

Declaration of Performance

Description	Qwik-Fix® GFRP Wall Ties
Intended Use	Thermally insulating, symmetrical, horizontal cavity wall ties intended for use in new masonry cavity wall construction. Also for use as a bearer for precast concrete window sills and string course.
Manufacturer	Coughlan Engineering (Tullamore) Ltd. Riverside, Tullamore, County Offaly, R35 KV78, Ireland
Notified Body	Steel Construction Certification Scheme; 4 Whitehall Court, Westminster, London, SW1A 2ES - Notified Body Number: 2773

SCCS has performed (i) initial inspection of the manufacturing plant and factory production control and, (ii) continuous surveillance, assessment and evaluation of factory production control and issued Factory Production Control certificate 2273-CPR-0482.

Essential Characteristics	Declared Performance	Technical Specification
Tolerances on Dimension & Shape	Declared length x 3.5mm thick x 17.2mm wide \pm 2.5%, before coating	EN 845-1: 2003 + A1: 2008
Density	1.85 g/cm ³	ASTM D 792 - 91
Izod Impact Resistance	NPD	ASTM D 256 - 03
Water Absorption	< 0.8%	ASTM D 570 - 81
Load Bearing Capacity	65kg / 613N per tie @ 62.5mm embedment	In house point-load proof test
Resistance to fire	2 hours	EN 1363-1: 2012, EN 1365-1: 2012 & ASTM E - 84
Tensile Strength	5430 N	EN 845-1: 2003 + A1: 2008 & EN 846-5: 2012
Mean Displacement @ 1/3 of Mean Load Capacity (Tension)	0.55mm	
Compressive Strength	2480 N	
Mean Displacement @ 1/3 of Mean Load Capacity (Compression)	0.18mm	
Resistance to Shear	2640 N	EN 845-1: 2003 + A1: 2008 & EN 846-7: 2012
Mean Displacement @ 1/3 of Mean Load Capacity (Shear)	0.65mm	
Thermal Conductivity	0.59 W/m.K \pm 6.4%	ISO 8990: 1994
Glass Content	\geq 65%	FPC
Classification	Type 2	BS EN 5628-1: 2005 & Eurocode 6

The performance of the product identified above is in conformity with the declared performance.

Signed for and on behalf of Coughlan Engineering (Tullamore) Limited by:



Niall Mulligan - Director
11/10/2017

Certificate of Approval

Certificate Number: PTD1004

Issue: 1.0

Coughlan Engineering (Tullamore) Ltd

Riverside
Tullamore
Offaly
R35 V78
Ireland



Having complied with the requirements of the following:

SD 227: Rev.0.3

Certified Thermal Details and Products Scheme

is authorised to use the BRE Global Certification Mark in association with the following:

Products

Model	Description	Reference No.
Qwik Fix wall ties: <ul style="list-style-type: none"> • 275mm ties in 150mm cavity • 300mm ties in 175mm cavity • 325mm ties in 200mm cavity 	Wall ties for cavity wall constructions	<ul style="list-style-type: none"> • 605005 • 605006 • 605007

Please see appendix for additional details

This certificate and appendix is maintained and held in force through periodic review and verification.


Signed for BRE Global Ltd.

Laura Critien
Scheme Manager

20 January 2017
Date of Issue

20 January 2017
Date of First Issue

20 January 2020
Reassessment date

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To check the validity of this certificate please visit www.bregloballistings/check or contact us.

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Appendix to Certificate No: PTD1004
Coughlan Engineering (Tullamore) Ltd

Issue: 1.0

Products

Reference No.	Model	Description	U-value (W/m ² K)
605005	QF-WT-275	150mm cavity with Qwik-Fix 275mm wall tie	0.143
605006	QF-WT-300	175mm cavity with Qwik-Fix 300mm wall tie	0.173
605007	QF-WT-325	200mm cavity with Qwik-Fix 325mm wall tie	0.148

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Signed for BRE Global Ltd.

