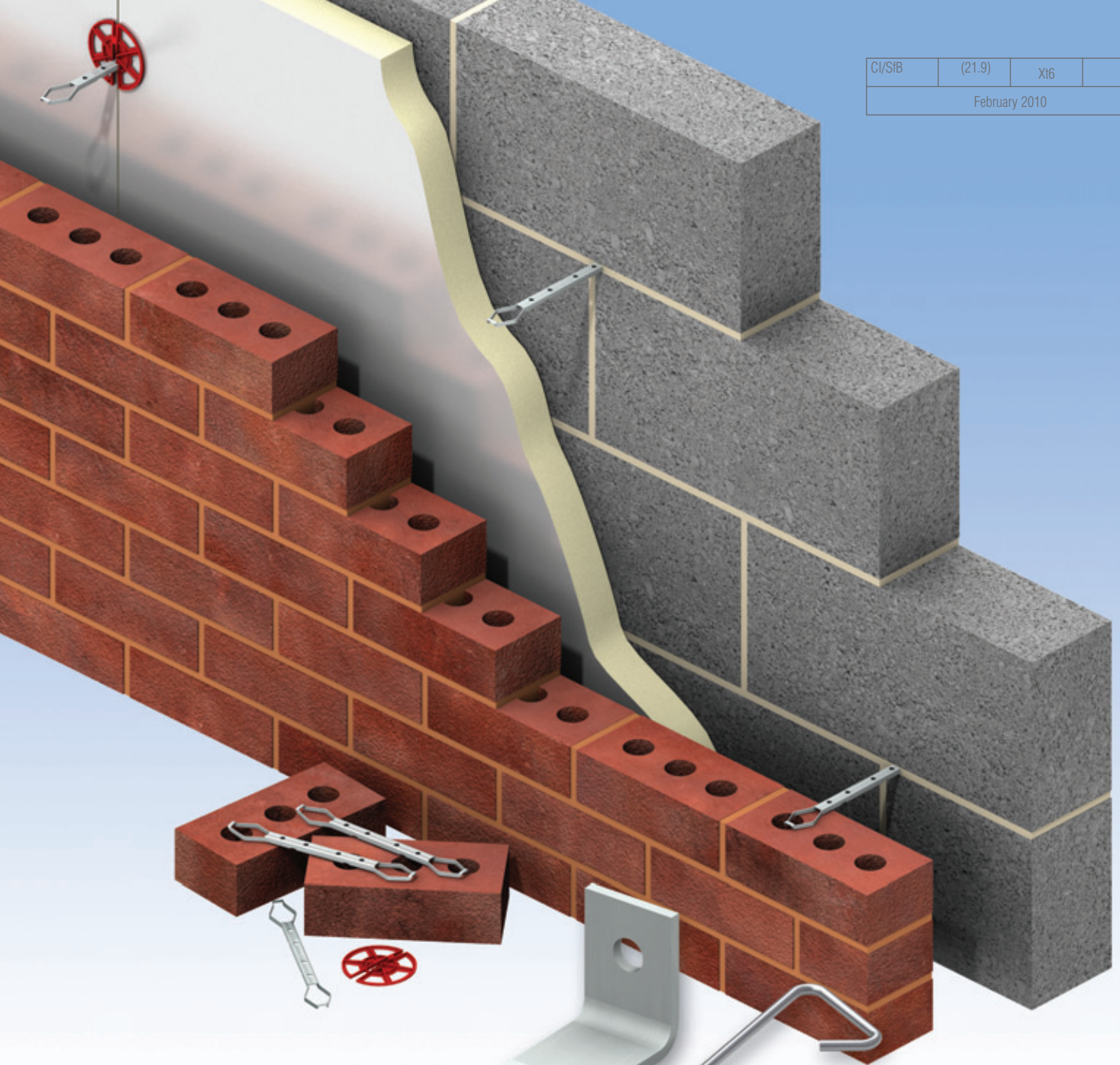


CI/SIB	(21.9)	X16	
February 2010			



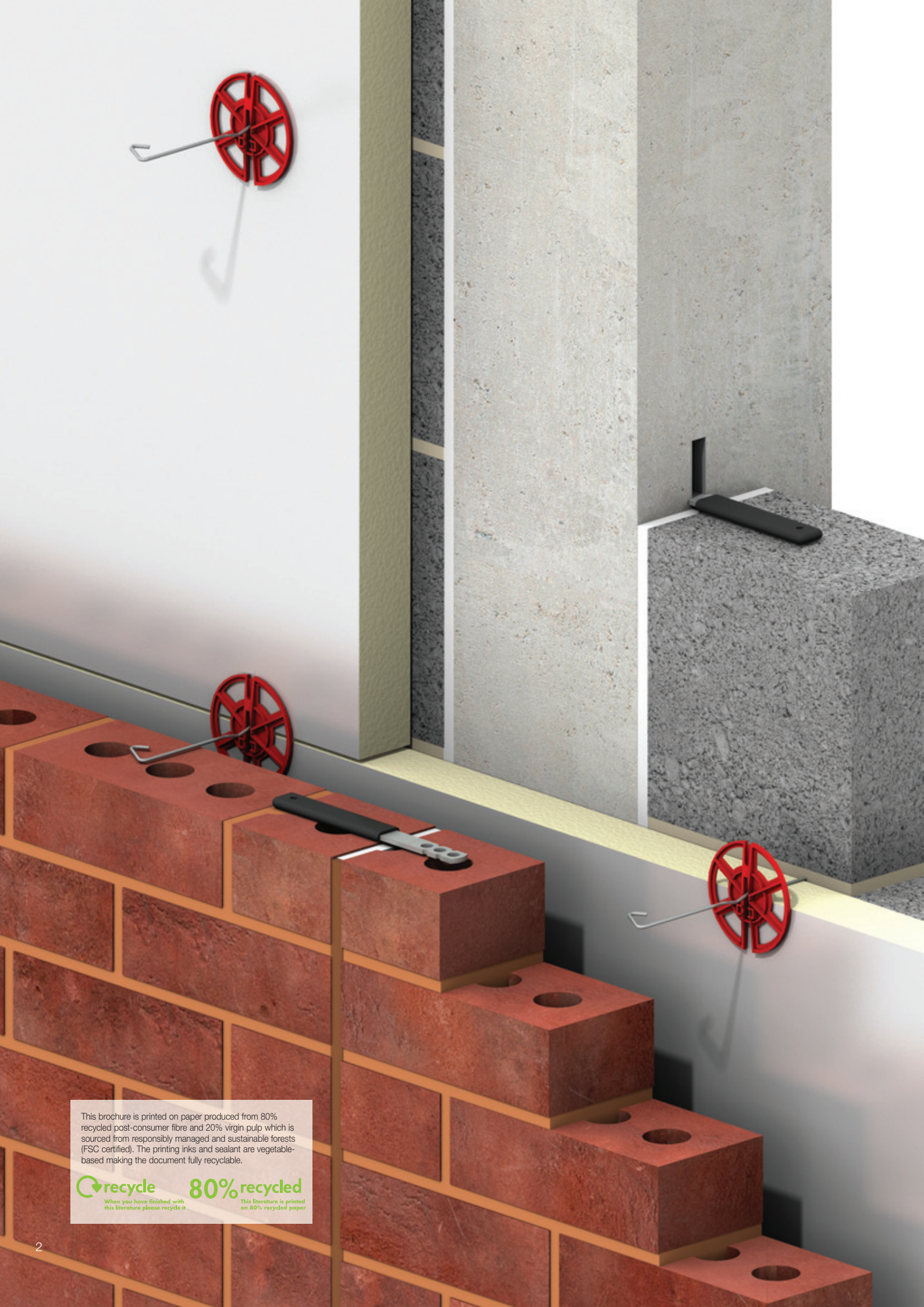
## Wall Ties and Restraint Fixings

for the Construction Industry

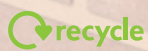


**Ancon<sup>®</sup>**  
BUILDING PRODUCTS





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**Ancon designs and manufactures high integrity steel products for the construction industry. Through continuous programmes of new product development, inward investment and employee advancement, the company is committed to maintaining the highest level of customer service within a dynamic and challenging industry.**

Wall ties and restraint fixings are an essential element in the stability of masonry panels.

Ancon manufactures fixings in a variety of lengths and types for restraining brickwork, blockwork and stonework. Restraints can be fixed to concrete and structural steelwork as well as any type of masonry.

The range of standard ties provides a solution for all types of wall construction and many products can be delivered in 24 hours. These items are shown in **red italics**.

