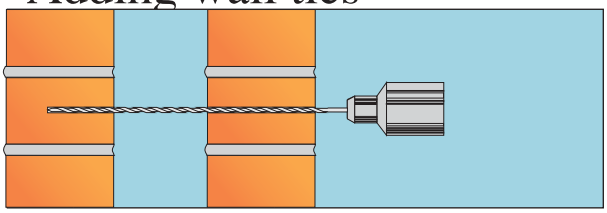
Fast-fix

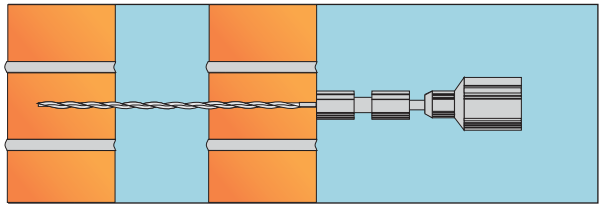
Fast-fix wall tie replacement and masonry repair system can be used to re-tie and repair a wide range of differing materials like air-crete blocks, clay bricks, stone, concrete blocks and Timber studs.

Installation Procedures

Adding wall ties

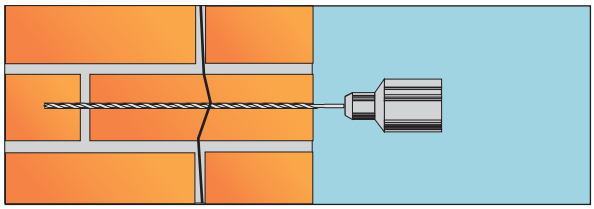


1) **Drill** pilot hole through outer leaf and then continue pilot hole if required until recommended depth in inner leaf is reached.

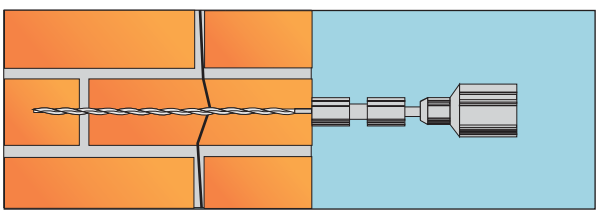


2) Insert tie into FAST-FIX tool, then position front of tie into pilot hole and **Drive** home.

Masonry crack repair



1) **Drill** pilot hole through masonry until recommended depth is reached.



2) Insert tie into FAST-FIX tool, then position front of tie into pilot hole and **Drive** home.

Remedial wall tie and masonry crack repair system with a stress free helical pinned fixings

Benefits

- Quick installation just drill and drive.
- Low labour costs.
- High tensile strength.
- Allows for thermal movement.
- Multi water drips.
- Easy installed through cavity insulation.
- Designed and tested to DD140.
- Insurance backed guarantees.

Features

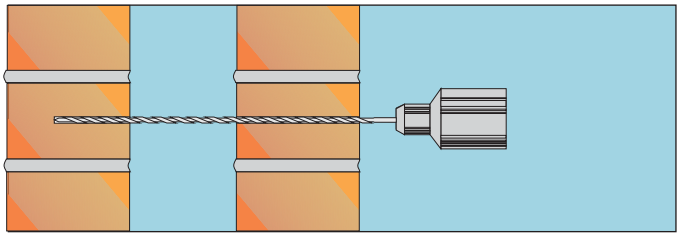
- Easy and problem free installation.
- Austenitic 304 or 316 Stainless Steel.
- Effective in tying cavity and solid walls.
- No mechanical expansion problems.
- No resin, no rubber, high fire rating.

Fast-Fix tie classification DD140

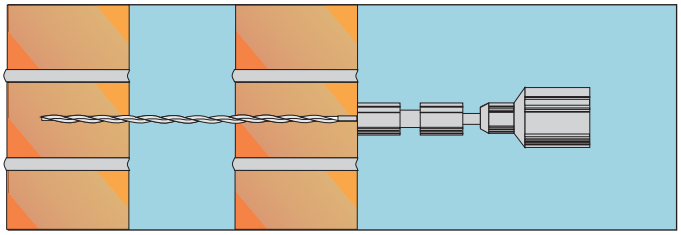
Material	Tie Size	Tie density	Fixing
Air-crete blocks	Ø 8mm	2.5 m^2	Class 4
Timber studs	Ø 8mm	4.44 m^2	Class 5&6
Soft clay bricks	Ø 8mm	2.5 m^2	Class 3
Concrete blocks	Ø 8mm	2.5 m^2	Class 2
Hard clay bricks	Ø 8mm	2.5 m^2	Class 2
Engineering bricks	Ø 8mm	2.5 m^2	Class 2

