TOOLBOX TALK

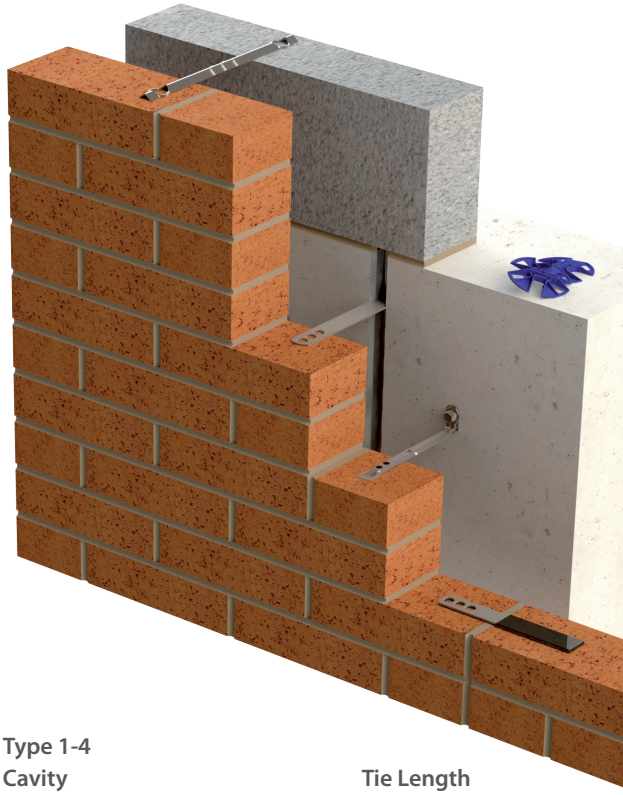
Wall Ties

ACS
inner strength in construction

This document is designed as a 'Toolbox Talk' that site management can quickly deliver to construction operatives.

It is an informal discussion document that focuses on Wall Ties. These talks can be used daily to promote your department's safety culture. The content is designed to be of a light nature. The talk should typically last five to ten minutes. Group input and interaction is to be encouraged.

If the trainer is asked any questions that they are unsure of they are asked to consult directly with ACS and reconvene with the group at a later date. If more detailed training is required ACS can deliver formal training for you at your place of work.



Correct Selection of Tie

Wall ties are structural fixings and their importance to the stability of a building is often overlooked on site.

There are 6 different categories of wall ties, which are determined by strength, function and use. Types 1 to 4 are for masonry to masonry ties, and types 5 and 6 are for use in timber frame construction.

Masonry To Masonry Ties

Type	Classification	Application
Type 1	Heavy Duty	Most UK sites and buildings of any height Coastal and highland applications Wind speeds exceeding 31 m/s
Type 2	General Duty	Domestic dwellings up to 15m Windspeed < 31 m/s
Type 3	Basic Duty	Domestic dwellings up to 15m Windspeed < 27 m/s
Type 4	Light Duty	Domestic dwellings up to 10m Windspeed < 27 m/s

Masonry to Timber Ties

Type	Classification	Application
Type 5	Basic Duty	Domestic dwellings and industrial/commercial buildings up to 3 storeys and < 15m in height Windspeed < 25 m/s
Type 6	Light Duty	Domestic dwellings and industrial/commercial buildings up to 4 storeys and < 15m in height Windspeed < 25 m/s

Type 1-4

Cavity	Tie Length
< 50	150
50-75	200
76-100	225
101-125	250
126-150	275
150-175	300