Ancon fixings are manufactured from Austenitic stainless steel. Grade 1.4301 (304) is used in the vast majority of applications. All ties will be supplied to this specification unless Ancon is notified otherwise.

Masonry Support Systems	Cavity Wall Tie Selection	4-6
Lintels	Installation Guidance	7
Masonry Reinforcement	Ties for Brick-to-Block Construction	8-9
Windposts and Parapet Posts	Ties for Thin-Joint Blockwork	10
	Ties for Timber Frames	10
	Ties for Steel Studwork	11
	Ties for Cavities over 150mm	12
<b>Wall Ties and Restraint Fixings</b>	Ties for Bubble Foil Insulation & Slip Brick Ties	13
Channel and Bolt Fixings	Ties for Cellular Clay Blocks	13
Tension and Compression Systems	Frame Cramps and Channel Ties	14-16
Insulated Balcony Connectors	Vertical Movement Joints	17
Shear Load Connectors	Standard Wall Ties	18
Punching Shear Reinforcement	Bespoke Wall Tie References	19
Reinforcing Bar Couplers	Non-Drill Fixings for Steelwork	20-21
Reinforcement Continuity Systems	Head Restraints & Sliding Anchors	22-23
Stainless Steel Fabrications	Wall Starter Systems	24
Flooring and Formed Sections	Restraints for Stone Cladding	25-28
Refractory Fixings	Remedial Wall Ties	29-30
	Staifix Thor-Helical Crack Stitching Kit	31
	Other Ancon Products	31



Ancon product information is available in NBS format for easy insertion into a NBS specification

# Wall Ties and Restraint Fixings

## STANDARD WALL TIES

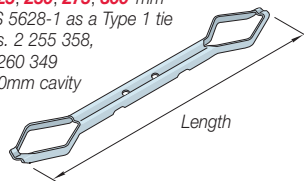
Lengths shown in **red italics** refer to items normally available at all times. Reasonable quantities can be delivered within 24 hours of acceptance of an order.

Ancon and Staifix wall ties are also available from builders merchants and other specialist distributors. For further information regarding the availability of any fixings please contact Ancon sales staff.

Ancon's Technical Services Team will be pleased to advise on the correct selection and use of our wall ties.

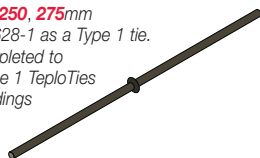
### ST1

Lengths **200, 225, 250, 275, 300\***mm  
Conforms to BS 5628-1 as a Type 1 tie  
U.K. Patent Nos. 2 255 358,  
2 260 348 & 2 260 349  
\*Suitable for 150mm cavity



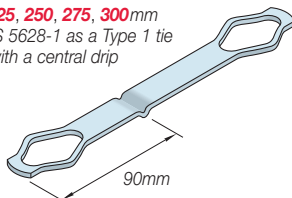
### Teplo1

Lengths **200, 225, 250, 275**mm  
Conforms to BS 5628-1 as a Type 1 tie.  
Due to testing completed to date the use of Type 1 TeploTies is restricted to buildings up to 18m in height.



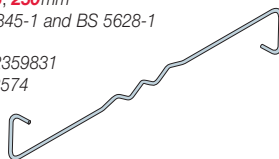
### SD1

Lengths **200, 225, 250, 275, 300**mm  
Conforms to BS 5628-1 as a Type 1 tie  
Also available with a central drip



### RT2

Lengths **200, 225, 250**mm  
Conforms to EN 845-1 and BS 5628-1 as a Type 2 tie  
Patent Nos. GB 2359831  
IE 83574



### Teplo2

Lengths **200, 225, 250, 275, 300, 325, 350, 375, 400, 425**mm  
Conforms to BS 5628-1 as a Type 2 tie



### HRT4

Lengths **200, 225, 250**mm  
Conforms to EN 845-1 and BS 5628-1 as a Type 4 tie  
Patent Nos. GB 2359831  
IE 83574



**Suitable for party walls with 50-100mm and 125mm cavities**

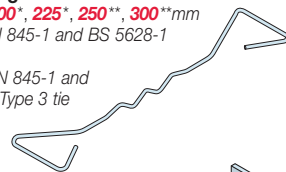
### Teplo4

Lengths **200, 225, 250**mm  
Conforms to BS 5628-1 as a Type 4 tie



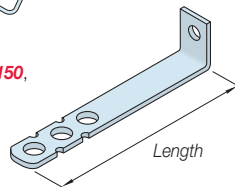
### Double Triangle

Lengths **150\*, 200\*, 225\*, 250\*\*, 300\*\***mm  
\*Conforms to EN 845-1 and BS 5628-1 as a Type 2 tie  
\*\*Conforms to EN 845-1 and BS 5628-1 as a Type 3 tie



