

HES
Heavy Engineered Restraint Strap

A direct replacement for traditional restraint straps, the innovative design of these lightweight straps allows ease of handling and installation whilst maintaining the structural strength and robustness of much heavier weight types.

The HES (heavy engineered strap) replace the traditional heavy (30 x 5mm) restraint straps in roof and floor construction.

Reduced thickness allows the HES strap to span the bottom chords of trusses and over floor joists without the need for notching.

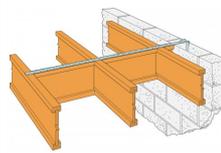
HES straps are less than 40% of the weight, quicker to fit, and overcome many fixing problems associated with traditional heavy straps.

- Formed edge design gives additional strength on bend
- Quicker to install - can fit over top of floor joists and truss bottom chords
- Easier to course with blockwork
- No need to notch joists
- Complies with BS EN 845-1

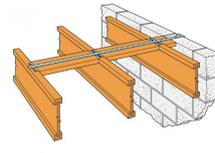
Features

Material

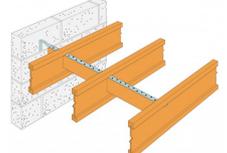
- Pre-galvanised mild steel - Z600



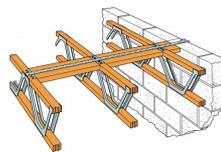
1. Installation - Floor



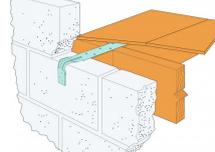
2. Installation - Floor



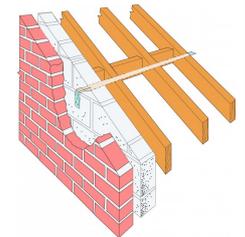
3. Installation - Floor



4. Installation - Floor



5. Installation - Floor



HES strap fits underneath the rafter and noggins, as per NHBC/TRA detail. In all instances fix HES using 8 No. 3.75 x 30mm square twist nails.

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Technical Data

HES - Product Dimensions

References	Installation Type	Dimensions [mm]					Holes			Weight [kg]
		Overall Length	A	B1	B2	t	Flange B2	Flange B1		
							Ø4.1	Ø4.1	Ø6.1	
HES06B10	Horizontal	600	38	500	100	1.2	3	8	8	0.22
HES08B10	Horizontal	800	38	700	100	1.2	3	12	12	0.28
HES10B10	Horizontal	1000	38	900	100	1.2	3	16	16	0.35
HES12B10	Horizontal	1200	38	1100	100	1.2	3	20	20	0.42
HES15B10	Horizontal	1500	38	1400	100	1.2	3	26	24	0.52

HES Performance Values

References	Fasteners			Characteristic Load [kN]
	Masonry Wall	Floor Joist or Rafter	Wall Plate	
HES	-	8 - N3.75x30	-	8

Installation

Installation

Horizontal strap installation

- Approved Document A of the Building Regulations requires lateral restraint to be provided at each floor at a maximum of 2 metre centres
- Restraint straps “perpendicular” to the floor joists are required to be held tight against the masonry and fixed across the first 3 joists
- Restraint straps “parallel” to the floor joists are required to be held tight to the masonry and be at least 1200mm long
- The characteristic tensile strength for horizontal restraint straps should not be less than 8 kN

Installation - Floor

Horizontal lateral restraint straps should be spaced not more than 2m centres and attached to at least

3 timber members through the use of noggings and packing.

Attach to timber members using a minimum of 8 No 3.75 x 30mm square twist nails. The bend length should be a minimum of 100mm and should be positioned at the centre of an uncut block or brick.

The downturn of strap is to be held tight against the cavity face of the inner leaf of blockwork.

Installation - Roof

1. Fixing to Solid Noggings

- Straps to be installed at not more than 2m centres (or 1.25m where appropriate) along pitch of gable end.
- Ensure the position of the straps coincides with the block bed joint.
- Install HES or H strap to underside of solid noggings. Noggings to be fixed horizontally to avoid twisting of the restraint straps. (1)
- The downturn of strap is to be held tight against the cavity face of the inner leaf of blockwork (2), preferably located and bedded on a substantial piece of blockwork, i.e. over the centre of a full block, with a single cut block over the strap. (3)
- Fix straps to noggings/trusses with 8 No 3.75 x 30mm square twist nails, evenly distributed along the length of the strap.
(For NHBC warrantied buildings, in accordance with NHBC Standards 2017, section 7.2.8, 4 No 50mm (minimum) x 4mm steel screws or 4 No 75mm x 4mm round wire nails, with one fixing into the third rafter, shall be used instead of the square twist nails).
- Strap to be of sufficient length to be fixed to a minimum of three trusses.

