Technical Sheet

HES

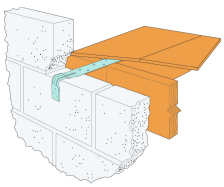
Heavy Engineered Restraint Strap

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.

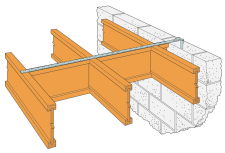
- Formed edge design gives additional strength on bend
- Quicker to install - can fit over top of floor joists and truss bottom chords
- Easier to course with blockwork
- No need to notch joists
- Complies with BS EN 845-1



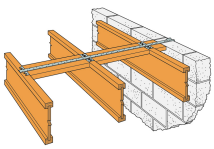




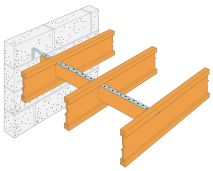
Horizontal Applications - Floors - Solid Joists & Noggings



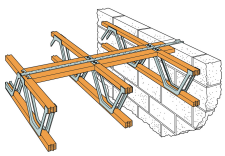
Horizontal Application - Floors - I-Joists with I-Joist Noggings



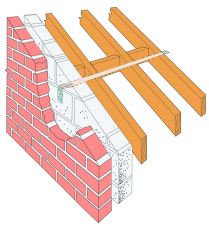
Horizontal Application - Floors - I-Joists with Solid Noggings



Horizontal Application - Floors - Underneath I-Joist Top Flange onto Solid Noggings



Horizontal Application - Floors - Metal Web Joists with Solid Noggings



Features

Material

- Pe-galvanised mild steel - Z600

Technical Sheet

HES
Heavy Engineered Restraint Strap

Technical Data

HES - Product Dimensions

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

HES Performance Values

Reference	Masonry capacity		
	Number of Fasteners		Characteristic Capacity[N]
	Masonry Wall	Floor Joist or Rafter	Characteristic Load[kN]
HES	-	8 - N3.75x30	8

Installation

Horizontal Strap Installation - General Notes

- 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

Horizontal Strap Installation to Floors

- 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.

Horizontal Straps - Roofs - 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.

Horizontal Straps - Roofs - Fixing to Longitudinal Truss Binder / Additional Longitudinal Binder (Fixed 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.

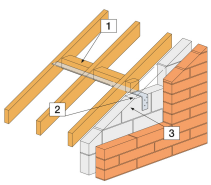
Horizontal Straps - Roofs - Fixing to Longitudinal Truss Binder (Fixed to Truss Rafter)

- Straps to be installed at not more than 2m centres (or 1.25m where appropriate) along pitch of gable end.

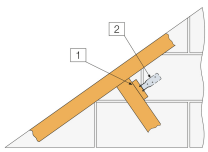
- Install HES or H strap on the 25 x 100mm longitudinal Rafter bracing (1)
- Where the position of the strap does not coincide with an existing longitudinal binder, and block bed joint, then the strap can be fixed to an additional 25 x 100mm binder. The binder is to be fixed over four trusses and nailed 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 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.

Horizontal Straps - Roofs - Fixing to Longitudinal Truss Binder / Additional Longitudinal Binder (Fixed to Truss Ceiling)

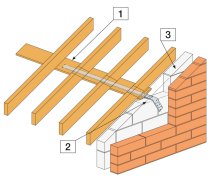
- Straps to be installed at not more than 2m centres
- Where the position of the strap does not coincide with an existing longitudinal binder, then the strap may be fixed to an additional 25 x 100mm binder (1) The binder is to be fixed over four trusses and nailed twice to each rafter with 3.35 x 65mm round wire nails.
- Ensure the position of the additional binder and strap coincide with the block bed joint. Where this is not possible, insert a cut block to suit the strap location (3).
- The downturn of strap (2) is to be held tight against the cavity face of the inner leaf of blockwork, preferably located and bedded on a substantial piece of blockwork, i.e.over the centre of a full block.
- 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).
- The strap is to be of sufficient length to be fixed to a minimum of three trusses



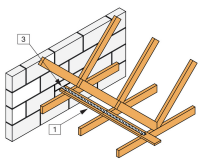
Horizontal Strap - Roof - Fixed to Solid Noggings



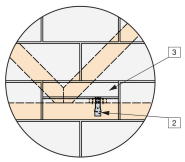
Horizontal Strap - Roofs - Fixed to Truss Web



Horizontal Strap - Roofs - Fixed to Truss Rafter



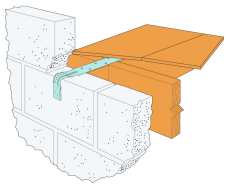
Horizontal Straps - Roofs - Fixed to Ceiling Binder



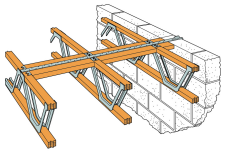
Horizontal Straps - Roofs - Cut Block

Technical Sheet

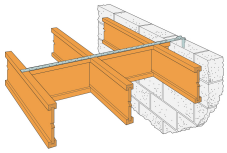
HES
Heavy Engineered Restraint Strap



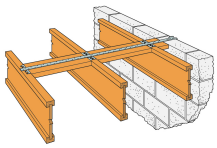
Horizontal Applications - Floors - Solid Joists & Noggings



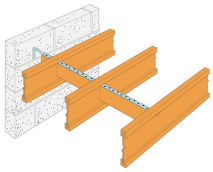
Horizontal Application - Floors - Metal Web Joists with Solid Noggings



Horizontal Application - Floors - I-Joists with I-Joist Noggings



Horizontal Application - Floors - I-Joists with Solid Noggings



Horizontal Application - Floors - Underneath I-Joist Top Flange onto Solid Noggings

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