Laura Critien
Scheme Manager

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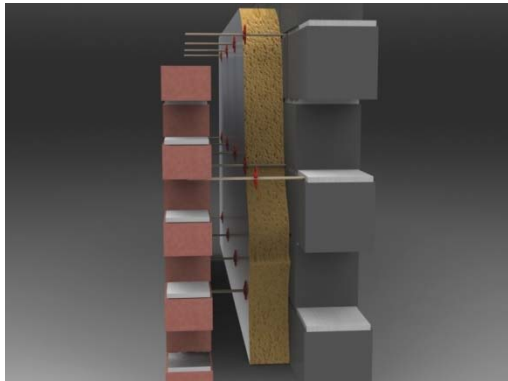
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QWIK-FIX™ GFRP WALL TIES

PRODUCT SPECIFICATION SHEET REV. 3 MAY 2016



1. TECHNICAL SPECIFICATION

1.1 DESCRIPTION

Qwik-Fix™ GFRP Wall Ties are thermally insulating, symmetrical, horizontal composite wall ties. They comprise pultruded glass fibres which are set into a matrix of vinyl ester resin. The ties have a coarse quartz finish to help ensure a good bond with the mortar joint and to help prevent moisture crossing the cavity. The ties are available in the sizes given in Tables 1 and 2 below for use in cavity widths ranging from 50mm to 200mm. The ties are nominally 4.8mm thick including the quartz coating (3mm without), 16mm wide, and they have a chevron-shaped profile.

Tie Type	Cavity Range	Recommended Length	Max Building Height (m)	Product Code
2	70-115mm	250mm	15	QF-WT-T2-250
2	120-145mm	275mm	15	QF-WT-T2-275
2	150-175mm	300mm	15	QF-WT-T2-300
2	180-200mm	325mm	15	QF-WT-T2-325

- Tie type classification as defined in BS 5628-1 : 2005 and Eurocode 6
- Care should be taken to ensure that the mortar joints are correctly aligned to ensure that the ties adequately fit into each leaf with a slight fall towards the outer leaf. Individual leaves may be coursed concurrently or separately
- In accordance with EN 845-1 : 2003, the declared minimum mortar joint thickness is 10mm.

1.2 QUALITY CONTROL

Quality control of the ties includes checks on incoming materials and regular visual and dimensional checks during and post manufacture, in line with CE Marking guidelines in relation to EN 845-1.

1.3 DELIVERY & SITE HANDLING

Qwik-Fix™ GFRP Wall Ties are delivered in bags of 100 ties. Care should be taken to avoid long term storage of the wall ties in areas of the site which are typically exposed to direct sunlight.

2. ASSESSMENT & TECHNICAL INVESTIGATIONS

2.1 GENERAL DESIGN CONSIDERATIONS

- 2.1 [a] The ties are suitable for use in new masonry walls with the heights and cavity widths given in Tables 1 & 2
- 2.1 [b] The ties must be used in accordance with Eurocode 6 and BS 5628-3: 2005
- 2.1 [c] The quartz coating of the ties acts as an effective drip to prevent water transfer across the cavity. The ties should be installed to allow a slight fall from inner leaf to outer leaf, to further prevent water transfer across the cavity.
- 2.1 [d] It is not normal practice for the ties to be installed across cavities less than 70mm wide. Where this does occur, it is important to ensure that requirements relating to weather tightness are met.
- 2.1 [e] Ties should be used at a minimum density of 2.5 per square metre (900mm horizontal by 450mm vertical centres). For ordering purposes, budget for at least 3 ties per square metre.
- 2.1 [f] Ties should be evenly distributed over the wall area and should preferably be staggered
- 2.1 [g] At the vertical edges of an opening, unreturned or un-bonded edges, and at vertical expansion joints, ties should be used at 300mm vertical centres, located not more than 225mm from the edge.

2.2 PRACTICABILITY OF INSTALLATION

The ties are designed to be installed by a competent general builder, or a contractor, experienced with this type of product. They can be built easily into brickwork or block work during construction.