INSTALLATION PROCEDURE

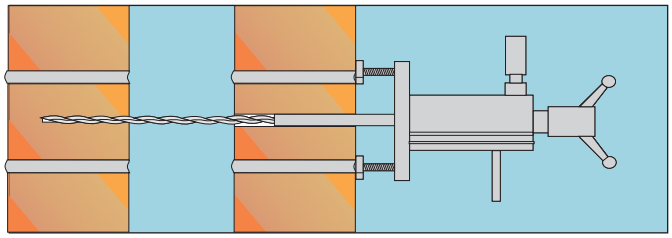
A light hammer drill is recommended ie no more than 1.5NM impact and not less than 3000 impacts per minute.



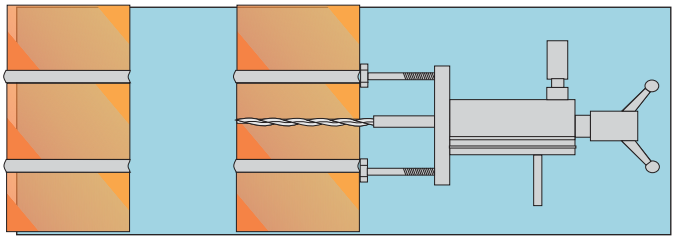
1, Drill a pilot hole through the outer leaf make sure to avoid frogs and core holes. Depending on inner leaf material you may need to carry on into the inner leaf with the pilot drill to set embedment depth. Then check cavity width and inner leaf material for tie and pilot drill selection using TABLES A & B



2, Insert tie into special FAST-FIX tool, then position front of tie into pilot hole and hammer home.



3, Before drilling out all the Pilot holes, preliminary load tests should be carried out to establish the strength of inner leaf fixings, which should exceed the load required by 20%. TABLE E shown's all the required loads for each site taking in consideration wind zones, exposure condition, and topography to a height of 15metres. If due to soft inner or outer leaf materials test loads are not exceeding required loads by 20% Tie density can be increased to reduce the required tie loads see TABLE D tie densities and spacings
5% of all ties must be load tested.



4, Before drilling out all the Pilot holes, preliminary load tests should be carried out to establish the strength of outer leaf fixings, which should exceed the load required by 20%. TABLE E shown's all the required loads for each site taking in consideration wind zones, exposure condition, and topography to a height of 15metres. If due to soft inner or outer leaf materials test loads are not exceeding required loads by 20% Tie density can be increased to reduce the required tie loads see TABLE D tie densities and spacings
5% of all ties must be load tested..

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TABLE A Tie selection

Cavity Range	Inner Leaf Embedment		
	50mm	70mm	90mm
25mm to 50mm	190mm	210mm	230mm
50mm to 75mm	210mm	230mm	250mm
75mm to 100mm	240mm	260mm	280mm
100mm to 125mm	260mm	280mm	300mm
125mm to 150mm	290mm	310mm	330mm

