

# **VST1** Heavy Duty Formed Safety Tie

Data sheet
Issue Date:

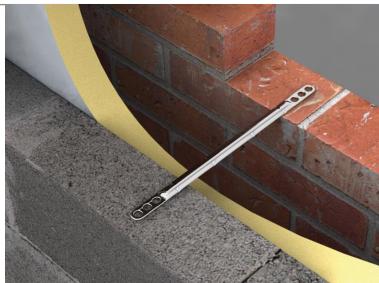
August 2024

# 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.



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## **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/m²)	Measured dynamic stiffness MN/m <sup>3</sup>
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).

 $\label{prop:control} \mbox{Durability-Excellent corrosion resistance and a service life of not less than 60 years.}$ 

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

