



# REPLACEMENT OF UNIDIRECTIONAL ROOFS.

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## 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*

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***Related companies: HERMS***

## DESCRIPTION

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For functional replacement of joists in poor condition.

Reinforcement of floor slabs.

Correction / reinforcement of sagging beams.

## WHY TO USE

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- Fast execution
- Beams made up of sections for easy access and assembly
- Generates very little debris
- Active and effective functional replacement of the old beam
- Economical solution
- Minimal headroom reduction
- In case of failure of the old beam, the system continues to carry all loads.

## HOW TO USE AND APPLY

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Functional replacement of ceramic slabs, Catalan vaults, concrete vaults, wood, concrete or metal joists and cantilevers.

### HW:

1. Repoint the area of the wall where the post-tensioning supports are to be placed, until the brick or resistant element is found.
2. Stake out the support plate, bearing in mind that the height of the support tray will depend on the deflection of the beam. Leave an extra 1 cm margin in the height, since a play of up to 3 cm is then allowed thanks to the post-tensioning screws.
3. Once the four holes have been marked, drill the holes (Hollow or poor quality brick: 14mm drill bit; Solid wall: 16mm drill bit).
4. Clean holes of residual dust with the help of a blower.

5. Inject the resin with the applicator gun. In the case of a hollow or poor quality wall, place the sieves inside it.
6. In the grooved area of the support, on the back of the support, apply the same resin used for the dowels. This is important to improve the strength of the assembly.
7. Place the studs and support and wait about 10/15 min until the resin is hard and resistant. Once the resin has set, place the washers and tighten the nuts.
8. It is possible to disassemble the tray from the support to allow the profile to pass through by loosening the fixing screws (M10x50).
9. Assemble the HW profile sections.
10. Insert the M20 screws to join the sections. Important: place DOUBLE NUT.
11. Tighten the fixing screws of the bolted joint. You can also proceed by placing one section on one support and the other section on the other support and place the fixing screws afterwards, once the beam is supported.
12. Support one end on the post-tensioning support.
13. Support the other end of the corresponding post-tensioning support.
14. With the help of a trowel, place the mortar on the wings of the "U" until it reaches the mortar bed. IT IS NOT NECESSARY TO FILL THE INSIDE OF THE "U" WITH MORTAR.
15. Once the mortar has been placed on the entire surface of the wings, finish lifting it with the post-tensioning screws.

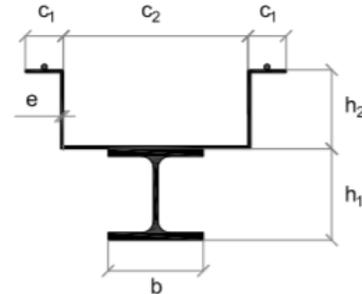
### IPE Extensible:

1. Repoint the area of the wall where the post-tensioning supports are to be placed, until the brick or resistant element is found.
2. Stake out the support plate, bearing in mind that the height of the support tray will depend on the deflection of the beam. Leave an extra 1 cm margin in the height, since a play of up to 3 cm is then allowed thanks to the post-tensioning screws.

3. Once the four holes have been marked, drill the holes. (Hollow or poor quality brick: 14mm drill bit; Solid wall: 16mm drill bit).
4. Clean holes of residual dust with the help of a blower.
5. Inject the resin with the applicator gun. In the case of a hollow or poor quality wall, place the sieves inside it.
6. In the grooved area of the support, on the back of the support, apply the same resin used for the dowels. This is important to improve the strength of the assembly.
7. Place the studs and the support and wait about 10/15 min until the resin is hard and resistant. Once the resin has set, place the washers and tighten the nuts.
8. It is possible to remove the tray from the support to allow the profile to pass through by loosening the fixing screws (M10x50).
9. Assemble the sections of the IPE Extensible profile.
10. Tighten one of the fastening screws of the central section and leave the other end untightened to finish adjusting the reinforcement profile to the required size.
11. If there are partitions, pass one section through one side of the partition and place the other section on the other side of the partition. In this way the assembly of the two sections is carried out with the profile resting on the partition wall.
12. Support each end of the reinforcement profile on the corresponding post-tensioning brackets. Tighten the other fixing screw of the central section and with the help of a trowel place the mortar on top of the reinforcement.
13. Once the mortar has been placed on the entire surface of the wings, finish lifting it with the post-tensioning screws of the supports.