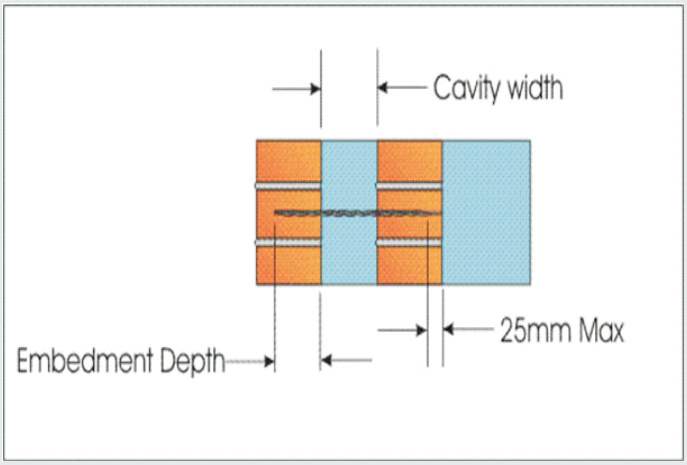
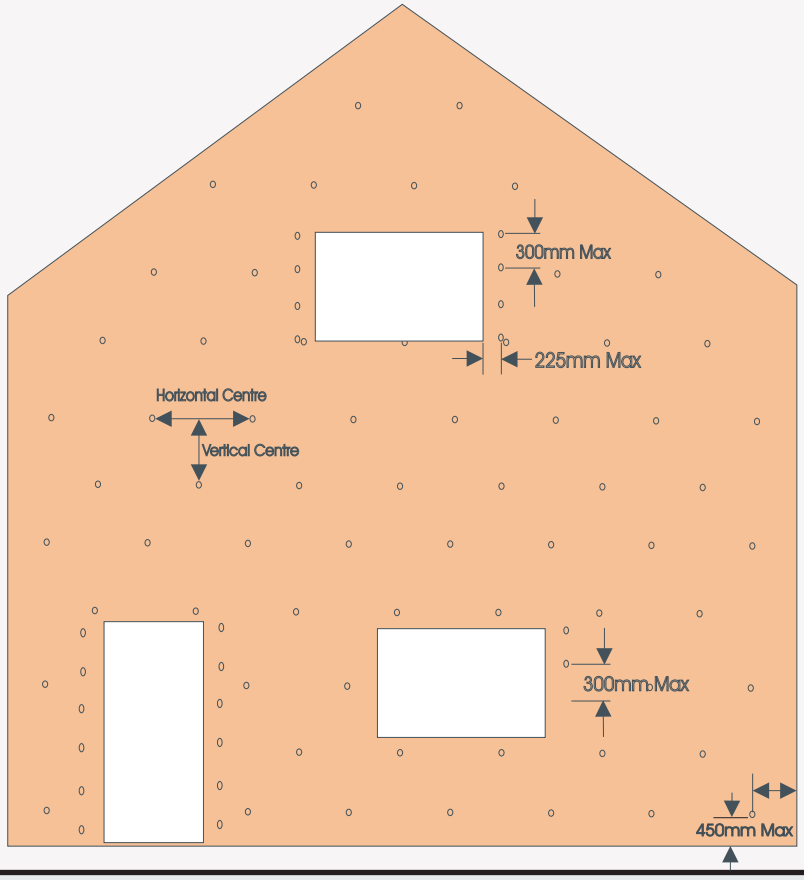


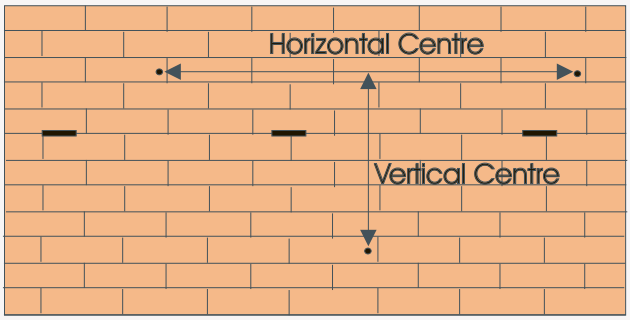
TABLE B pilot drill & depth selection

Material		Tie size	Inner leaf		Outer leaf	
			Minium Embedment Depth	Pilot hole diameter	Minium Embedment Depth	Pilot hole diameter
Air Crete block	2.8N/mm^2	8mm	90mm	N/A	90mm	N/A
Leca block	3.5N/mm^2	8mm	70mm	N/A	70mm	N/A
Concrete block	7N/mm^2	8mm	70mm	5.5mm	70mm	5.5mm
Old soft brick	< 5N/mm^2	8mm	70mm	5.0mm	70mm	5.0mm
Old med brick	> 5N/mm^2	8mm	70mm	5.0mm	70mm	5.0mm
Most modern bricks	>11N/mm^2	8mm	70mm	5.5mm	70mm	5.5mm
Semi engineering bricks	30N/mm^2	8mm	50mm	6.0mm	50mm	6.0mm

