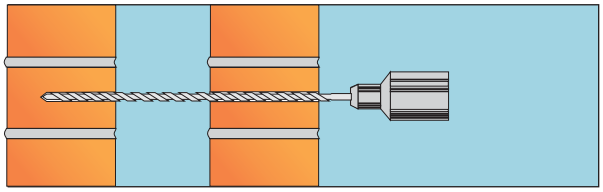
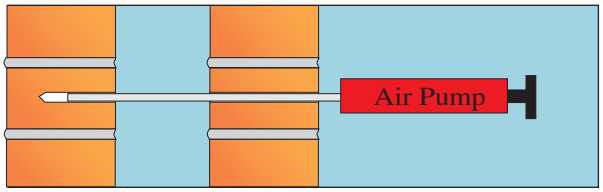
Resi-fix

The Resi-Fix cavity wall tie replacement system, when a resin bond is required in both inner and outer leafs of differing materials like, air-crete blocks, clay bricks, stone, and concrete blocks, ideal for small one off jobs of about 30 to 200 ties

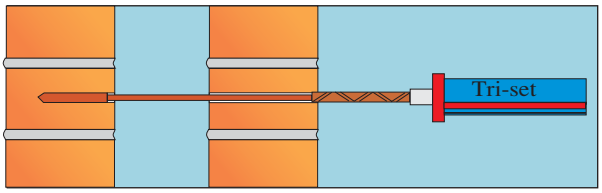
Installation Procedure



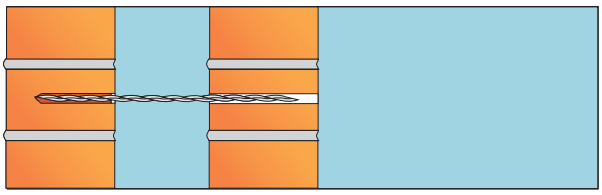
1) Drill clearance hole through outer leaf and 70mm into inner leaf.



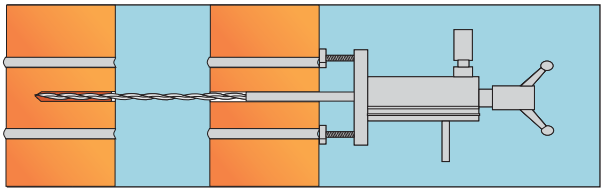
2) Clear both holes of any dust or debris.



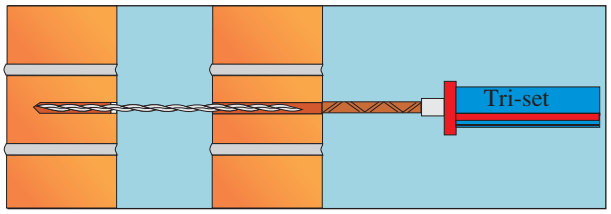
3) Fill inner hole with Tri-set resin



4) Insert Resi-Fix Tie



5) Load test Resi-Fix Tie



6) Fill clearance hole with Tri-set resin to bond tie to outer leaf

Remedial wall tie system with a resin fixing in the inner leaf and a resin fixing on the outer leaf

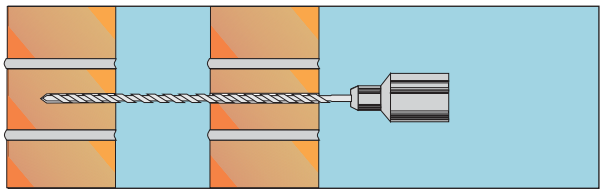
Resi-Fix Ties are manufactured out of 304 or 316 Stainless Steel and have been independently tested using a common range of building materials by the University of Portsmouth material testing department in accordance with BS 1243 and DD140 They can be installed quickly and easily by drilling a clearance hole through the outer leaf then 70mm into the inner leaf. After cleaning out the holes with an air pump, fill the inner hole with resin and then insert Resi-Fix Tie and then fill outer hole with resin The constant helix of Resi-Fix Ties gives multi water drips stopping water transfer across cavities. The low cross sectional area of Resi-Fix Ties gives good sound proofing qualities and allows lateral flexibility to over come any misalignment or seasonal thermal movement while still maintaining the required resistance to wind-loads.

