

# Helifix StarTie

## Building Product Information Sheet

Helifix StarTie are made from stainless steel helical bar<sup>1</sup>, and are intended for use as wall ties when tying a new masonry veneer to a new or existing structural wall. StarTie are identified by a Hi-Fin helical, one-piece design with "Helifix" printed at regular intervals along their length. They are manufactured from Grade 304 or (as standard) Grade 316 austenitic stainless steel and exhibit a nominal (measured fin edge to fin edge) 8mm diameter and 10.0mm<sup>2</sup> cross-sectional area.

StarTie are available in different lengths, 155mm to 350mm as standard, and are specified by reference to product code, size and length (eg. HDF 8 x 350).

### Composition

- StarTie are manufactured from austenitic stainless steel helical bar.

### Supporting documentation

- Product details and recommended installation procedures are presented in supporting technical documentation. Refer to ST01 StarTie product information sheet, and installation detail marked ANZ-ST02. Available from: <https://helifix.co.nz/downloads>

### Product Identifier

- StarTie

### Relevant Building Code clauses:

- Clause B1 Structure — B1.3.1, B1.3.2, B1.3.3, B1.3.4
- Clause B2 Durability — B2.3.1
- Clause E2 External Moisture — E2.3.2
- Clause F2 Hazardous Building Materials — F2.3.1

### Contributions to Compliance:

#### Clause B1 Structure

- StarTie will contribute to compliance when used as intended as a wall tie in new build masonry veneer construction and subject to the specific engineering design of a Certified Practising Engineer. StarTie have been tested to AS/NZS 2699.1:2000, Appendix A for use as Type B seismic-resistant veneer ties. Testing involved connections formed between new build brick and timber frame. Specimens incorporated a 75mm cavity, the maximum allowable under NZS 4210 and in keeping with a conservative testing regime. Results and specimen details are presented in Table 1. Results demonstrate capacity conforming to an earthquake medium duty (EM) classification when using the selected materials and cavity width.

#### Clause B2 Durability

- StarTie manufactured from Grade 316 stainless steel comply with AS/NZS2699.1: 2000, Clause 2.4.4 with a durability classification of R4 assessed against Table 4.

### Manufacturer and Importer Details:

<b>Place of Manufacture:</b>	Overseas
<b>Manufacturer:</b>	Leviat Limited, The Mille, 1000 Great West Road, Brentford, TW8 9DW, United Kingdom
<b>Manufacturer Email:</b>	sales.helifix.uk @leviat.com
<b>Importer Name:</b>	Leviat New Zealand Limited
<b>Importer Address:</b>	246D James Fletcher Drive, Otahuhu, Auckland, 2024
<b>Importer Website:</b>	www.leviat.com/en-nz
<b>Importer Email:</b>	info.nz@leviat.com
<b>Importer Phone:</b>	+64 9 276 2236
<b>Importer NZBN:</b>	9429031339056

#### Notes:

<sup>1</sup> StarTie are manufactured from the same material used for Helifix remedial wall ties. See DryFix, RetroTie, Resitie and BowTie.

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### Clause E2 External Moisture

- StarTie utilise a helical, one-piece design that supports multiple drip points to resist the cross-cavity transfer of water.

### Clause F2 Hazardous Building Materials

- F2.3.1.** StarTie meet the performance requirements under Clause F2.3.1.

### Limitations on the use of the building product:

- StarTie installation will require the penetration any building paper or water-proofing materials that might be affixed to the cavity-side face of the structural wall.
- The resistance to water transfer of StarTie has not been tested to AS/NZS 2699.1:2000, Appendix E. However, comparable testing during initial product development was conducted using 4.5mm diameter Helifix ties (i.e. ties most vulnerable to transfer) and water flowing down the face of brick couplets. The results demonstrate that, when not first wetted, a Helifix 4.5mm tie will not visibly transfer water unless inclined at 26o to the horizontal. StarTie are expected to exceed this demonstrated performance due to the larger helical profile. Note, StarTie installed following standard procedures will sit at a right-angle to the plane of the masonry.

### Design requirements to support appropriate use:

- StarTie shall be used in accordance with the specific engineering design of a Chartered Professional Engineer. Guidelines helpful to design are presented in AS/NZS 2699.1, NZS 4210 and NZS 4230.
- Load-testing shall be used to assess attainable pull-out load capacity and to inform the specific engineering design if installing into materials that differ from those tested under laboratory conditions.
- Testing of attainable pull-out loads can be conducted on site using a Helifix Load Test Unit. The unit allows static tensile proof loading to a maximum of 3kN.
- Proof-testing of attainable loads may be conducted during the course of the project to the satisfaction of the designer and to encourage a consistent result.

### Installation requirements:

- StarTie shall be installed by a competent contractor in accordance with Leviaat installation guidelines and the specific engineering design and guidance of the designer.
- Light-weight, hand-held tooling shall be used during construction to minimise aesthetic and structural damage to the structural wall, and to ensure efficacy of the tie.
- Installation guidelines, including drilling and load-testing guidelines, are available in the supporting technical documentation.

### Maintenance requirements:

- Maintenance of the system will not normally be required during the expected life of the system.

### Warnings or ban:

- This product is not subject to any warning or ban under section 26 of the Building Act 2004.

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### Appendix 1:

**Table 1.** Testing in accordance with AS/NZS 2699.1:200, Appendix A, Method for determining the stiffness and strength of type B veneer ties<sup>1,2</sup>

Test Type	Outer Leaf and Connection Type	Cavity Width	Inner Leaf and Connection Type	Axial Stiffness (kN/mm)	Axial Strength (kN)	Residual Strength (kN)	Classification <sup>1</sup>
Type B non-flexible veneer tie <sup>3</sup> Example New Build Application	Brick Couplet – Ties set in mortar joint	75mm	90mm Timber stud -- Drive-in connection	0.684	1.444	1.576	EM

#### Table Notes:

- 1 AS/NZS 2699.1:2000 provides two methods for testing wall tie capacity. Appendix A to the standard details a cyclic dynamic loading test program and procedures for measuring wall tie strength and stiffness. By this method tie strength is measured as the tension load resisted following cyclic displacement along the axis of the tie, and stiffness as the average of the tensile and compressive forces resisted at defined deflection limits. The standard refers to ties tested to these conditions as Type B seismic-resistant veneer ties and allows for their classification as either earthquake light (EL), earthquake medium (EM) or earthquake heavy (EH) duty. The method also provides for the classification of Type B remedial ties.
- 2 Testing conducted at the University of Newcastle (Project reports A/520 March 2011, and A/559 March 2012). Specimens were prepared variously using 8mm Helifix wall ties, radiata pine No.1 framing grade timber, 450mm lengths of steel studs, solid clay bricks supplied by Austral bricks (Product Code and Name: 8240-1, Dry Press Common, (l) 230mm x (w) 110mm x (h) 75mm).
- 3 Type B non-flexible veneer tie – “a tie, including its fixings or anchorages, used to transfer face loads between a masonry veneer and a structural backing, while being capable of accommodating differential in-plane horizontal and vertical movements between the attached elements, during which time the cavity width may vary” (AS/NZS2699.1:2000, pg.7).