



ACTIVE SYSTEM FOR REINFORCING WOODEN FLOORS.

IS IT:

Product

Technology

Equipment

APPLICABLE FOR:

Restoration

Rehabilitation

New Construction

APPLICABLE ON:

1. Foundations and underground structures

2. Vertical structures

3. Horizontal structures and vertical connections

4. Roof and terraces

5. Façade and building envelope

6. Finishes and completion elements

7. Integrated services

8. General strategies for building recovery

Related companies: HERMS

DESCRIPTION

To prevent and control unforeseen deformations in the wood joists.

WHY TO USE

- Loss of free height of only 4 cm
- Easy assembly, no welding or mortar required
- Fast, clean and economical

HOW TO USE AND APPLY

The system consists of the placement of two (2) non-skid plates connected to the bottom face of the beam, one at each end, and a central steel turnbuckle.

The plates are connected to the bottom face of the beam by means of lag bolts and, in addition, to increase the adherence of the assembly, these plates are grooved on their upper face, which gives them an anti-slip character. To further guarantee the adhesion of the plate-beam assembly, impact glue is applied to the plates, which in turn helps in the installation.

Once the plates, which will never cover the total length of the beam, have been placed, the two (2) threaded tensioners are placed, which are adjusted to the final necessary measurement.

This is a system that works connected to the wooden beam, so it requires that the wood is not in poor condition to form the mixed wood-steel element.

1. Position the plate 1 of L=1,500 mm at the end of the wooden beam, placing it as close as possible to the wall.
2. Mark the first and last holes with the tip of the M10x120 bar bolt.
3. Drill the first and last holes, with a $\varnothing 7$ mm drill bit and a depth of 11 cm.
4. Apply adhesive to the entire surface of plate 1.
5. Fasten plate 1 to the wooden beam with the M10x120 bar screws in the two (2) holes drilled.
6. With plate 1 fixed, drill the rest of the holes in the wooden beam.

7. Place the rest of the bar screws in plate 1.
8. Present plate 2 and carry out the same steps 2 to 7 explained above.
9. Once the bar screws of plate 2 are in place, insert the M16 threaded rods in the holes of both plates, so that they are centered with respect to the axis of the wooden beam.
10. Place the nuts on the ends of the threaded rods and tighten with the M24 wrench.

TECHNICAL CHARACTERISTICS

Grooved plate: S275JR +AR UNE EN 10025-2:2004

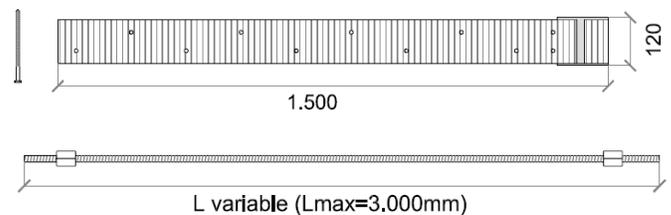
Tensioners: DIN 976 M-16x3000 ZN

Lag bolts: DIN 571 10x120 ZN

Spanner nut: DIN 6334.10 M-16 ZN

COMPONENTS

- 2 grooved flat bars 120x5x1.500 with 11 holes + 22 lag screws 10x120
- 2 variable length tension rods (Lmax=3.000 mm) $\varnothing 16$ + 4 nuts
- 1 impact glue cartridge to assist assembly



RECOMMENDATIONS AND OTHER INFORMATION

It is a system that works connected to the wood beam, so it is necessary that the wood is not in bad conditions to be able to form the mixed wood-steel element. If the wood presents pathologies, such as woodworm, termites or any other pathology that reduces the resistance of the wood, the system cannot be used.

It is very important to analyze the condition of the wood beam before using this system.