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[https://irp-cdn.multiscreensite.com/5728d7ae/files/uploaded/1.%20HW\\_Detalles%20Generales\\_Madera.pdf](https://irp-cdn.multiscreensite.com/5728d7ae/files/uploaded/1.%20HW_Detalles%20Generales_Madera.pdf)

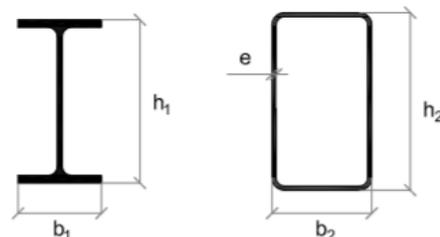


	b	h <sub>1</sub>	h <sub>2</sub>	c <sub>1</sub>	c <sub>2</sub>	e
HW100	100	96	83	40	200	3
HW120	120	120	83	40	200	3
HW140	140	140	83	40	200	3
Dimensiones en mm						

#### IPE Extensible:

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	h <sub>1</sub>	b <sub>1</sub>	h <sub>2</sub>	b <sub>2</sub>	e
IPE EXT 140	140	73	154	88	4
IPE EXT 160	160	82	174	97	4
IPE EXT 180	182	91	198	108	5
Dimensiones en mm					

## TECHNICAL CHARACTERISTICS

HW:

	P kg/m	A cm <sup>2</sup>	I <sub>x</sub> cm <sup>4</sup>	W cm <sup>3</sup>	Coef m m <sup>-1</sup>	Sp m <sup>2</sup> /t
IPE 140	12,90	16,40	541	77	291	42,71
IPE 160	15,80	20,10	869	109	269	39,43
IPE 180	18,80	23,90	1320	146	253	37,13

	P kg/m	A cm <sup>2</sup>	I <sub>x</sub> cm <sup>4</sup>	W cm <sup>3</sup>	Coef m m <sup>-1</sup>	Sp m <sup>2</sup> /t
TUBO 140	14,26	18,13	571	74	211	32,67
TUBO 160	16,27	20,69	840	96	210	32,56
TUBO 180	22,84	29,04	1506	152	169	26,11

## RECOMMENDATIONS AND OTHER INFORMATION

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N/A

## EXAMPLES

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See figures 1 thru 9 at the end of this sheet.

## REFERENCES / SOURCES AND LITERATURE

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### HW:

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<https://www.youtube.com/watch?v=darBaCNAK78>

### IPE Extensible:

[https://irp-cdn.multiscreensite.com/5728d7ae/files/uploaded/3.%20IPE%20EXT\\_Instrucciones%20Montaje.pdf](https://irp-cdn.multiscreensite.com/5728d7ae/files/uploaded/3.%20IPE%20EXT_Instrucciones%20Montaje.pdf)

[https://www.youtube.com/watch?v=U1s\\_AsFZoR8](https://www.youtube.com/watch?v=U1s_AsFZoR8)

## WEBSITE OF THE COMPANY

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



## IMAGES AND CAPTIONS

### HW:

SISTEMA HERMS HW-100/HW-120. SECCIÓN LONGITUDINAL  
ESCALA 1/100 (DIN A3)

