

Wall Ties and Restraint Fixings

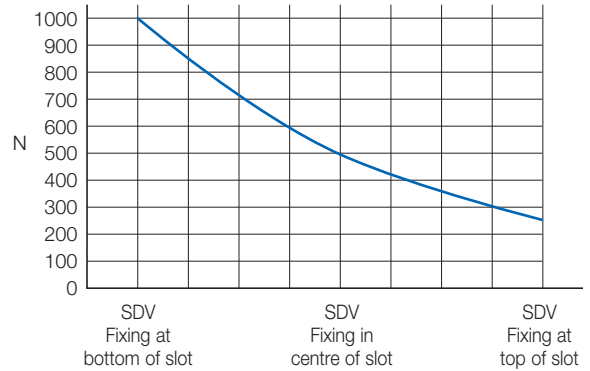
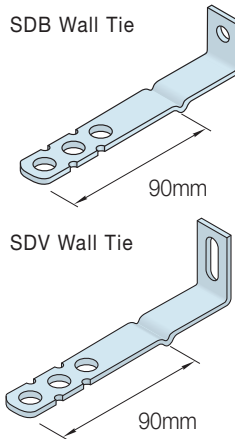
FRAME CRAMPS AND CHANNEL TIES

Frame cramps can be fixed to concrete, steelwork or masonry and have a single 7mm diameter hole or an 8mm x 30mm vertical slot. Ancon M6 Single Expansion bolts are recommended for fixing to concrete, set screws or self-drilling screws for steelwork, and suitable plugs and screws for fixing to masonry.

Poor substrates will limit the capacity of frame cramps and site testing may be advisable in some cases. The performance will also be determined by the position of the fixing. SDV ties fixed to steelwork or concrete at the lowest point of the slot will have a safe working load of approximately 1kN. The capacity will reduce as the fixing is moved further away from the bend and greater movement must be expected than with other types of wall tie. Ancon SDB Frame Cramps have a safe working load of approximately 500N, comparable to the load of an SDV when fixed in the centre of the slot.

Thermal Break

Ancon Frame Cramps can now be supplied with Thermal Breaks to be located between the upstand and the structural frame. They are manufactured from a durable fibre-reinforced thermoset plastic which has a thermal conductivity of just 0.3 W/mK.

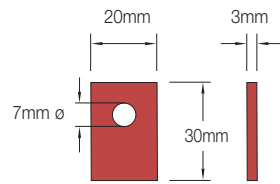


Recommended Safe Working Loads for 20 x 2.5mm Section Frame Cramps

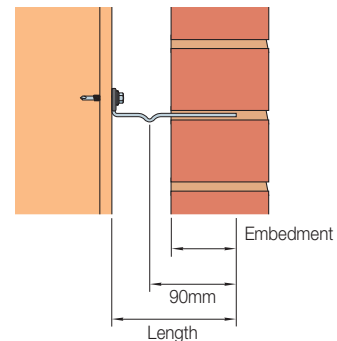
Recommended Lengths of Frame Cramps and Cast-in Channel Ties

Cavity Width (mm)	Length of Wall Tie (mm)	Frame Cramp/Channel Tie
20-44	100	SPB/SP21
45-69	125	SDB/SD21
70-94	150	SDB/SD21
95-119	175	SDB SD21
120-144	200	SDB/SD21
145-169	225	SDB/SD21

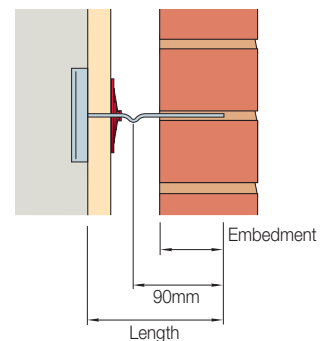
Note: This table excludes Ancon Fastrack and Ancon 25/14 Channels. Frame cramps should have a minimum embedment of 50mm in the outer leaf. Taking site tolerances into account, Ancon suggests tie lengths which achieve a greater embedment.