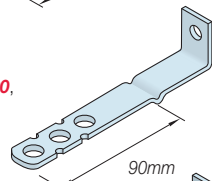
### SPB

Lengths **75, 100, 125, 150, 175, 200**mm



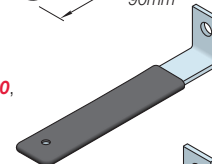
### SDB

Lengths **125, 150, 175, 200, 225**mm



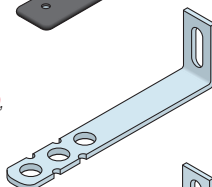
### PPB

Lengths **125, 150, 175, 200, 225**mm



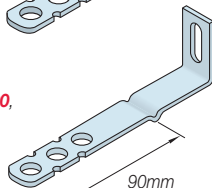
### SPV

Lengths **75, 100, 125, 150, 175, 200**mm.



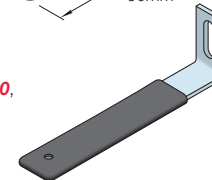
### SDV

Lengths **125, 150, 175, 200, 225**mm



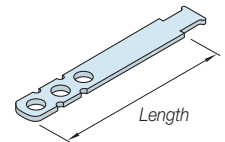
### PPV

Lengths **125, 150, 175, 200, 225**mm



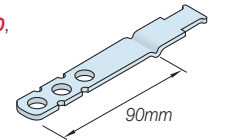
### SP21

Lengths **75, 100, 125, 150, 175, 200**mm  
For use with 21/18 Omega Channel



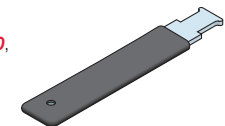
### SD21

Lengths **125, 150, 175, 200, 225**mm  
For use with 21/18 Omega Channel



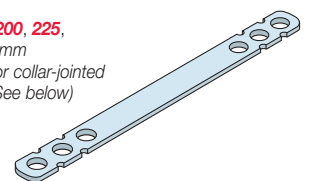
### PP21

Lengths **125, 150, 175, 200, 225**mm  
For use with 21/18 Omega Channel



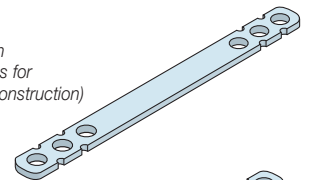
### SPS

Lengths **150, 200, 225, 250, 275, 300**mm  
(Not suitable for collar-jointed construction. See below)



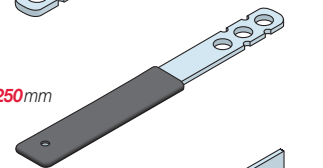
### SPS CJ

Length **150**mm  
(3mm thickness for collar-jointed construction)



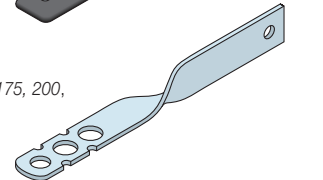
### PPS

Lengths **225, 250**mm



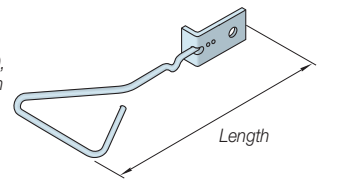
### SHX

Lengths **150, 175, 200, 225**mm



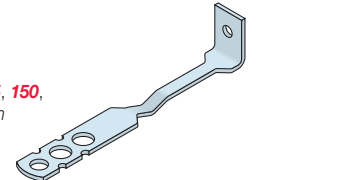
### WHX

Lengths **150, 175, 200**mm



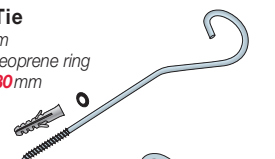
### SRB

Lengths **125, 150, 175, 200**mm



### Cavity Starter Tie

Supplied with an 8mm nylon wall plug and neoprene ring  
Lengths **180, 200, 230**mm