Resi-Fix tie classification DD140

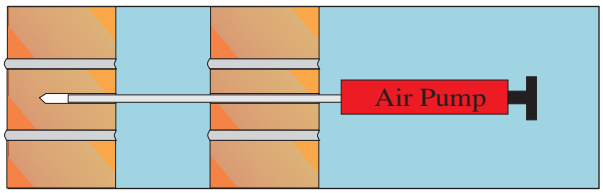
Material	Tie Size	Tie density	Fixing
Air-crete blocks	Ø 6mm	2.5 m^2	Class 3
Soft clay bricks	Ø 6mm	2.5 m^2	Class 2
Concrete blocks	Ø 6mm	2.5 m^2	Class 2
Hard clay bricks	Ø 6mm	2.5 m^2	Class 2
Engineering bricks	Ø 6mm	2.5 m^2	Class 2

INSTALLATION PROCEDURE

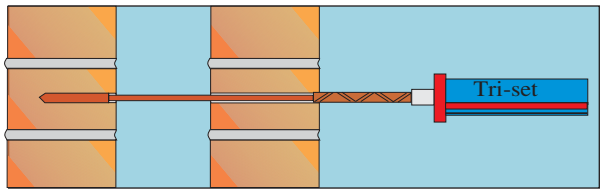
A light hammer drill is recommended ie no more than 1.5NM impact and not less than 3000 impacts per minute.



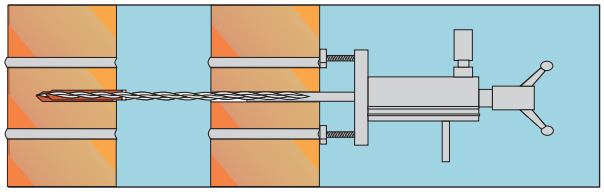
1, Drill a clearance hole through the outer leave make sure to avoid frogs, core holes. then drill 70mm into the inner leave
10mm clearance hole for 6mm Tie
12mm clearance hole for 8mm Tie
Then check cavity width for tie selection using
TABLES A



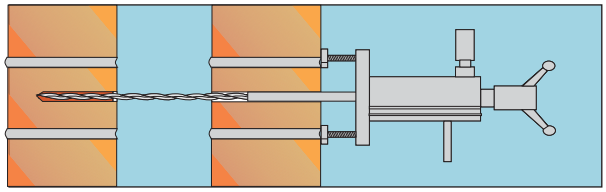
2, Clear outer and inner hole of any brick dust or debris with compressed or air pump.



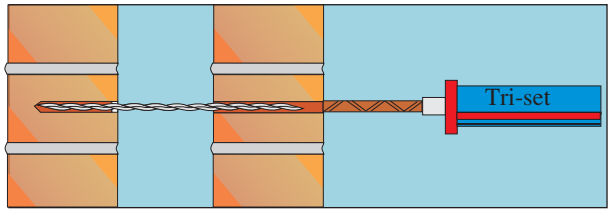
3, Remove plugs and screw on mixing nozzle to Triset resin cartridge and place into resin gun, pump resin through mixing nozzle until an even colour is achieved. Then insert nozzle with extension tube through outer clearance hole and across cavity, until just inside the inner clearance hole, Then pump resin until you can fill back pressure of the resin filling hole and pushing extension tube back. Knock off pressure switch and remove nozzle and extension tube.



4 Insert tie by passing through outer clearance hole and across cavity and into resin filled inner clearance hole.



5,Before drilling out all the clearance holes, preliminary load tests should be carried out to establish the strength of inner and outer leave fixing. 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 leave material test loads are not exceeding required load the Tie density can be increased to reduce the required tie load's see TABLE D. Tie densities and spacings 5% of all ties installed must be load tested.



6,Then insert nozzle into clearance hole until touching tie, pump resin around tie, you must get at least 50mm of resin embedded around the tie, then if resin match's brick bring resin to the surface and make good with a rag. If resin colour dos not match then hold back 6mm and make good with sand/cement and dies. When working on render surface's always hold resin back to the surface of brick and make good with sand and cement.

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TABLE A Tie selection

6mm Tie	70mm Inner embedment depth
Cavity Range	Tie length
25mm to 50mm	*190mm*
50mm to 75mm	*210mm*

8mm Tie	70mm Inner embedment depth
Cavity Range	Tie length
25mm to 50mm	*190mm*
50mm to 75mm	*210mm*
75mm to 100mm	*240mm*
100mm to 125mm	*260mm*
125mm to 150mm	*290mm*