Type 5-6

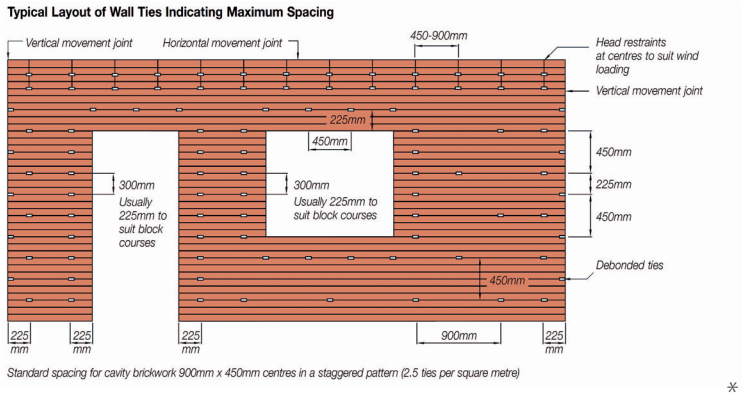
Cavity	Tie Length
< 20	75
20-44	100
45-69	125
70-94	150
95-119	175
120-144	200
145-169	225
170-194	250

For more information on the most suitable wall tie for your building project,
call 0844 850 0860 or visit www.acsstainless.com

CE BS EN 845

Correct Placement of Tie

Wall ties should be evenly distributed at 2.5 ties per square metre and staggered between courses. At vertical edges of an opening, unreturned or unbonded edges, and also at vertical expansion joints, additional ties should be placed at a rate of one per 300mm in height and located not more than 225mm from the edge.



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Leaf Thickness	Cavity Width	Spacing of Ties		Ties/ m2Ties
< 90	50-75	450	450	5.0
90 >	50-150	900	450	2.5

Critical Quality Issues

To achieve required performance criteria under wind loading:

Wall ties must be installed

- To correct specification
- To correct spacing
- Within correct cavity size
- Within specified tolerances
- With adequate embedment lengths
- With insulation retaining clips compatible with your tie.

Movement control joints must be constructed

- With compressible joint fillers that actually compress
- With sealant that meets specification
- With soft joints where specified

ACS Stainless Steel Fixings Ltd only manufacture Wall Ties from prime grade 304 or 316 stainless steel. Cavity Wall Ties should be stainless steel to prevent corrosion, inferior raw materials/grades would not be recommended when selecting products for use in the UK.

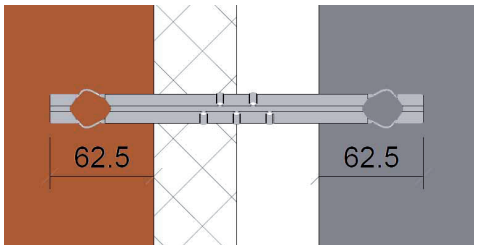
** The image above is indicative please refer to manufacturers literature*
A Two Part Tie is recommended for a 200mm cavity or above. Please refer to the ACS datasheet for appropriate spacings

Correct Embedment of Tie

Insufficient embedment of wall ties in the mortar joints of masonry cavity walls compromises wall tie performance and could lead to the collapse of walls. British Standards suggest a minimum embedment of 50mm, however ACS recommend 62.5mm to allow for site tolerances. Drip features on a wall tie should be placed at the centre of an open cavity. Both leaves of the cavity wall should be built simultaneously to eliminate any risk of injury from protruding ties.

Wall ties should always be pressed down firmly into fresh mortar, be fully surrounded and have a slight fall towards the outer leaf to avoid damp. Ties should never be slid into a joint.

The bending of installed wall ties should be forbidden at all times as this affects the performance of the tie and weakens the embedment in the inner leaf.



Health & Safety

Full PPE must always be used.

When working near metal objects like Wall Ties the use of eye protection, gloves and long sleeved shirts must be stressed.

The risk of cuts etc are a particular hazard around metal objects such as Wall Ties, Masonry Support, Windposts, Lintels and Scaffold.

To help eliminate the risk of injury on site, all ACS cavity wall ties feature safety ends. Wherever possible, it is advised that both leaves of a cavity wall are built simultaneously to eliminate the risks associated with protruding ties. Site managers should make all workers and visitors aware of this risk.

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BS EN 845