

Tiger Fixings

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Agrément Certificate
10/4735
Product Sheet 1

TIGER FIXINGS

TIGER WALL STARTER TIES

PRODUCT SCOPE AND SUMMARY OF CERTIFICATE

This Certificate relates to Tiger Wall Starter Ties, for tying new masonry walls to existing masonry walls.

AGRÉMENT CERTIFICATION INCLUDES:

- factors relating to compliance with Building Regulations where applicable
- factors relating to additional non-regulatory information where applicable
- independently verified technical specification
- assessment criteria and technical investigations
- design considerations
- installation guidance
- regular surveillance of production
- formal three-yearly review.

KEY FACTORS ASSESSED

Practicability of installation — the products are easy to install under normal site conditions using techniques common in building practice (see section 4).

Structural performance — the products can provide simple lateral support to masonry panels (see section 5).

Durability — the products and fixings will not be adversely affected by mortar or cavity insulation materials (see section 9).



The BBA has awarded this Agrément Certificate to the company named above for the products described herein. These products have been assessed by the BBA as being fit for their intended use provided they are installed, used and maintained as set out in this Certificate.

On behalf of the British Board of Agrément

Handwritten signature of Brian Chamberlain.

Brian Chamberlain
Head of Approvals — Engineering

Handwritten signature of Greg Cooper.

Greg Cooper
Chief Executive

Date of First issue: 22 February 2010

The BBA is a UKAS accredited certification body — Number 113. The schedule of the current scope of accreditation for product certification is available in pdf format via the UKAS link on the BBA website at www.bbacerts.co.uk

Readers are advised to check the validity and latest issue number of this Agrément Certificate by either referring to the BBA website or contacting the BBA direct.

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Regulations

In the opinion of the BBA, Tiger Wall Starter Ties, if used in accordance with the provisions of this Certificate, will meet or contribute to meeting the relevant requirements of the following Building Regulations:



The Building Regulations 2000 (as amended) (England and Wales)

Requirement: A1	Loading
Comment:	The products will contribute to the strength and stiffness of masonry walls provided the design of loads is in accordance with section 5.2 of this Certificate.
Requirement: B3(1)	Internal fire spread (structure)
Comment:	See section 7.1.
Requirement: C2	Resistance to moisture
Comment:	Wall joints constructed using the products will resist the passage of moisture to the inside of the building provided the weatherproofing detail is in accordance with section 6 of this Certificate.
Requirement: L1	Conservation of fuel and power
Comment:	The products will not significantly affect the thermal transmittance of the walls it joins. See section 3.5 of this Certificate.
Requirement: Regulation 7	Materials and workmanship
Comment:	The products are acceptable. See section 9 and the <i>Installation</i> part of this Certificate.
In addition to the contribution to which the product can make to meeting the relevant requirements, the following comment should be noted.	
Requirement: E1	Protection against sound from other parts of the building and adjoining buildings
Comment:	The effect of the products on sound transmission through walls has not been assessed. See section 3.5 of this Certificate.



The Building (Scotland) Regulations 2004 (as amended)

Regulation: 8(1)(2)	Fitness and durability of materials and workmanship
Comment:	The use of the products satisfies the requirements of this Regulation. See sections 8 and 9 and the <i>Installation</i> part of this Certificate.
Regulation: 9	Building standards – construction
Standard: 1.1 (a)(b)	Structure
Comment:	Wall joints made from this product will have satisfactory strength and stiffness provided the design loads are in accordance with section 5.2 of this Certificate.
Standard: 2.6	Spread to neighbouring buildings
Comment:	See section 7.1.
Standard: 3.10	Precipitation
Comment:	Wall joints, with reference to clauses 3.10.1 ⁽¹⁾⁽²⁾ , 3.10.2 ⁽¹⁾⁽²⁾ , and 3.10.3 ⁽¹⁾⁽²⁾ , constructed using the product will resist the passage of moisture to the inside of the building provided the weatherproofing detail is in accordance with section 6 of this Certificate.
Standard: 3.15	Condensation
Comment:	The risk of damage due to interstitial condensation, with reference to clauses 3.15.1 ⁽¹⁾⁽²⁾ and 3.15.4 ⁽¹⁾⁽²⁾ , will be minimal. See section 3.5 of this Certificate.
Standard: 6.2	Building insulation envelope
Comment:	The product, with reference to clause 6.2.4 ⁽¹⁾⁽²⁾ , will not significantly affect the thermal transmittance of the walls it joins. See section 3.5 of this Certificate.
Regulation: 12	Building standards – conversions
Comment:	All comments given for these products under Regulation 9, also apply to this Regulation, with reference to clause 0.12.1 ⁽¹⁾⁽²⁾ and Schedule 6 ⁽¹⁾⁽²⁾ . (1) Technical Handbook (Domestic). (2) Technical Handbook (Non-Domestic).
In addition to the contribution to which the product can make to meeting the relevant requirements, the following comment should be noted.	
Standard: 5.1	Resisting sound transmission to dwellings using appropriate constructions
Comment:	The effect of the product on sound transmission through walls has not been assessed. See section 3.4 of this Certificate.



