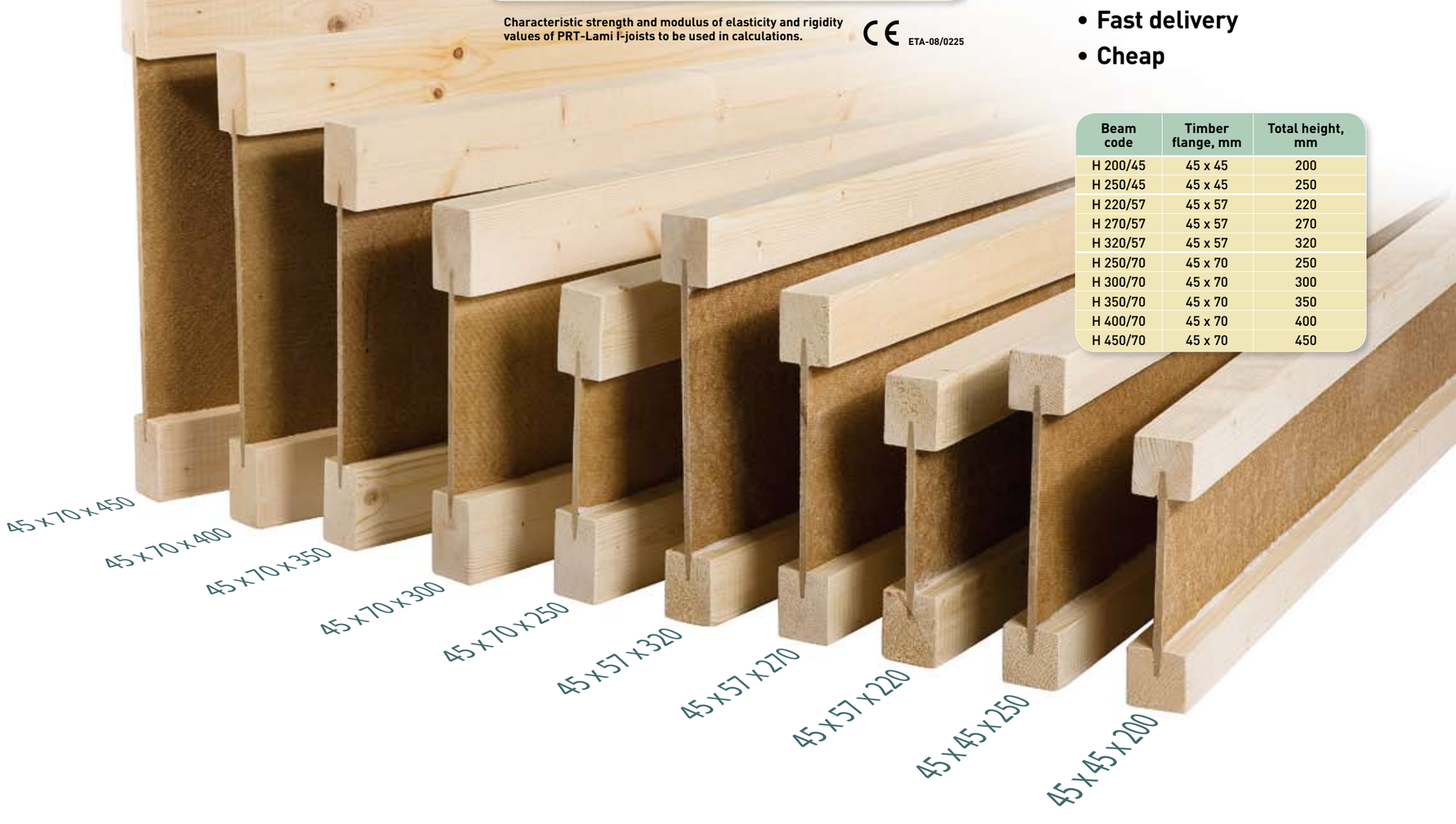
The hydraulic compressor accurately glues the PRT Lami I beam flange timbers and web board together with weatherproof glue.

European Technical Approval

PRT-Lami I beams are ETA (European Technical Approval) approved. The beams are produced in state-of-the-art manufacturing facilities under monitored thermal, air-moisture content conditions.

Delivered to the customer cut-to-size

The PRT-Lami I beams are delivered to customers cut to the required size up to a maximum length of 12 metres.

