



Manufacturing Suppliers Limited,  
 560 Rosebank Road,  
 Avondale 1026,  
 Auckland,  
 New Zealand

2<sup>nd</sup> October 2014

WARRANTOR: **MANUFACTURING SUPPLIERS LTD (MSL)**

PRODUCT OF WARRANTY:

Product Name	Wall Bracing(kN)*	Retro Pile Fixing(kN)**
95mm FORTRESS® BRACING BRACKET	4.22	17.4

\*Bottom plate movement in plane direction result    \*\* Torsional uplift movement direction separating bearer from pile

- All product drawings, specifications and reports have been independently reviewed to ensure they meet full specification at pre-manufacturing stage
- FORTRESS® Bracing Bracket kit which includes the FORTRESS® Screw Bolt which has a BRANZ Appraisal No.687 (2010) Amended June 2013 states the FORTRESS® Screw Bolt has full compliance with NZS 3604:2011 Section 7.5.12.2,3,4 for use in header block and standard bottom plate fixing.
- As stipulated in BRANZ appraisal certificate No 294 for GIB® Bracing Systems “Proprietary Fixings with a minimum characteristic strength of 15kN may be used”
- Post sales transaction, MSL is not liable for any product that has been damaged or come into contact with any substance, chemical or otherwise, that may cause the product/s to inherently corrode and/or effect its structural integrity.
- MSL provides a warranty that our product noted above meets the requirements of NZS3604:2011 –Timber-framed buildings
- MSL provides a warranty for the FORTRESS® Bracing Bracket, when it has been installed and used according to the various board manufacturers’ guidelines, including bracing elements.
- MSL also provides warranty for the use of the FORTRESS® Bracing Bracket in GIB EZYBRACE System.

**Verification of Warranty**

**Daniel Lawrence**  
 Business Development Manager



SGS New Zealand Ltd, NDT & Materials Services  
 P O Box 13-518, Onehunga, Auckland, New Zealand  
 17-19 Maurice Road, Onehunga, Auckland, New Zealand  
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File Ref: INZ 45438

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**TEST CERTIFICATE No.: INZ45438-02**

Client: Fortress Fasteners  
 Order No.: Daniel  
 Sample Description: Timber / bracing bracket assembly as supplied  
 Identification: As below  
 Material Specification: Not supplied  
 Tested in accordance with: As per client instruction

**TEST:** Load has been applied to the fixed assembly as per below setup.  
 Maximum load achieved was recorded.

**RESULTS:**

Sample ID	Maximum load (kg)	Findings
# 1	430	Concrete base fractured, bracket slightly deformed
# 2	260	Bracket heavily deformed



Samples as supplied

Samples after the test

Acceptance Criteria: Report findings

Tested by: T. Qiu

Date: 10-Dec-13

Checked by: W. Chen

Date: 10-Dec-13

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INZF109



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File Ref: INZ 46432

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**TEST CERTIFICATE No.: INZ46432-01**

Client: Fortress Fasteners  
 Order No.: Daniel  
 Sample Description: Sub-floor retro pile fixing assembly as supplied  
 Identification: Not supplied  
 Material Specification: N/A  
 Tested in accordance with: As per client instruction

**TEST:** Two 140x45mm bearers placed side-by-side were fixed by two connectors on each side of 100x100mm pile. The assembly was prepared by the client.

Load was applied along the axis of the pile to separate the assembly.  
 Maximum breaking load of the connection was recorded.

**RESULT:**

Maximum breaking load: 17.4 kN  
 Findings: Screw head sheared off



Assembly setup



Failure after loading

Acceptance Criteria: Report findings

Tested by: T. Qiu

Date: 12-Mar-14

Checked by: N. Woods

Date: 12-Mar-14

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