The Building Regulations (Northern Ireland) 2000 (as amended)

Regulation: B2	Fitness of materials and workmanship
Comment:	The product is acceptable. See section 9 and the <i>Installation</i> part of this Certificate.
Regulation: B3(2)	Suitability of certain materials
Comment:	The product is acceptable. See section 8 of this Certificate.
Regulation: C4	Resistance to ground moisture and weather
Comment:	Wall joints constructed using the product will resist the passage of moisture to the inside of the building provided the weatherproofing detail is in accordance with section 6 of this Certificate.
Regulation: C5	Condensation
Comment:	The risk of damage due to interstitial condensation will be minimal. See section 3.5 of this Certificate.

Regulation:	D1	Stability
Comment:		Wall joints constructed with the product will have satisfactory strength and stiffness provided the design loads are in accordance with section 5.2 of this Certificate.
Regulation:	E4	Internal fire spread – Structure
Comment:		See section 7.1.
Regulation:	F2	Conservation measures
Comment:		The product will not significantly affect the thermal transmittance of the walls it joins. See section 3.5 of this Certificate.
In addition to the contribution to which the product can make to meeting the relevant requirements, the following comment should be noted.		
Regulation:	G2	Separating walls and separating floors
Regulation:	G3	Existing walls and floors which become separating walls and separating floors
Comment:		The effect of the product on sound transmission through walls has not been assessed. See section 3.4 of this Certificate.

Construction (Design and Management) Regulations 2007

Construction (Design and Management) Regulations (Northern Ireland) 2007

In the opinion of the BBA, there is no information in this Certificate which relates to the obligations of the client, CDM co-ordinator or planning supervisor, designer and contractors under these Regulations.

Non-regulatory Information

NHBC Standards 2008

NHBC accepts the use of Tiger Wall Starter Ties, when installed and used in accordance with this Certificate, in relation to *NHBC Standards*, Chapter 6.1 *External masonry walls*.

General

This Certificate relates to Tiger Wall Starter Ties for tying new masonry walls to existing masonry walls.

The ties may be used to provide simple lateral support to masonry wall panels in conversion, extension and new building work.

The ties are suitable for tying walls of up to three storeys high, ie up to 15 metres maximum, within the limits of this Certificate.

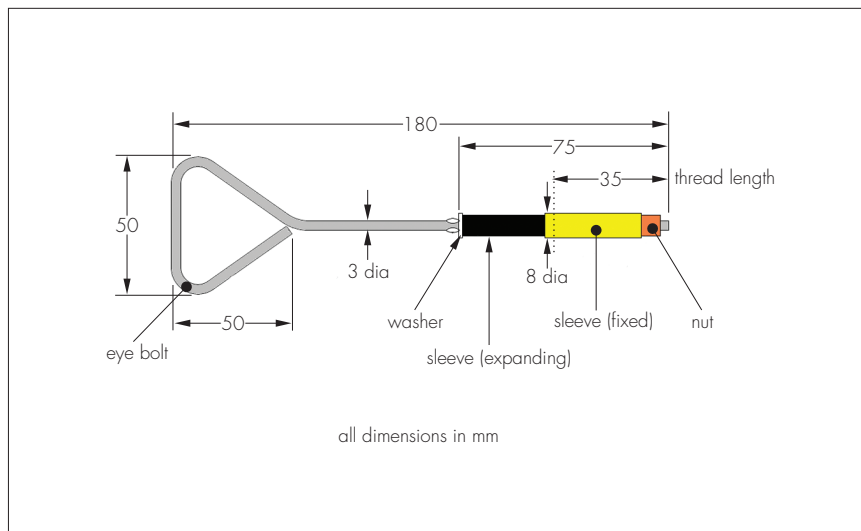
Technical Specification

1 Description

1.1 Tiger Wall Starter Ties are for use in walls with a cavity width of 50 mm. The ties are shown in Figure 1 and comprise:

- stainless steel tie and washers (grade 1.4301 to BS EN 10088-5 : 2009)
- polypropylene spacer
- EPDM sleeve
- knurled brass nut (grade CW614N to BS EN 12164 : 1998).

Figure 1 Tiger Wall Starter Tie



1.2 Tiger Wall Starter Ties are formed from stainless steel wire which is checked before manufacture for dimensional tolerance, chemical composition and mechanical properties. The finished products are checked visually and for dimensional quality.