2.3 STRUCTURAL PERFORMANCE

- 2.3 [a] According to tests carried out generally in accordance with EN 845-1 : 2003, Qwik-Fix™ GFRP Type 2 Wall Ties are suitable for use in Light Duty and General Purpose applications.
- 2.3 [b] In testing generally in accordance with EN 846-5 [Methods of Test for Ancillary Components for Masonry : Part 5 - Determination of Tensile and Compressive Load Capacity and Load Displacement Characteristics of Wall Ties (Couplet Test)], failure in tension was determined by pull out from the masonry; in compression by buckling.

2.3 [c] The following are the manufacturer's declared values at Ultimate Load (N), assuming a worst case scenario, i.e. a 325mm long wall tie, used in a 200mm wide cavity. [Lucideon certificate numbers 2015/1-4].

	Declared Value	EN 845-1 Min. Required Value
Tension	5430 N	1800 N
Compression	2480 N	1300 N
Shear	2640 N	
Mean Displacement @ $\frac{1}{3}$ of Mean Load Capacity	0.62 mm	

2.4 BEHAVIOUR IN RELATION TO FIRE

Guidance on the fire resistance of cavity walls is given in BS 5628-3 : 2001 and Eurocode 6. In a worst case configuration, Qwik-Fix™ Wall Ties achieved a 239 minute fire rating. [Efectis report EFR-15-U-003794].

2.5 THERMAL PERFORMANCE

The U-Value of a completed wall will depend on the selected insulation thickness, the insulating value of the substrate masonry and its internal finish. Calculations of thermal transmittance (U-Value), including corrections for wall ties (if required), should be carried out in accordance with EN ISO 6946 : 2007, using a thermal conductivity of 0.59 W/m.K for the wall ties. [National Physical Laboratory Report PP31/2016010220/1].

2.6 CONDENSATION RISK & WEATHER TIGHTNESS

Walls should be designed to limit the risk of interstitial and surface condensation. Guidance may be obtained from BS 5250 : 2002 and BRE report (BR 262 : 2002) *Thermal insulation : avoiding risks*

The water shedding detail of the Qwik-Fix™ GFRP Wall Ties is effective in preventing the transfer of water across the ties to the inner leaf. The chevron profiled wall ties should be installed so that the "hump" in the middle is pointing upwards. Failure to do so will create a channel for moisture to travel across the cavity.