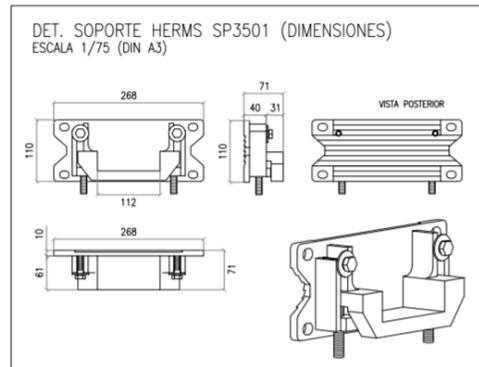
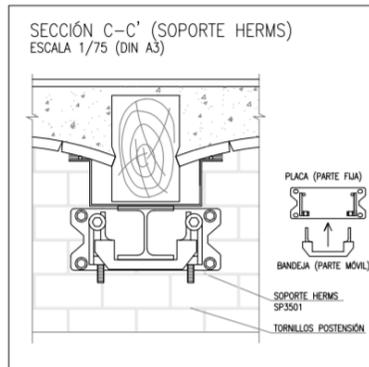
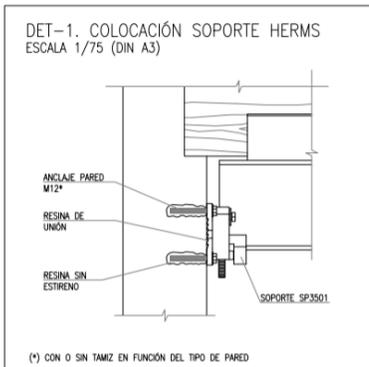
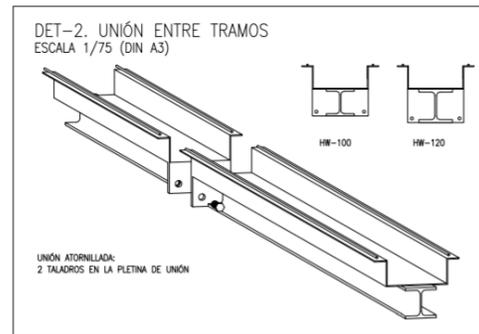
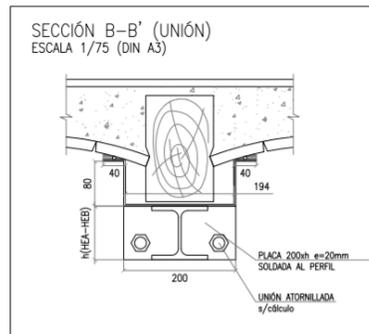
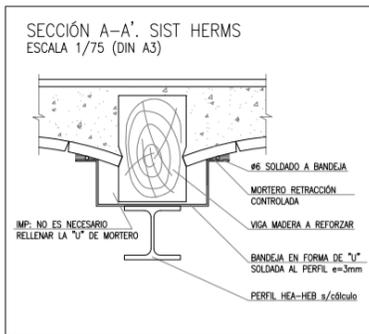
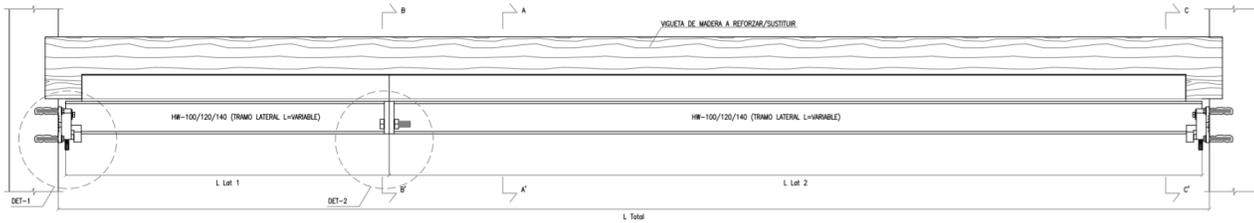