2 Delivery and site handling

Tiger Wall Starter Ties are supplied in packs of 10 or boxes of 250. Each package carries the product identification code, fixing instructions and the BBA identification mark incorporating the number of this Certificate.

Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on Tiger Wall Starter Ties.

Design Considerations

3 General

3.1 Tiger Wall Starter Ties are suitable to tie new masonry walls of domestic housing and small commercial buildings of up to three storeys, maximum height 15 metres, to existing masonry walls. When used in two- or three-storey construction, the new wall must be effectively tied at the roof and intermediate floor level in accordance with the recommendations of BS 5628-3 : 2005.

3.2 The product may be used for internal and external walls, the one size being suitable for new walls ranging from 60 mm to 250 mm thick.

3.3 Use of the system obviates the need for conventional tothing or bonding.

3.4 The product has not been assessed for use where particular sound insulation properties are required; therefore separating walls incorporating the wall extension profiles should be tested to show compliance with the relevant Building Regulations.

3.5 The construction of a new external wall, whether jointed by traditional tothing and bonding or by the use of a Tiger Wall Starter Tie, will create a thermal bridge through the original wall. The use of any Tiger Wall Starter Tie used at this junction will not significantly affect the U value of the wall. Extensions should always be designed in accordance with BS 5250 : 2002 and, where necessary, appropriate insulation included in the construction to minimise the risk of local condensation, particularly if the new wall is of solid construction.

4 Practicability of installation

The products are designed to be installed by a competent general builder, or a contractor, experienced with these types of product. They are easy to install under normal site conditions using techniques common in building practice.

5 Structural performance

5.1 Tiger Wall Starter Ties are for use in providing simple lateral support to masonry panels, as defined in, and in the context of, BS 5628-1 : 2005.

5.2 The design shear strength of extension profiles, when fixed to existing masonry in accordance with sections 5.1, 10, 11 and 12 of this Certificate, may be taken as 1.87 kN (0.17 kN per tie) over the height of one storey, ie 2400 mm with the ties spaced at a maximum of 225 mm. Where greater density and shear strength is required over one storey, the spacing between the ties can be reduced.

5.3 The design shear strength given in section 5.2 relates to existing masonry of solid clay bricks, solid dense and lightweight aggregate concrete blocks and solid aerated concrete blocks of minimum crushing strength $3.5 \text{ N}\cdot\text{mm}^{-2}$.

5.4 In accordance with BS 5628-1 : 2005, the reaction along the edge of the wall may normally be assumed to be uniformly distributed.

5.5 As with conventional tothing and bonding, the designer must ensure that the existing wall has adequate strength, stability and integrity to accommodate the new wall. The effect of any proposed modification to the existing wall, such as weather resisting measures (see section 6), must also be checked.

5.6 The starter ties should not be specified where differential movements are expected to take place between the walls.

5.7 The system has not been assessed for use where the masonry fixings will be subject to direct tensile load.


5.8 In addition to the requirements directly referred to in this Certificate, structures of brickwork or blockwork, in which the system is incorporated, must be designed and constructed to comply with one of BS EN 1996-1-1 : 2005, BS 5628-1 : 2005 and BS 5628-3 : 2005, or

England and Wales — Approved Document A1/2, Section 1, Part C


Scotland — Mandatory Standards, Part C *Small Buildings Guide*

Northern Ireland — Technical Booklet D *Structure*.

6 Weathertightness


 Where required, in common with other wall extension systems and conventional tothing or bonding methods, additional protection from moisture penetrating to the inside of the building should be considered. The measures adopted must deflect water away from the joint and help prevent moisture from being transmitted through the existing masonry wall. It must also shed moisture that may penetrate the perpend joint to the bottom of the new cavity wall.

7 Performance in relation to fire


 7.1 Where a wall is subject to fire resistance requirements, an appropriate assessment or test must be carried out by a United Kingdom Accreditation Service (UKAS) accredited laboratory for the test concerned.

7.2 It is important to ensure that any gaps between the existing wall and each leaf include a continuous seal of either mortar or a proprietary intumescent sealant (not covered by this Certificate) to retard the spread of fire or smoke.

8 Maintenance

 During routine maintenance, the sealant joint should be checked. If necessary the joint must be raked out and remade (see section 6).

9 Durability

 The profiles and fixings will not be adversely affected by mortar (including those incorporating conventional mortar admixtures) or cavity insulation materials.

Installation

10 General

10.1 Tiger Wall Starter Ties must be installed according to the Certificate holder's instructions.

10.2 The existing masonry must be structurally sound with a flat, vertical surface.

10.3 For cavity wall construction wall connectors must be used with each leaf.

10.4 For external walls the vertical joint between the existing wall and the outer leaf of the wall must be weathersealed as detailed in section 6.