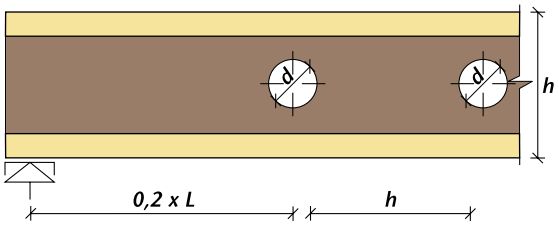


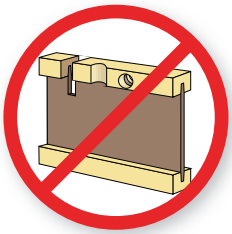
Perforating the PRT-Lami I beam:

Make holes in the PRT-Lami I beam web board as follows:

For an evenly loaded beam:

- nearest distance of the hole from support without reinforcing the web
- maximum hole size diameter 0.5 h x h
- L = bearing distance

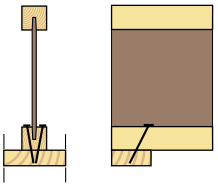




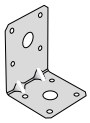
DO NOT make notches and holes in the flange timbers!

Fastening the PRT-Lami I beam:

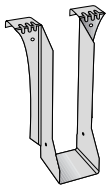
The PRT-Lami beam is fastened to the support with nails. It can also be secured using an angle/corner plate or joist hangers. When using nails, make sure that the flange does not split: use max. 100 x 34 nails and avoid putting nails under a distance of 15 x a, from the end of the beam (a = the thickness of nails).



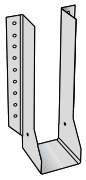
Nail diagonally if necessary, leaving a sufficient distance to the end of the beam.



angle plate



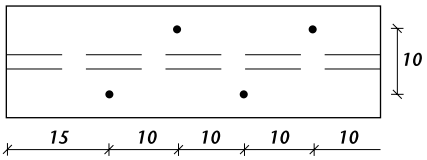
joist hanger K1



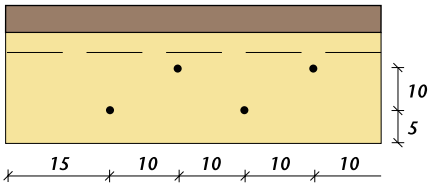
joist hanger K2

Fastening boards to the PRT-Lami I beam:

Fasten plaster, chip or other types of board to the PRT-Lami I beam using nails or screws according to the instructions of the board manufacturer. Remember permitted minimum distances during fastening and make sure you do not nail directly onto the web board.



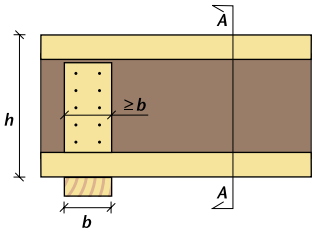
Distance between nails/screws in floorboards (mark out the line for nails using alignment wire or wire).



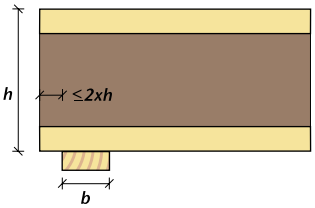
Distance between nails/screws in the flange.

Reinforcement:

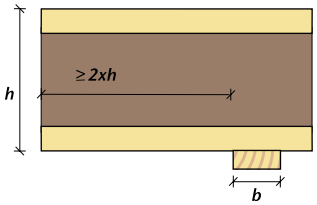
Where there are supports or concentrated loads, the PRT-Lami I-beam should be reinforced by placing e.g., a reinforcing plate each side of the web board.



Support at end of beam, reinforced



Support at end of beam, non-reinforced



Support in middle of beam, non-reinforced

Applications

PRT-Lami I beam as a tie beam (lower chord) of NR roof trusses:

- Cost efficient structure with a 300 mm high tie beam
- All heating, plumbing, ventilation and electrical inlets through the web board
- Compared to traditional NR open plan roof trusses the tie beam is more rigid
  - better sound insulation
  - smaller deflection
  - better vibration properties
  - better dimensional accuracy

N.B. The PRT-Lami beam can be used as a doweled beam in the NR roof truss!

On-site protection:

On site, the beams must be stored on top of straight timbers and protected from water and dampness. During installation the beams should be protected as building progresses using e.g., light covers or roof sheeting.

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