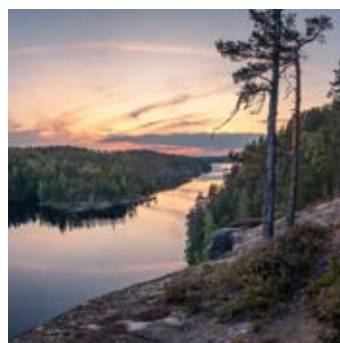
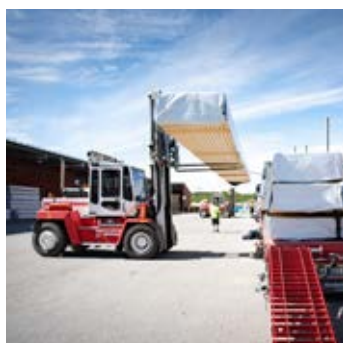


MASONITE BEAMS

Walls with I-joist

Issue 1





member of

BYGGMA
group

Masonite Beams is part of the Byggma Group.
Read more at masonitebeams.se

Strength comes from within

Houses built of wood have been withstanding the elements for hundreds of years.

With Masonite Beams' building systems, the strength comes from within. The strength of the building system is its ability to handle long spans, in the sound reduction and in the climate smart I-joist that are sourced from Swedish forerest.

In Rundvik in Northern Sweden, we are developing the building systems of the future. With Masonite Beams, you are choosing a well-developed building system where the strength comes from within. For people who want to build sustainable, both over time and for the environment.

Thank you for choosing Masonite Beams!





WALLS

Choose Masonite Beams' wall studs for the sake of the climate. The I-joist's small thermal bridges in the walls reduce heat losses by up to 57 percent. As a result, the total energy consumption of a building can be reduced by seven percent compared to traditional wall studs.

Walls



Walls

Up to 57% reduction in heat losses

Walls built using Masonite Beams' I-joists offer good building economy and are also excellent in terms of energy. This is because our studs have smaller thermal bridges with a load-bearing layer that provides insulation at the same time. Low U-values are thereby obtained for a relatively thin wall. I-joists are therefore very suitable for low-energy and passive buildings.

Studies show that using I-joists reduces heat losses by up to 57% via thermal bridges, and that the U-value is 15% lower on average than for conventional wooden stud structures. For a building with a timber frame structure, this means that the total energy consumption is reduced by no less than 7% simply by using I-joists instead of traditional timber studs.

20% increase in building efficiency

Masonite Beams' wall studs are straight and dimensionally stable. Time for installation can be lowered since wall studs can be manufactured in widths up to 400 mm. This avoids having a structure with pre-cut I-joists with tried and tested structures in order to achieve a thick, well-insulated wall.

With several layers of studs crossed in order to provide overall building efficiency with minimal material waste. This makes it possible to achieve a 20% reduction in labour for the execution of a wall using I-joists compared with traditional timber studs.