EXAMPLES

See video with examples of execution:

<https://www.youtube.com/watch?v=2EIMoh1CMOI>

REFERENCES / SOURCES AND LITERATURE

<https://www.herms.es/madera>

https://irp-cdn.multiscreensite.com/5728d7ae/files/uploaded/2.%20KIT%20TENSOR_Ficha%20Tecnica.pdf

https://irp-cdn.multiscreensite.com/5728d7ae/files/uploaded/1.%20KIT%20TENSOR_Detalles%20Generales.pdf

https://irp-cdn.multiscreensite.com/5728d7ae/files/uploaded/2.%20KIT%20TENSOR_Montaje.pdf

WEBSITE OF THE COMPANY

<https://www.herms.es/>



IMAGES AND CAPTIONS



Fig.1-2: Images where you can see the final result of the application of this reinforcement system in a wooden slab. ©HERMS

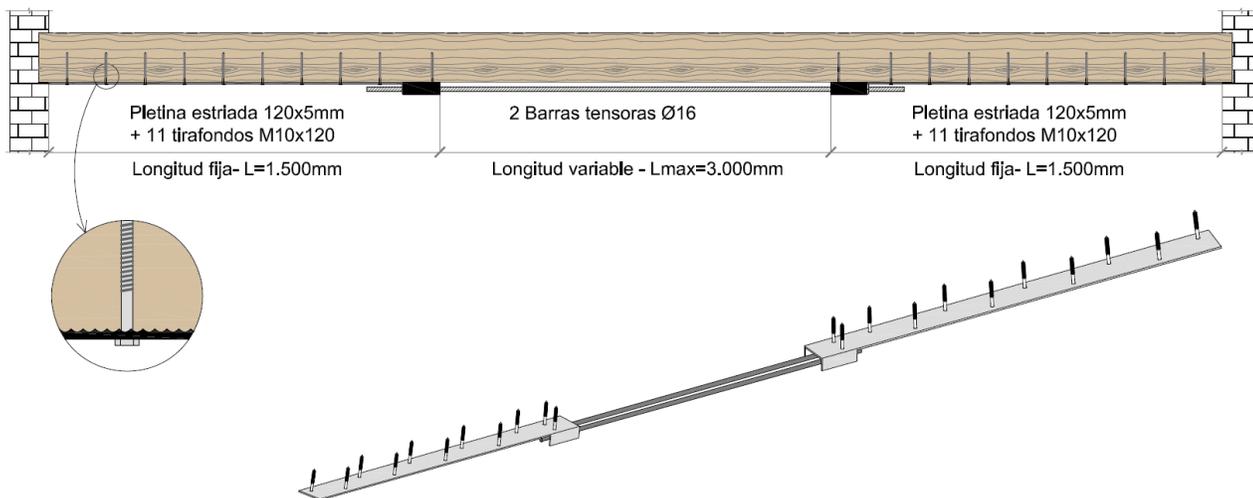


Fig.3: Diagram of the system, used to prevent and control unforeseen deformations in the wood joists. It's composed of 2 main parts: splined plates with lag bolts for fastening to wooden beam (one on each end of the beam), two tensioning bars that connect both plates and are responsible for providing the necessary tension to control the deflection of the beam. ©HERMS



Installation procedure:



Fig.4: Positioning of the plate to locate the boreholes to be drilled.
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Fig.5: Drilling in the wooden beam to facilitate anchoring of the screws.
©HERMS



Fig.6: Apply adhesive to the entire surface of plate. ©HERMS



Fig.7: Fasten plate to the wooden beam with the M10x120 bar screws in the two (2) holes drilled, and drill the rest of the holes. ©HERMS



Fig.8: Continue fastening the rest of the plate to the wooden beam with the M10x120 bar screws in the two. ©HERMS



Fig.9: Once the bar screws of the tow plates are in place, insert the M16 threaded rods in the holes of both plates, so that they are centered with respect to the axis of the wooden beam. ©HERMS



Fig.10: Place the nuts on the ends of the threaded rods and tighten with the M24 wrench. ©HERMS



Fig.11: Image of all the system correctly installed. ©HERMS