### Starter Tie

Supplied with an 8mm nylon wall plug  
Length **135**mm



### Frame Tie

Length **130**mm



## Recommended Lengths for Masonry/Masonry Wall Ties

Cavity Width (mm)	Tie Length (mm)
50-75	200
76-100	225
101-125	250
126-150	275
151-175	300
175-200	325
201-225	350
226-250	375
251-275	400
276-300	425

## Recommended Lengths for Frame Cramps and Cast-in Channel Ties\*

Cavity Width (mm)	Tie Length (mm)
<20	75
20-44	100
45-69	125
70-94	150
95-119	175
120-144	200
145-169	225

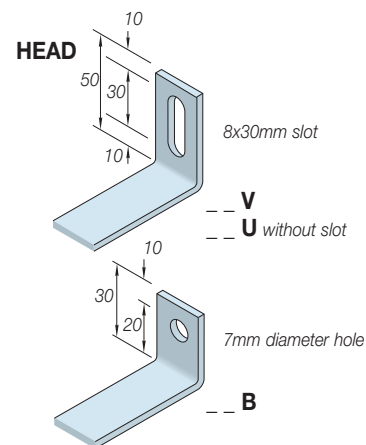
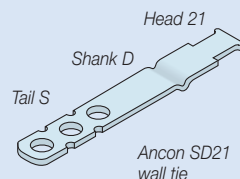
\*Excluding Ancon Fastrack

## REFERENCES FOR WALL TIES

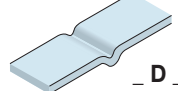
Many variations are available in addition to the standard ties. Wall ties for special applications may be specified and ordered with ease by using a reference letter for the tail, shank and head of the tie.

Ancon ties are produced in lengths from 150mm for masonry-to-masonry ties, and 75mm for masonry-to-concrete ties, in increments of 25mm. Drips will usually be positioned 90mm from the outer end of the tie (first reference letter). Masonry-to-masonry ties can also be supplied with a central drip. Special wall ties with a section wider than 20mm referenced S\_., will have an end with three holes without the side notches.

### Example using Reference System

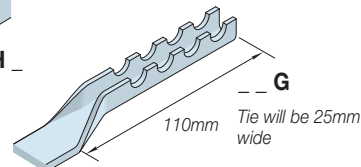
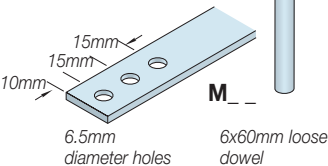
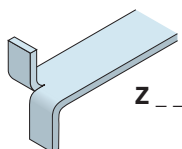
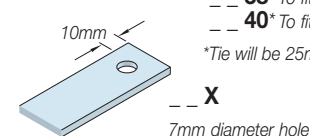
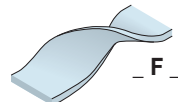
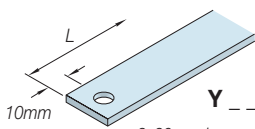
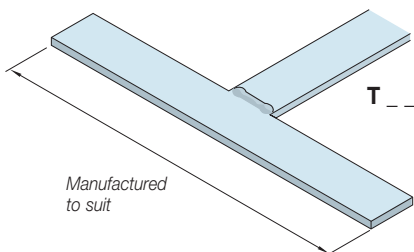
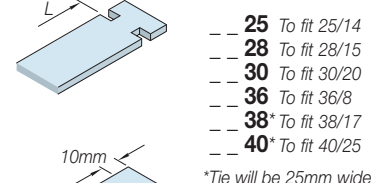
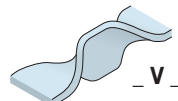
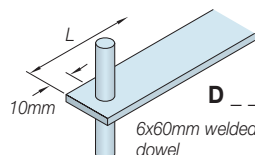
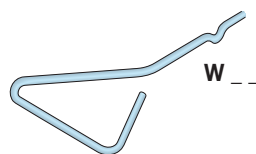
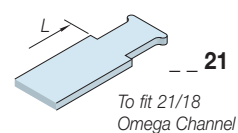
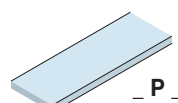
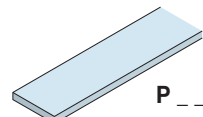
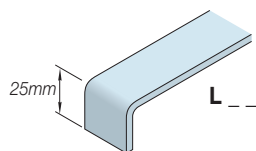
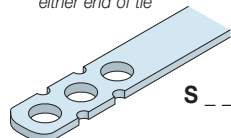