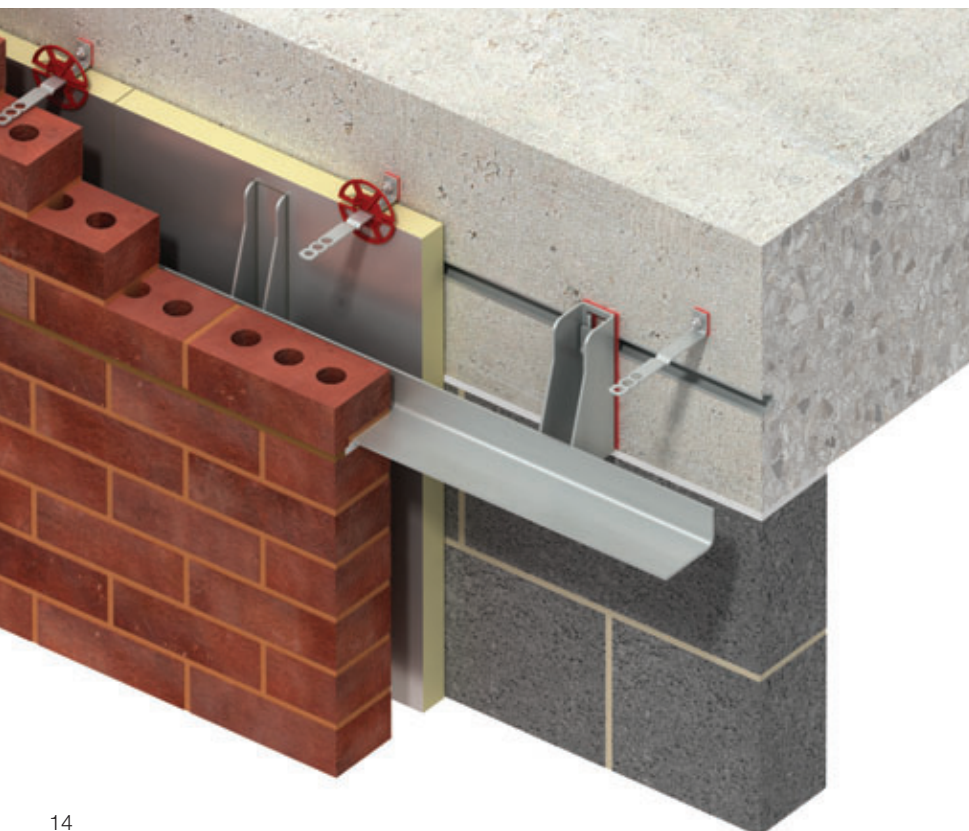
Frame Cramp Thermal Break



SDB Wall Tie Fixed to Steel with Self-Drilling Screw

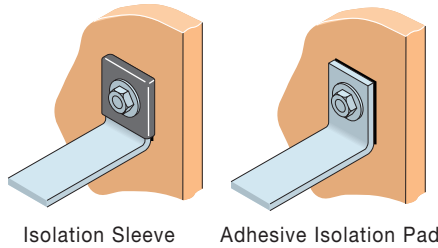


SD21 Wall Tie Fixed into 21/18 Omega Channel



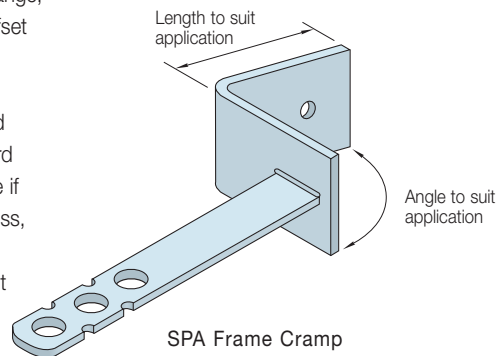
Isolation

Ancon isolation sleeves and pads are supplied blank for use with self-drilling screws to isolate stainless steel frame cramps from mild steel. Self-adhesive isolation pads are also available for __B (20 x 30mm) and __V (25 x 50mm) referenced frame cramps.