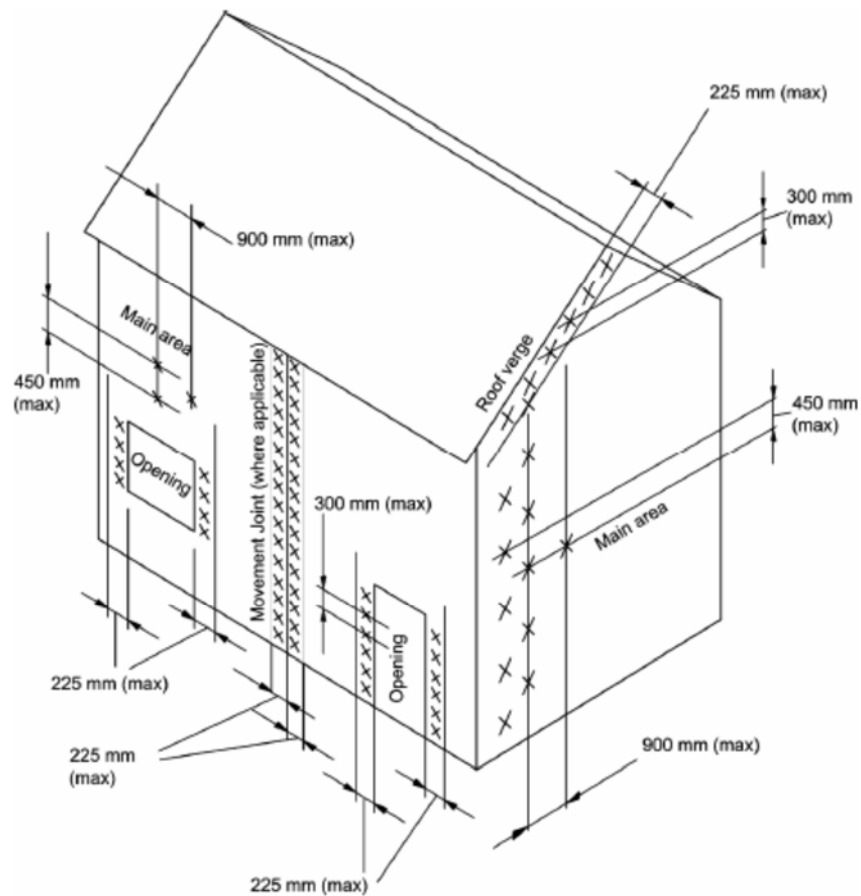
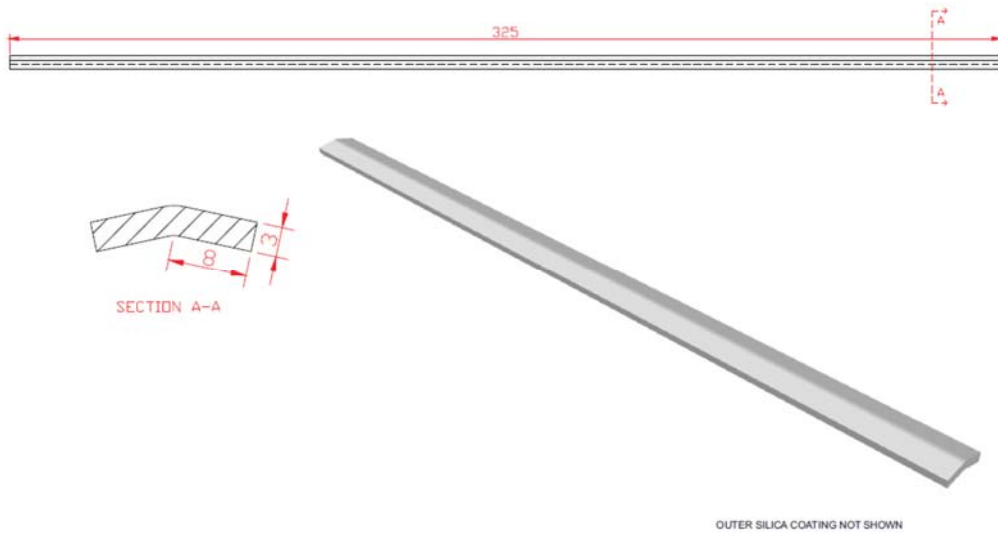
2.7 MAINTENANCE & DURABILITY

The ties are resistant to corrosion and are contained within the cavity. Therefore, they require no maintenance. Prolonged exposure of the ties to direct sunlight should be avoided, if possible. The ties will not be adversely affected by mortar (including those incorporating conventional mortar admixtures) or cavity insulation materials. The ties should have a service life of not less than 60 years.

3. INSTALLATION

3.1 GENERAL CONSIDERATIONS & SPACING

Qwik-Fix™ GFRP Wall Ties should be installed in accordance with the requirements of BS 5628-3 : 2005, Eurocode 6 and as per the instructions detailed in this document.



3.2 PROCEDURE

Qwik-Fix™ GFRP Wall Ties should be sandwiched between mortar in joints of 10-15mm design thickness, ensuring the ties are fully covered. The minimum embedment length is 50mm but the *design* embedment length is 62.5mm. The middle of the chevron-profiled wall tie should be installed pointing upwards, as illustrated above. The wall ties are symmetrical at either end and should be installed substantially horizontally, at right angles to the wall, allowing for a slight fall from inner leaf to outer leaf. The coarse quartz coating acts as an effective moisture drip.

In partially filled cavities, insulation should be notched to fit closely around the ties. Insulation clips must be pushed up against the insulation to hold it securely against the inner leaf. Care should be taken to minimise the amount of mortar dropped into the cavity. The first run of ties should be laid one course above the damp-proof course. Other queries should be directed to info@qwikfixings.com