### SHANK



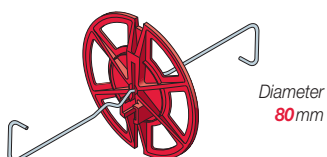
### TAIL

Most can be used at either end of tie



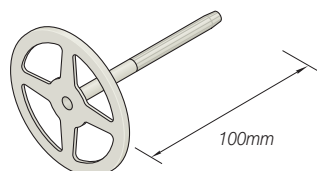
## Insulation Retaining Clips

The red Staifix Universal Insulation Retaining Clip (Uni) will fit all the standard stainless steel ties shown on page 18. The black Teplo-Clip should be used with the TeploTie range.



## Insulation Retainer

The H75/2 Insulation Retainer is for securing material to concrete, blockwork and brickwork. The 90mm diameter head can hold back up to 75mm of insulation. A 10mm diameter hole is required in the base material. The projecting end of the retainer is pushed through the insulation material into the hole and tapped into position to secure the insulation.



## Debonding Sleeves

Debonded Ties require 100mm embedment. A 120mm long sleeve will provide an allowance for movement and tolerance, and will be suitable for most applications. Other lengths and sizes available to special order.



# Wall Ties and Restraint Fixings

Ancon IHR - B Bolted to Concrete, Restraining Top of Inner Block Wall

## ANCON HEAD RESTRAINTS

Ancon Head Restraints provide the necessary restraint to the top of masonry walls. They allow for vertical movement to accommodate shrinkage or thermal movement of the wall or structural frame, while restraining wind loads.

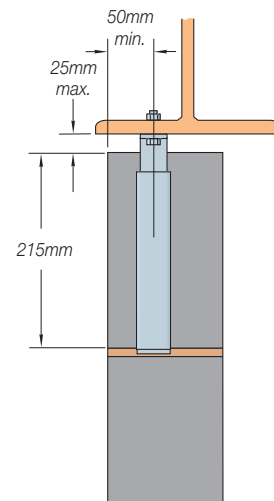


Ancon IHR-H Hammer-On Head Restraint

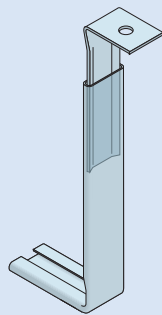
### Ancon IHR - Internal Head Restraint

The Ancon IHR is used for restraining the top of internal walls or the top of the inner leaf of a cavity wall. The opening at the front of the channel stem is sealed to prevent mortar ingress and to ensure that vertical movement can take place between the blockwork and the structure. The base of the stem must be built within a bed joint with the centre of the stem no closer than 50mm from the edge of the block. The vertical joint should be filled with mortar each side of the stem. The maximum joint between the top of the blockwork and the underside of the frame is not normally greater than 25mm. For larger gaps, please contact Ancon.

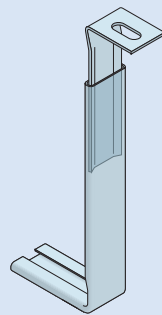
The sliding tie can be provided with either a hole (IHR - B) or slot (IHR - V) to suit M8 bolts, with a notch end to fix directly into a 38/17 or 30/20 cast-in channel (IHR - C) and with a notch end to suit the Hammer-On Section (page 20) that attaches to a steel flange without site drilling (IHR - H). The standard Ancon IHR will suit a 215mm high block and can resist a load of 1.5kN\*. Other sizes between 150 - 250mm are available.



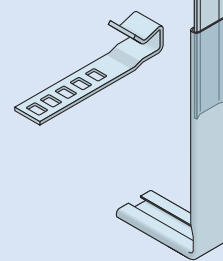
Ancon IHR - B with Hole



Ancon IHR - V with Slot



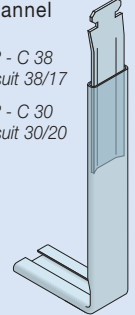
Ancon IHR - H\* supplied with Hammer-On Section