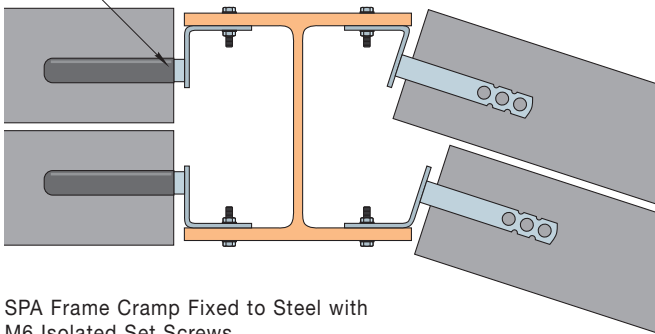


SPA Frame Cramp

Where masonry is in line with a column flange, frame cramps can be supplied with an offset angle section instead of an upstand. This angle allows the mechanical fixing to be suitably located. These ties are referenced SPA. They feature a 7mm hole as standard and can be used with a debonding sleeve if required at a movement joint. The thickness, size and shape of the angle section are designed to suit each application. Contact Ancon's Technical Department for more information.



Ancon SPA frame cramp at 450mm vertical centres



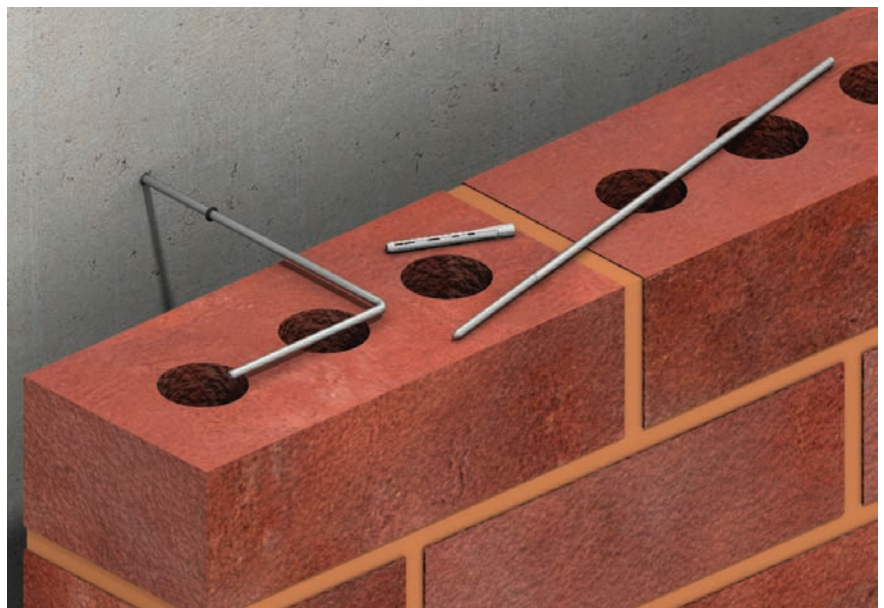
SPA Frame Cramp Fixed to Steel with M6 Isolated Set Screws

Ancon HiT - Hammer-in Tie

The Ancon HiT fixes masonry to concrete, dense blocks ($\geq 7\text{N/mm}^2$), non-perforated brick or hard stone. It can reduce the variety of tie lengths required on site and speed the rate of construction.

The HiT is available in a standard length of 310mm that is bent on site with a special installation tool to suit all cavities up to 150mm. Unlike conventional frame cramps it does not require a mechanical fixing, but is hammered into a plug.

The Ancon HiT meets the requirements of PD 6697 as a Type 2 tie. A neoprene 'O' ring must be installed on the tie to prevent moisture crossing the cavity.



Ancon Hammer-in Tie (310mm)

PRE-FIXING AIDS

The practice of pre-fixing frame cramps in advance of masonry can accelerate the speed of construction and provides an opportunity to check that wall restraints have been located correctly and are securely fixed.

Ancon Gauge Tape (Pre-fix Patent 2 256 223)

Gauge Tape illustrates the standard 225mm brick/block gauge and the fixing position of frame cramps. It is applied directly to the structural frame (steel, concrete, timber or masonry) to facilitate the pre-fixing of frame cramps and to maintain accurate masonry coursing.

Ancon ISO-TW Washer

The ISO-TW washer enables Ancon slot-ended frame cramps to be vertically adjusted within the 30mm range of the slot to suit the exact location of mortar joints without affecting the integrity of the fixing. In addition, this washer prevents bi-metallic corrosion by separating the frame cramp from the structural frame and fixing screw.



Ancon ISO-TW and Gauge Tape