

Masonry to Masonry Wall Ties

These products act to secure two leaves of a cavity wall to each other, allowing them to act as one structurally. A cavity tie usually incorporates some mechanism, (usually a change of shape) to discourage moisture moving across the tie. Most cavity ties are available with a dedicated clip to secure insulation (usually in sheet form) within the cavity.



Product

VST1 Heavy Duty Formed Safety Tie

The VST1 tie range has a Multidrip feature to prevent moisture from traveling across the cavity. Its categorisation as a Type 1 wall tie means the VST1 tie is suitable for most building heights and geographical locations. They meet the requirements of Part E of the Building Regulations for a Type B tie, making them suitable for use in external walls. These ties are rigid and should not be specified where large differential movements are expected or low-strength masonry units are in use.

Code	Size	Cavity	Units
VST1-200-STST	200mm	50-75mm	250 Box
VST1-225-STST	225mm	76-100mm	250 Box
VST1-250-STST	250mm	101-125mm	250 Box
VST1-275-STST	275mm	126-150mm	250 Box
VST1-300-STST	300mm	150-175mm	250 Box
VST1-325-STST	325mm	176-200mm	250 Box
VST1-350-STST	350mm	201-225mm	250 Box

VST1s come supplied with 50 reusable yellow safety end caps per pack. Used to cover protruding end, remove when building external masonry.

Testing

Tested as a Type 1 (Strength) tie.

The VST1 wall tie range 200mm to 350mm was tested in tension and compression over a nominal cavity width of up to 225mm in accordance with BS EN 846-6 Methods of Test of Ancillary Components for Masonry. Part 5; Determination of tensile and compressive load capacity and load displacement characteristics of wall ties (Couplet Test).

Results

The VST1 wall tie exceeds the performance criteria for a Type 1 tie in line with PD6697: 2019, in M2 (iv) mortar.

	Maximum Declared Value at Ultimate load (N)	
	Tension	Compression
200mm	2939	5146
225mm	2939	5146
250mm	2939	5146
275mm	3150	2790
300mm	3150	2790
325mm	3150	2410
350mm	3150	2510

Tested as a Type B (Sound) tie (for external walls where a Type A is not suitable)

VST1 250mm long stainless steel wall ties were tested over a working cavity width of 100mm for dynamic stiffness to a method stated in BRE information paper IP3/01 dynamic stiffness wall ties used in masonry cavity walls: measurement procedure.

Results

At a standard tie density of 2.5 ties/m² the VST1 250mm long stainless steel tie at a 100mm working capacity achieved a measured dynamic stiffness of 86.3 MN/M³. This meets the requirements of Part E of the Building Regulations for a Type B tie in external walls which states that a masonry cavity wall tie can only be used if the measured dynamic stiffness is less than 113MN/M³.

Length	Cavity	No. (ties/m ²)	Measured dynamic stiffness MN/m ³
250mm	100mm	2.5	86.3

Embedment details

BPC recommends a design embedment of 62.5mm with each tie covering a range of 25mm (see size guide on the previous page) PD6697: 2019 states a minimum embedment of 50mm which includes site tolerance.

BPC confirms that the VST1 wall ties exceed the performance criteria for a Type 1 Tie at 50mm embedment in M2 mortar.

Additional Information

Material–Manufactured from grade 304 stainless steel.

Behaviour in relation to fire–Non combustible (as defined in the national Building Regulations).

Durability–Excellent corrosion resistance and a service life of not less than 60 years.

Compliance–Tested as Type B (sound) and as Type 1 (strength) to BS EN 845-1.