Ancon IHR - C to suit Cast-in Channel

IHR - C 38 to suit 38/17

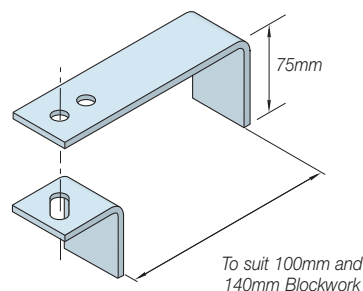
IHR - C 30 to suit 30/20



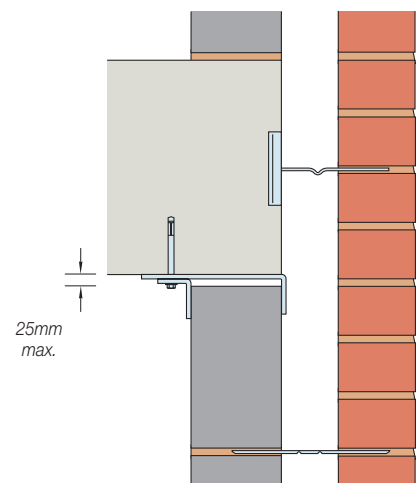
\*The IHR-H can resist a load of 1kN. When fixed at 450mm centres staggered each side of the lower beam flange (effective centres 900mm on each side) the service load will be 1.1kN per metre in either direction.

### Ancon FHR - Head Restraint

The Ancon FHR Head Restraint is used for restraining the top of internal walls or the internal leaf of a cavity wall. The two angles clamp the top of the wall and have 10mm diameter holes to suit M8 bolts. They are supplied with two holes in the longer angle to allow the restraint to fit 100mm and 140mm blockwork. Each restraint can resist a service load of 1kN.



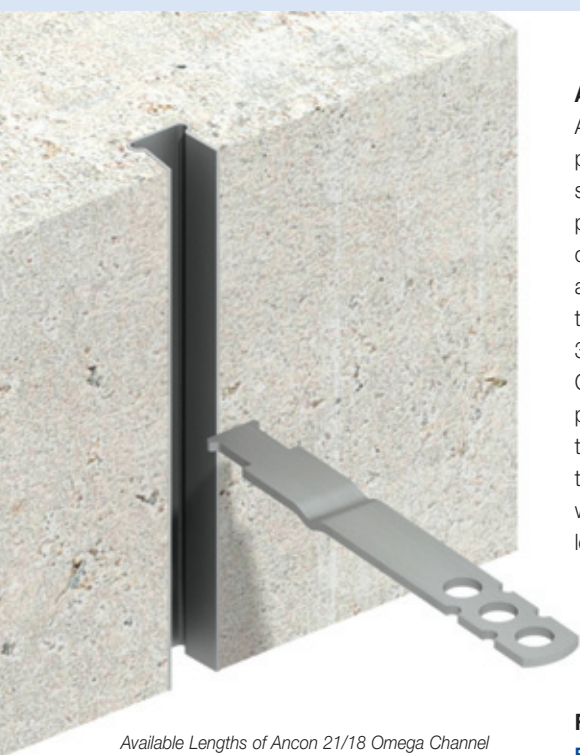
Ancon FHR Head Restraint - other sizes available



Ancon FHR Head Restraint Fixed to Underside of Floor Slab, Restraining Head of Inner Leaf of Cavity Wall



# Wall Ties and Restraint Fixings



Available Lengths of Ancon 21/18 Omega Channel  
**100, 3000mm**  
 U.K Patent No. 2 249 110

Ancon 21/18 Omega Channel with Ancon SD21 Tie

## Ancon 21/18 Omega Channel

Ancon 21/18 Omega Channel is a high performance, self-anchoring, cast-in channel slot suitable for use with our wall ties to provide the necessary restraint to the outer leaf of masonry. The section is only 18mm deep and can be used where there is reduced cover to reinforcement. Available in 100mm and 3000mm lengths, Ancon 21/18 Omega Channel is filled with polystyrene to help prevent the ingress of concrete. Nail holes aid the fixing of the slot to timber formwork. Wall ties used with Ancon 21/18 Omega Channel will provide safe working shear and tensile loads of 1.5kN.