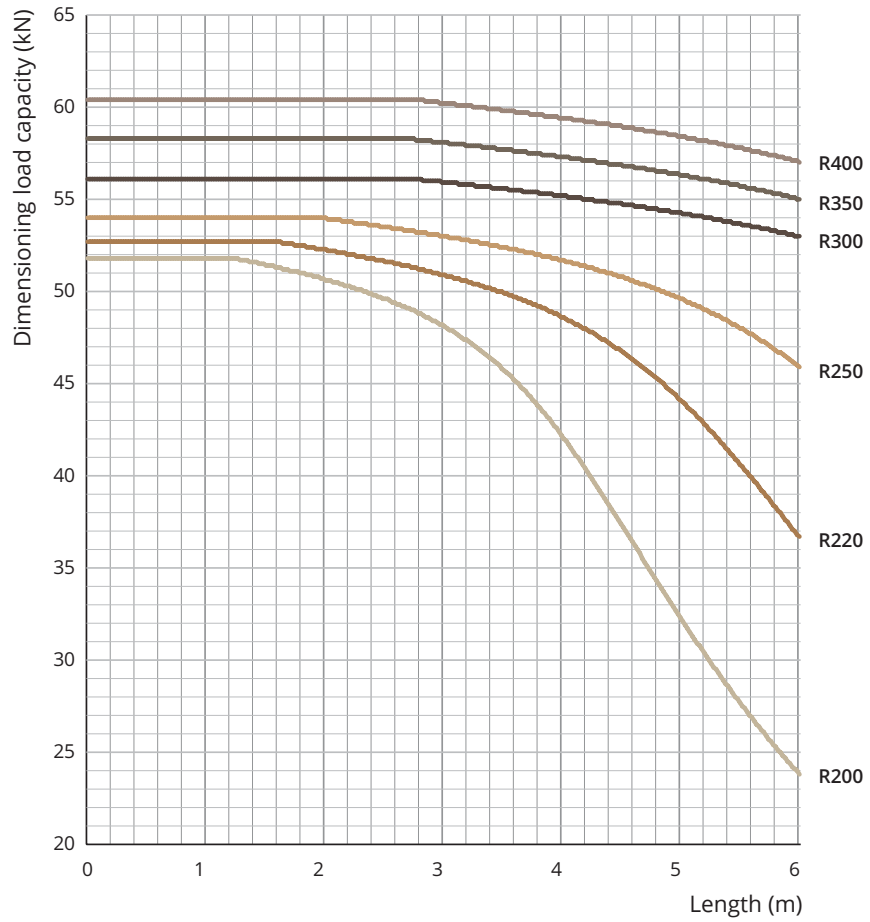
47% less raw material

Because our I-joists use narrow timber dimensions, they require 47% less raw material compared with traditional structural timber. At the same time, our wood-based I-joists have very low self-emissions.



Wall loads





The maximum design load N_d , in the case of buckling in the rigid direction can be seen in the diagram below for various stud lengths. In the table below the studs are assumed to be stiffened from buckling in the weak direction with stabilising sheet material.



The dimensioning N_d capacity is calculated for load duration class medium and climate class 1. The table is based on the rules in SS-EN-1995-1-1, EKS11.

Bearing capacity

A wall load absorbing capacity is often limited by the bearing capacity of the sill. Below are a number of commonly used versions and their bearing capacity N_d at various stud and sills widths.

Bearing capacity N_d (kN)*				
Sill type				
Width (mm)	Type S	Timber C18	Type S+	Type S/S+*
200	28.8	25.0	34.9	42.8
220	28.8	25.9	34.9	44.6
240	28.8	26.9	34.9	46.4
250	28.8	27.3	34.9	47.3
300	28.8	29.6	34.9	51.9
350	28.8	31.9	34.9	56.5
400	28.8	34.2	34.9	61.0

*Sill filled out with C18 quality timber.

The dimensioning capacity is calculated for load duration class medium and climate class 1. The table is based on the rules in SS-EN-1995-1-1, EKS11.

Building details, walls

The illustration shows different building details for wall structures. On the following pages you will find all the building details marked in the image.



Read more and see more building details at www.masonitebeams.se.



Y01-400

Building detail that presents various types of corner solutions.



Y01-500

Various ways to insulate Masonite Beams' studs.



Y02-010

Connection of exterior wall to foundation wall with insulating core.



Y02-013

Connection of exterior wall to foundation wall with insulating core and reinforced Masonite Beams studs.



Y05-201

Lintel above wall opening.



Y06-100

Connection of ceiling to wall.



Y07-100

Solution with Masonite Beams as a curtain wall.



Y08-100

Installation of Masonite Beams' studs on load-bearing frame made of cross-laminated timber, for example.



Y09-100

Fastening windows and doors in web-reinforced Masonite Beams studs.

Read more and see more building details at www.masonitebeams.se.



Feel free to contact us ahead of your upcoming project. We can then help you to think in a sustainable, resource-efficient and effective manner!



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