TABLE D Tie spacings and densities



- New tie position
- Old tie position



Always try to vertically space new ties either side of existing ties

Tie densities and spacing		
Ties per M^2	Vertical Centres	Horizontal Centres
2.47M^2	450mm	900mm
2.96M^2	450mm	750mm
3.29M^2	450mm	675mm
4.94M^2	450mm	450mm
5.92M^2	375mm	450mm
7.40M^2	300mm	450mm
9.86M^2	300mm	338mm
13.12M^2	255mm	338mm

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Wind speed zones

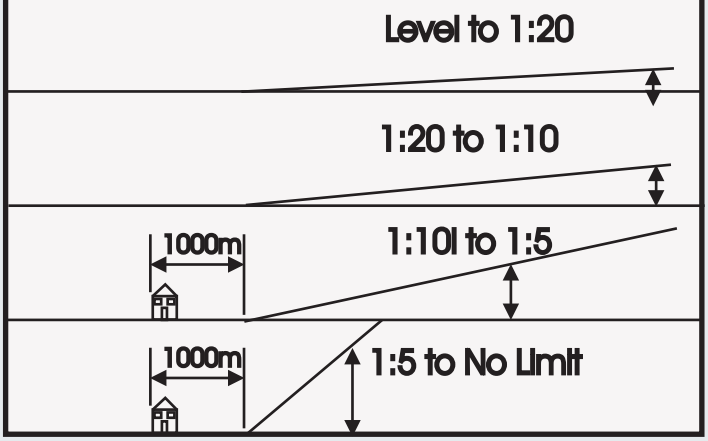
A=44m/s

B=52m/s

C=56m/s

Topography Factor S1

Topography allows for the influence of landforms like hills and cliffs which will increase the wind speed expected by any site within a 1000 metre radius



S2 Ground roughness, building size and height above ground factor worse case class A, HEIGHT 15 METRES	
I	Open country with no windbreaks and seafronts
II	Open country with scattered windbreaks
III	Suburban country with many wind breaks; small towns, out skirts of large cities
IIIV	Urban surface with large and frequent obstructions, i.e. City centres

TABLE E Tie loads for different site condition, explanatory notes can be provided on request

TIE DENSITY 2.47m²	A (44 m/s)				B (52 m/s)				C (56 m/s)			
	I	II	III	IIIV	I	II	III	IIIV	I	II	III	IIIV
Level to 1:20	-1000N	-940N	-730N	-520N	-1400N	-1320N	-1020N	-720N	-1620N	-1520N	-1180N	-840N
1:20 to 1:10	-1260N	-1180N	-910N	-650N	-1750N	-1650N	-1280N	-900N	-2040N	-1910N	-1480N	-1050N
1:10 to 1:5	-1540N	-1450N	-1120N	-790N	-2140N	-2020N	-1570N	-1110N	-2490N	-2350N	-1820N	-1290N
1:5 to No Limit	-1850N	-1740N	-1350N	-960N	-2580N	-2430N	-1890N	-1330N	-3000N	-2820N	-2190N	-1550N
	2.47 Ties per metre square require 900mm horizontal centres and 450mm vertical centres											

TIE DENSITY 4.94m²	A (44 m/s)				B (52 m/s)				C (56 m/s)			
	I	II	III	IIIV	I	II	III	IIIV	I	II	III	IIIV
Level to 1:20	-500N	-470N	-360N	-260N	-700N	-660N	-510N	-360N	-810N	-760N	-600N	-420N
1:20 to 1:10	-630N	-590N	-460N	-320N	-870N	-830N	-640N	-450N	-1020N	-960N	-740N	-520N
1:10 to 1:5	-770N	-720N	-560N	-400N	-1070N	-1010N	-780N	-550N	-1240N	-1180N	-900N	-640N
1:5 to No Limit	-930N	-870N	-670N	-480N	-1300N	-1220N	-950N	-670N	-1500N	-1410N	-1090N	-770N
	4.94 Ties per metre square require 450mm horizontal centres and 450mm vertical centres											

NOTE you can use other tie densities shown in TABLE D by selecting the required tie load for your particular site conditions from one of the above two table, then multiply your selected tie load by the tie density of that table, to give you the load per metre squired. Then divide the load per metre squired by any of the tie densities shown in TABLE D,to get the required tie load for that density. You must then install ties to the required vertical and horizontal spacing centres of the selected tie density.

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