Fig.1: Drawings and details of the Herms HW system. ©HERMS

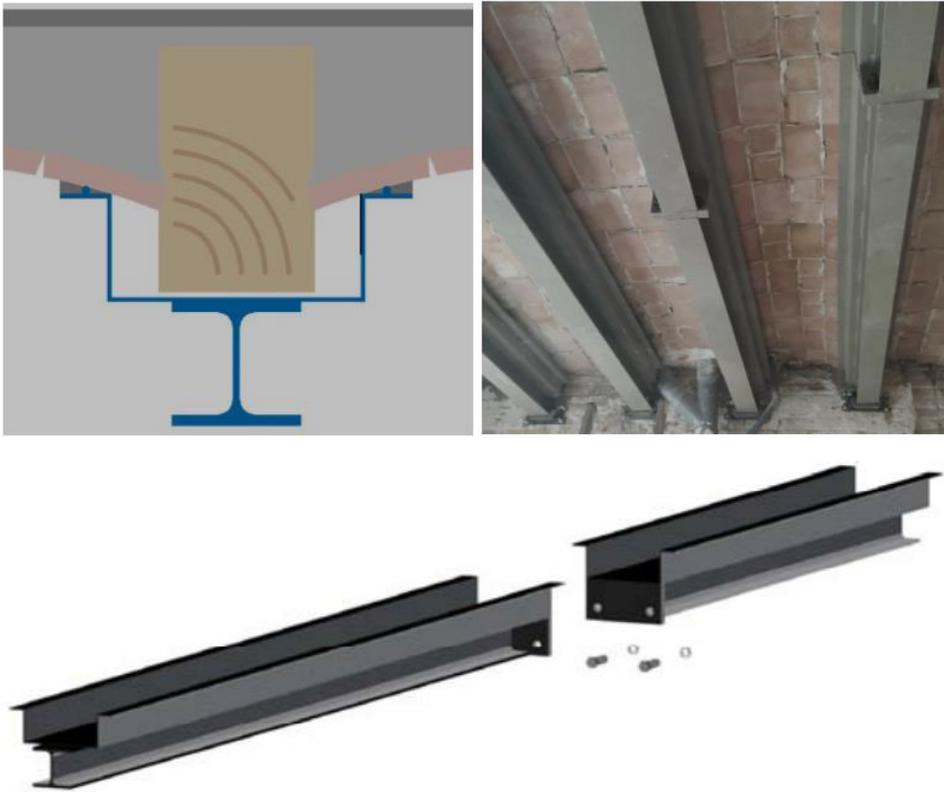


Fig.2-4: Diagram and picture of an executed example of the Herms HW system. ©HERMS

**IPE Extensible:**



Fig.5-6: Diagram and picture of an executed example of the Herms IPE Extensible system. ©HERMS

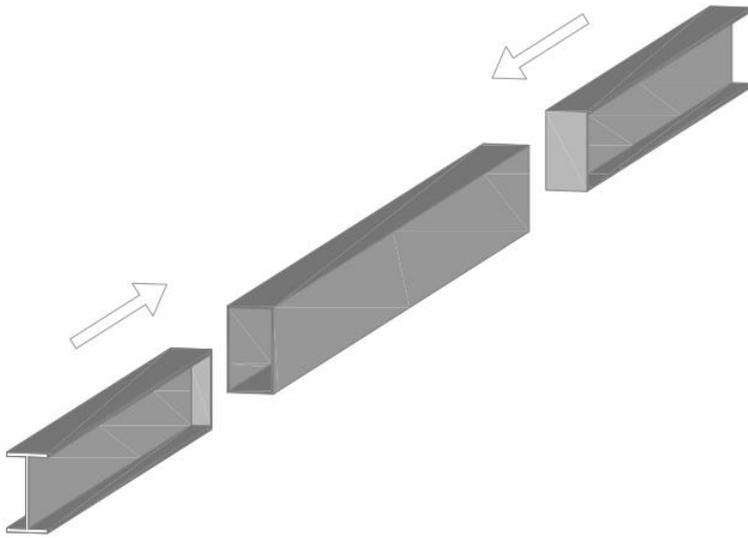
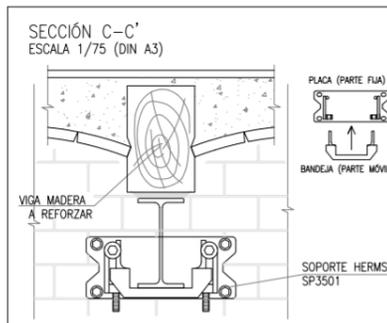
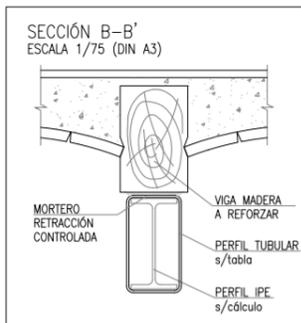
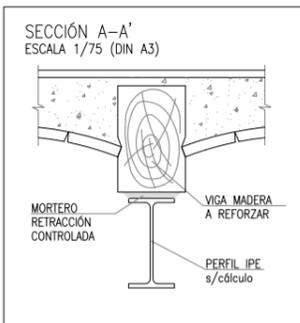
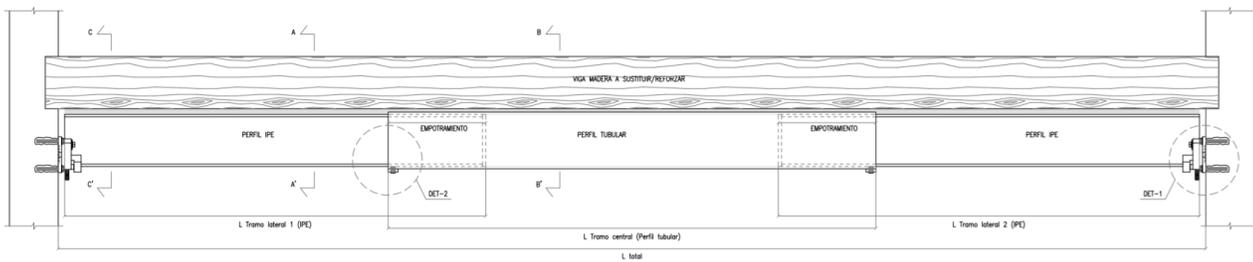