10.5 The ties must be positioned so that they are on the centre line of the new masonry wall. For cavity walls, the required cavity width and the thickness of each masonry leaf will need to be taken into account.

11 Preparation

Any rendered or pebble-dash finish should be removed to ensure that the ties are fixed directly to the existing masonry.

12 Procedure

12.1 A plumb line is marked on the existing wall at the centre of the proposed wall to aid the alignment of the fixings.

12.2 If required, preparation is made for any weather-resisting measures (see section 6).

12.3 Holes are drilled in the wall along the marked centre-line. The wall connectors are spaced vertically at a maximum of every three courses of brickwork (nominally 225mm).

12.4 The ties are placed into the drilled holes starting with the lowest connector and working upwards.

12.5 The ties are aligned and tightened.

12.6 The procedures outlined in sections 12.4 and 12.5 are repeated for the other ties.

12.7 Brickwork or blockwork for the new wall is laid in the conventional way, with a full mortar joint between the existing and the new walls. As the bricks are laid, ties are adjusted into position to sit on a mortar course of the new wall (see Figure 2). Further mortar is applied over the top so that the ties are completely surrounded by mortar.

12.8 When specified, at the completion stage of the new wall, the impregnated foam sealing strip or polymer-based sealant is inserted at the junction perpend (see section 6).

12.9 If required, the additional weather-resisting measures are inserted (see section 12.2).

Technical Investigations

13 Tests

Tests were carried out to establish:

- load–deflection characteristics of the component parts
- load–deflection characteristics of laterally loaded wallettes.

14 Other investigations

14.1 Calculations were made and examined in conjunction with the results of the load–deflection tests referred to above, to establish structural performance.

14.2 The manufacturing process was examined, including the methods adopted for quality control, and details were obtained of the quality and composition of the materials used.

Bibliography

BS 5250 : 2002 *Code of practice for control of condensation in buildings*

BS 5628-1 : 2005 *Code of practice for the use of masonry — Structural use of unreinforced masonry*

BS 5628-3 : 2005 *Code of practice for the use of masonry — Materials and components, design and workmanship*

BS EN 1996-1-1 : 2005 *Eurocode 6 : Design of masonry structures — General rules for reinforced and unreinforced masonry structures*

BS EN 10088-5 : 2009 *Stainless steels — Technical delivery conditions for bars, rods, wire, sections and bright products of corrosion resisting steels for construction purposes*

BS EN 12164 : 1998 *Copper and copper alloys — Rod for free machining purposes*

BS EN 10327 : 2004 *Continuously hot-dip coated strip and sheet of low carbon steels for cold forming — Technical delivery conditions*

15 Conditions

15.1 This Certificate:

- relates only to the product/system that is named and described on the front page
- is granted only to the company, firm or person named on the front page — no other company, firm or person may hold or claim any entitlement to this Certificate
- is valid only within the UK
- has to be read, considered and used as a whole document — it may be misleading and will be incomplete to be selective
- is copyright of the BBA
- is subject to English law.

15.2 Publications and documents referred to in this Certificate are those that the BBA deems to be relevant at the date of issue or re-issue of this Certificate and include any: Act of Parliament; Statutory Instrument; Directive; Regulation; British, European or International Standard; Code of Practice; manufacturers' instructions; or any other publication or document similar or related to the aforementioned.

15.3 This Certificate will remain valid for an unlimited period provided that the product/system and the manufacture and/or fabrication including all related and relevant processes thereof:

- are maintained at or above the levels which have been assessed and found to be satisfactory by the BBA
- continue to be checked as and when deemed appropriate by the BBA under arrangements that it will determine
- are reviewed by the BBA as and when it considers appropriate.

15.4 In granting this Certificate, the BBA is not responsible for:

- the presence or absence of any patent, intellectual property or similar rights subsisting in the product/system or any other product/system
- the right of the Certificate holder to manufacture, supply, install, maintain or market the product/system
- individual installations of the product/system, including the nature, design, methods and workmanship of or related to the installation
- the actual works in which the product/system is installed, used and maintained, including the nature, design, methods and workmanship of such works.

15.5 Any information relating to the manufacture, supply, installation, use and maintenance of this product/system which is contained or referred to in this Certificate is the minimum required to be met when the product/system is manufactured, supplied, installed, used and maintained. It does not purport in any way to restate the requirements of the Health & Safety at Work etc Act 1974, or of any other statutory, common law or other duty which may exist at the date of this Certificate; nor is conformity with such information to be taken as satisfying the requirements of the 1974 Act or of any statutory, common law or other duty of care. In granting this Certificate, the BBA does not accept responsibility to any person or body for any loss or damage, including personal injury, arising as a direct or indirect result of the manufacture, supply, installation, use and maintenance of this product/system.