2. Fixing to Longitudinal Binder to Truss Web

- Straps to be installed at not more than 2m centres (or 1.25m where appropriate) along pitch of gable end
- Install HES or H strap on the 25 x 100mm longitudinal Web bracing (1)
- Where the position of the strap does not coincide with an existing longitudinal binder, then the strap may be fixed to an additional 25 x 100mm binder, as shown in the detail below. The binder is to be fixed over four trusses and nailed twice to each rafter with 3.35 x 65mm round wire nails.
- The downturn of strap is to be held tight against the cavity face of the inner leaf of blockwork (2), preferably located on the full block.
Notch the blocks to accommodate the twist of the strap and ensure notch is fully mortared.
- Fix straps to bracing with 8 No 3.75 x 30mm square twist nails, evenly distributed along the length of the strap (For NHBC warrantied buildings, in accordance with NHBC standards 2017, section 7.2.8, 8 No 25mm x 4mm steel screws shall be used instead of the square twist nails).
- Strap to be of sufficient length to be fixed to a minimum of three trusses.

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3. Fixing to Longitudinal Binder to Truss Rafter

- Straps to be installed at not more than 2m centres (or 1.25m where appropriate) along pitch of gable end.
- Install HES or H strap on the 25 x 100mm longitudinal Rafter bracing (1)
- Where the position of the strap does not coincide with an existing longitudinal binder, and block bed joint, then the strap can be fixed to an additional 25 x 100mm binder. The binder is to be fixed over four trusses and nailed twice to each rafter with 3.35 x 65mm round wire nails.
- Ensure the position of the additional binder and strap coincide with the block bed joint
- The downturn of strap is to be held tight against the cavity face of the inner leaf of blockwork (2), preferably located and bedded on a substantial piece of blockwork, i.e. over the centre of a full block, with a single cut block over the strap (3) (notch the block to accommodate the twist of the strap and ensure notch is fully mortared).
- Fix straps to bracing with 8 No 3.75 x 30mm square twist nails, evenly distributed along the length of the strap (For NHBC warranted buildings, in accordance with NHBC Standards 2017, section 7.2.8, 8 No 25mm x 4mm steel screws shall be used instead of the square twist nails).
- Strap to be of sufficient length to be fixed to a minimum of three trusses.

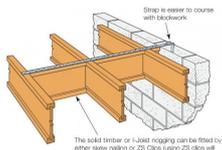
4/4a. Vertical Application

Fix LES or L strap to wall plate with 3 No 3.75 x 30mm square twist nails and to masonry with 5 No 5.5 x 50mm wood screws, plugged and screwed into masonry.

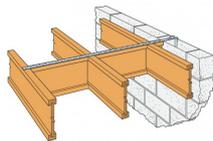
The lowest fixing should be located within 150mm of the bottom of the vertical strap.

Where L strap is fixed to truss, install with 3.75 x 30mm square twist nails, quantity depending on required uplift values.

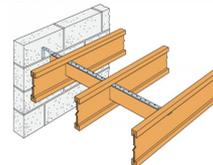
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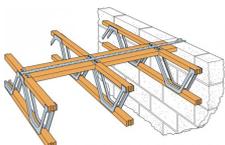
Installation - Floor (1)



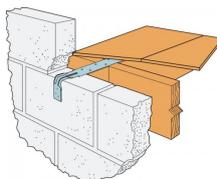
Installation - Floor (2)



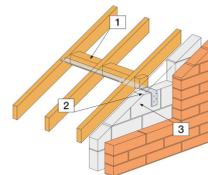
Installation - Floor (3)



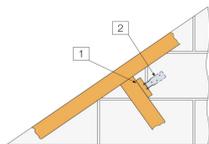
Installation - Floor (4)



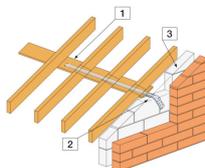
Installation - Floor (5)



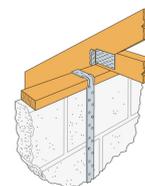
Installation - Roof (1)



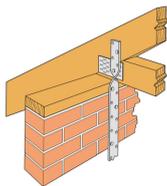
Installation - Roof (2)



Installation - Roof (3)



Installation - Roof



Installation - Roof