Fig.7: Diagram of the Herms IPE Extensible system placement. ©HERMS

SISTEMA HERMS-IPE EXTENSIBLE. SECCIÓN LONGITUDINAL  
ESCALA 1/100 (DIN A3)



DIM. PERFIL TUBULAR

IPE	H(mm)	B(mm)	e(mm)
IPE 140	150	85	4
IPE 160	170	94	4
IPE 180	192	105	5

Fig.8: Drawings and details of the Herms IPE Extensible system. ©HERMS

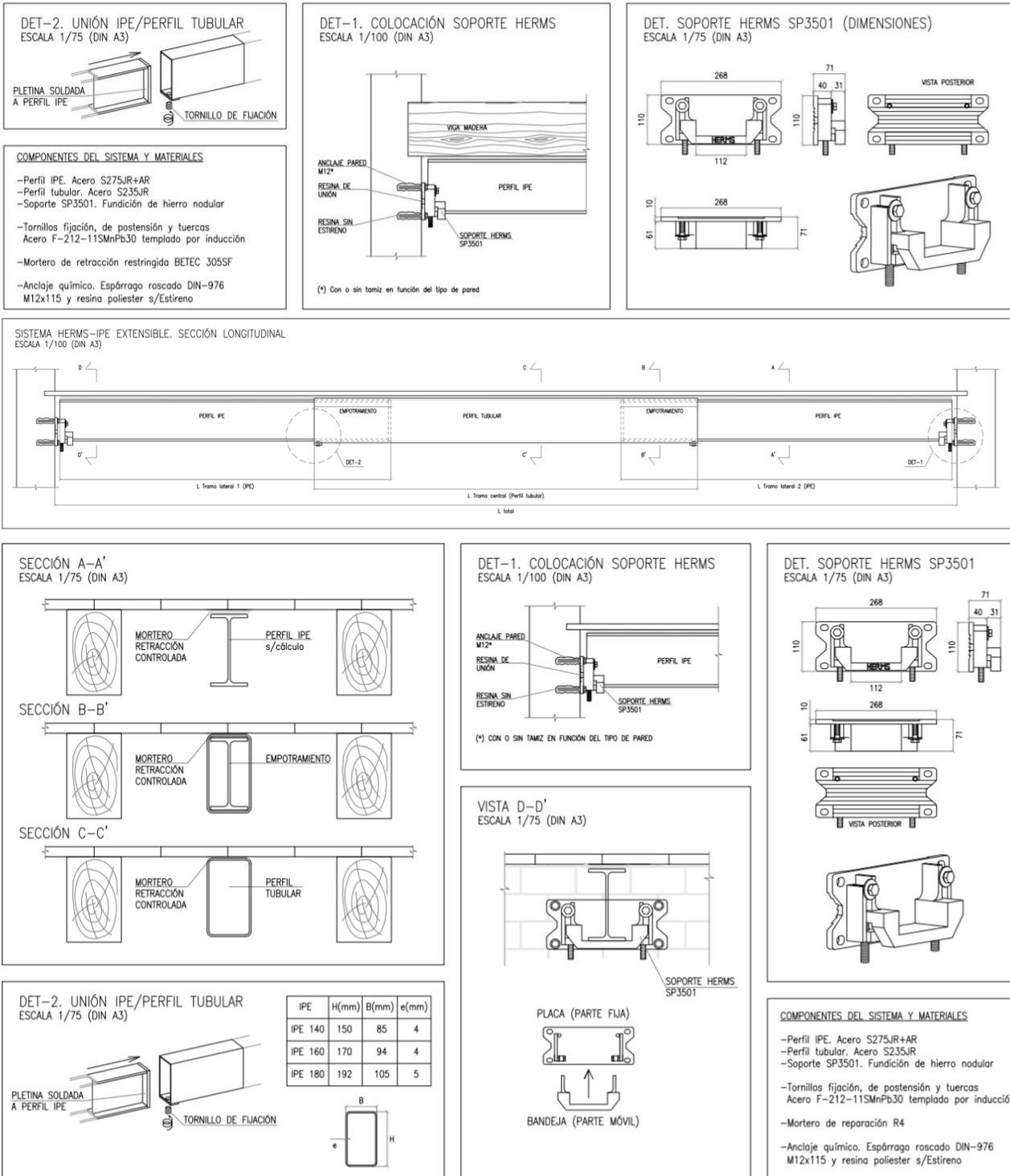


Fig.9: Drawings and details of the Herms IPE Extensible system. ©HERMS