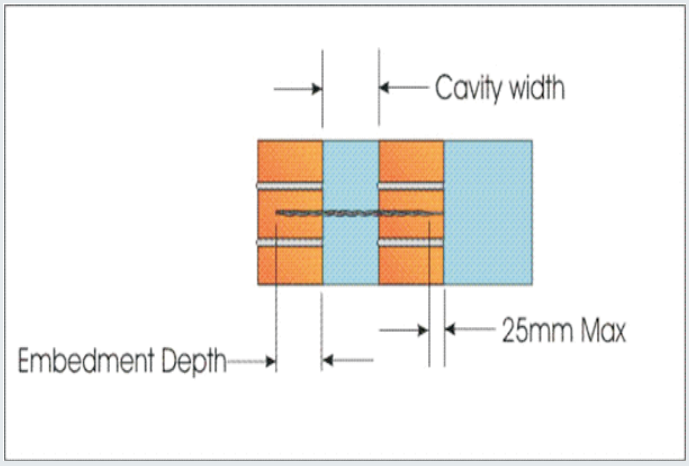
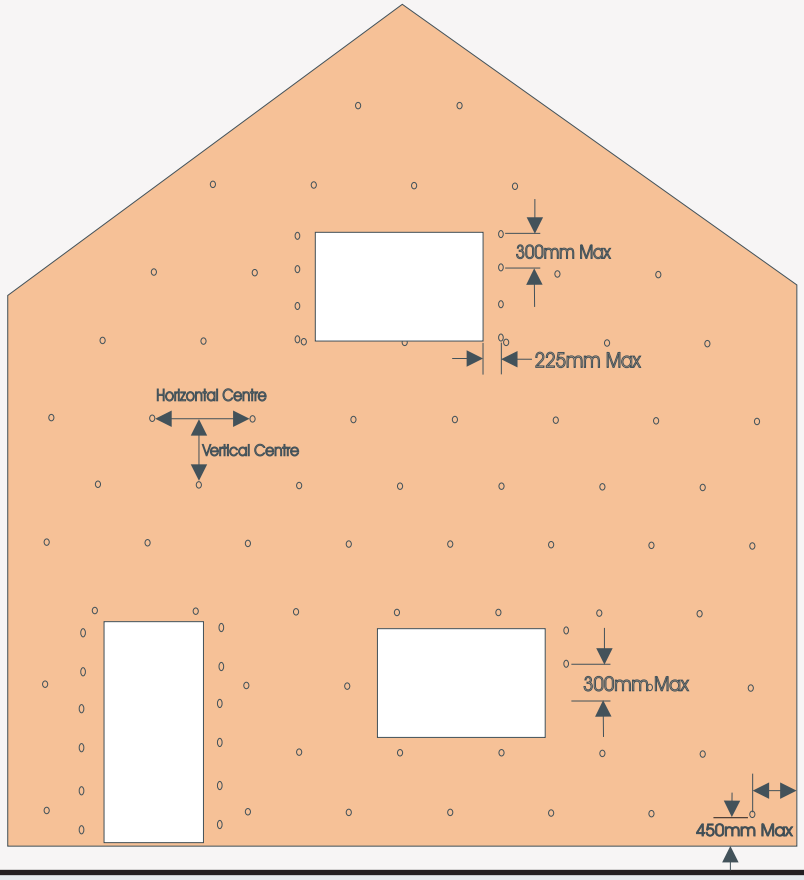
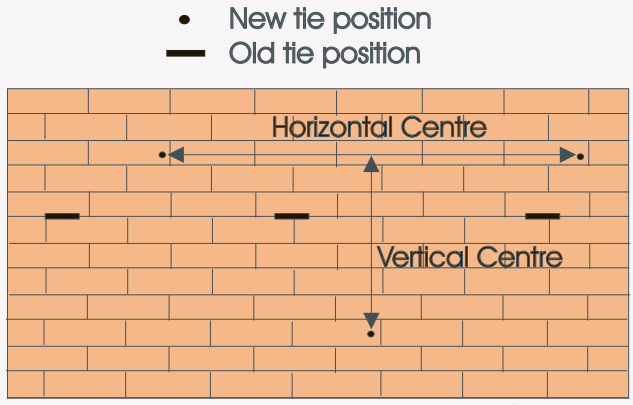


TABLE D Tie spacings and densities





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

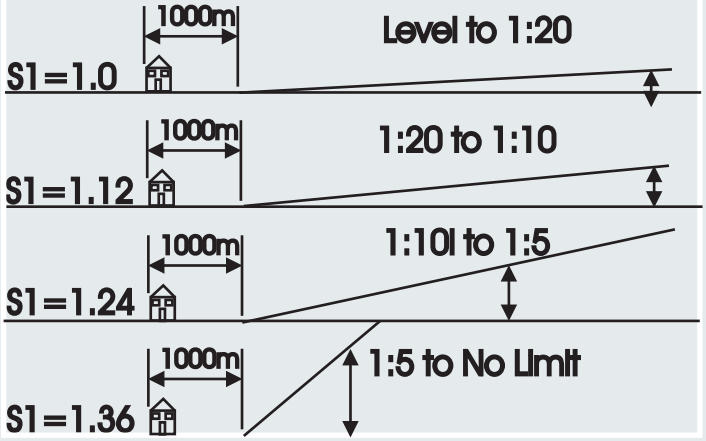
A=44m/s

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.