## Ancon 25/14, 28/15, 30/20, 38/17, 36/8 and 40/25 Channels

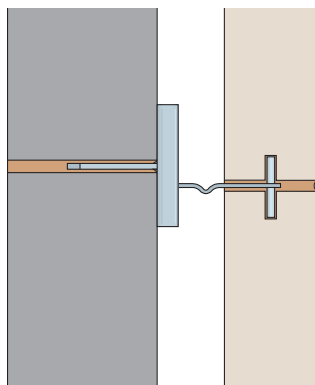
Ancon wall ties can also be used with our 25/14, 28/15, 30/20, 38/17, 36/8 and 40/25 channels. 30/20 Channel is supplied with anchors for casting into concrete. 25/14 and 36/8 Channels are supplied plain-backed for surface fixing. 28/15, 38/17 and 40/25 Channels are available with or without anchors for casting in or surface fixing. Ties for 38/17 and 40/25 channel will be 25mm wide to accommodate the wider opening; all other channel ties will be 20mm wide. Wall ties used with Ancon 28/15, 30/20, 38/17 and 40/25 channel will provide safe working shear and tensile loads of up to 1.0kN, while wall ties used with 25/14 and 36/8 channels will provide up to 0.5kN. Maximum safe working loads of surface-fixed channels will be subject to suitable fixings, and appropriate fixing centres.

## Fixing of Channel

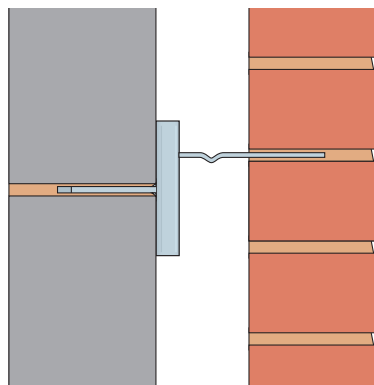
Fixing Method	Omega 21/18	25/14	28/15	30/20	38/17	36/8	40/25
Cast-in	✓	✗	✓	✓	✓	✗	✓
Surface Fixed	✗	✓	✓	✗	✓	✓	✓

## Maximum Centres for Surface-Fixing

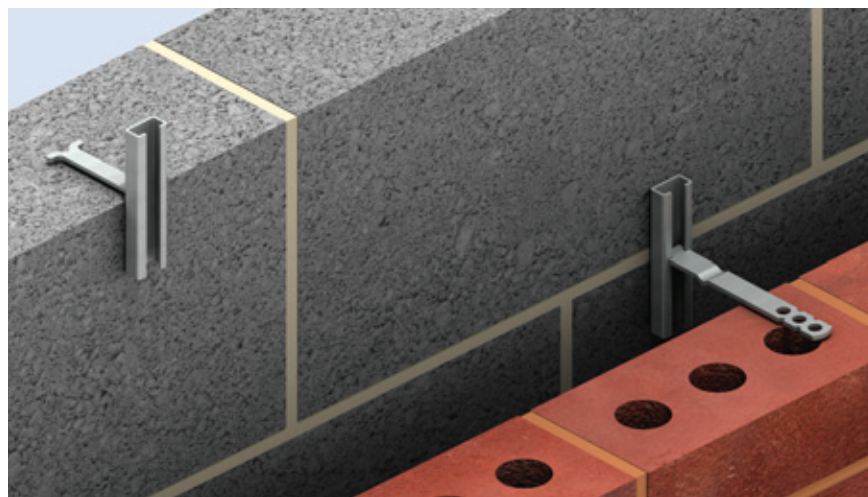
SWL (tension)	25/14	28/15	38/17	36/8	40/25
0.5kN	337	525	650	300	650
1.0kN	-	400	525	-	525



Fastrack used with DD28 Tie for Stonework



Fastrack used with SD28 Tie for Brickwork



Ancon Fastrack Channels 100mm long with SD28 Tie

## Ancon Fastrack

Building one leaf of the cavity wall in advance of the other is often beneficial but can create problems with coursing. Buildings which incorporate imperial or continental bricks and standard metric blocks present even greater difficulties.

Ancon Fastrack Channel is built into the inner leaf of blockwork ready to take an Ancon SD28 or similar tie for the outer leaf. This method of construction avoids the dangers of projecting ties.

Ancon Fastrack Channels and Ties can be supplied in different lengths and can also be used for tying stonework to blockwork if DD28 or similar Ancon Ties are used.

The recommended tie length for use with a fastrack channel is 'cavity width plus 50mm'.

Ancon Fastrack Channels and Ties sustain loads which exceed the requirements for a Type 2 tie to BS 5628-1. This system can also be manufactured in a 36/8 channel profile that accepts wall ties referenced \_ \_ 36.

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These products are available from:

The construction applications and details provided in this literature are indicative only. In every case, project working details should be entrusted to appropriately qualified and experienced persons.

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