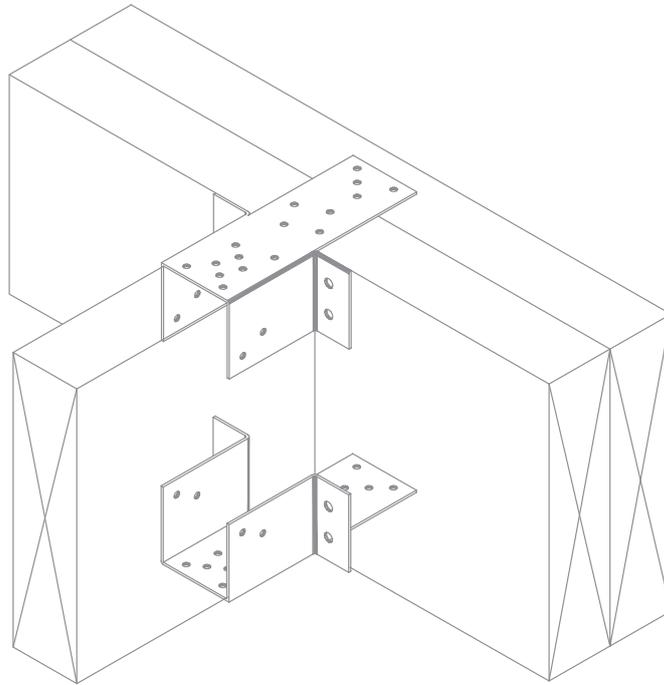


## BRANZ Appraised

Appraisal No. 907 [2016]

## JOIST GRIPPA BRACKETS



Appraisal No. 907 [2016]

### BRANZ Appraisals

Technical Assessments of products for building and construction.



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### BRANZ

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## Product

- 1.1 Joist Grippa stainless steel brackets are to connect boundary joists to joists or nogs (blocking) where timber deck cantilever balustrade posts are used for barriers.

## Scope

- 2.1 Joist Grippa brackets have been appraised as an alternative connection of boundary joists to floor joists or nogs as described in NZS 3604, Figures 7.10 [b] and 7.10 [c] for timber framed structures designed in accordance with NZS 3604.
- 2.2 Joist Grippa brackets can be used as part of the specific design of posts and balustrades.

## Building Regulations

### New Zealand Building Code (NZBC)

- 3.1 **In the opinion of BRANZ, the Joist Grippa brackets if designed, used, installed and maintained in accordance with the statements and conditions of this Appraisal, will meet the following provisions of the NZBC:**

**Clause B1 STRUCTURE:** Performance B1.3.1, B1.3.2 and B1.3.4. Joist Grippa brackets meet the requirements for loads arising from self-weight, imposed gravity loads arising from use, wind, and impact [i.e. B1.3.3 [a), [b), [h) and [j)]. See paragraphs 8.1 – 8.2.

**Clause B2 DURABILITY:** Performance B2.3.1 [a) not less than 50 years, and B2.3.2. Joist Grippa brackets meet these requirements. See paragraph 9.1.

**Clause F2 HAZARDOUS BUILDING MATERIALS:** Performance F2.3.1. Joist Grippa brackets meet this requirement and will not present a health hazard to people.

**Clause F4 SAFETY FROM FALLING:** Performance F4.3.1, F4.3.4 [c) and F4.3.4 [d). Joist Grippa brackets contribute to meeting these requirements when used with posts and balustrades to construct barriers. See Paragraphs 7.1 - 7.2.

- 3.2 This is an Appraisal of an **Alternative Solution** in terms of New Zealand Building Code compliance.

## Technical Specification

- 4.1 Joist Grippa brackets are manufactured from 1.1 mm thick, grade 304 stainless steel and pre-drilled with fixing holes.
- 4.2 The fixings supplied for use with the Joist Grippa brackets are manufactured from grade 316 stainless steel, as follows:
- 30 x 3.15 mm annular grooved nails.
  - 14g x 35 mm tek screws.
  - 14g x 75 mm tek screws.

## Handling and Storage

- 5.1 Joist Grippa brackets and their fasteners are durable products, but should be stored in covered and dry conditions until they are installed.

## Technical Literature

- 6.1 Refer to the Appraisals listing on the BRANZ website for details of the current Technical Literature. The Technical Literature must be read in conjunction with this Appraisal. All aspects of design, use, installation and maintenance contained in the Technical Literature and within the scope of this Appraisal must be followed.

## Design Information

- 7.1 New Zealand Building Code Clause F4.3.1 requires a barrier where people could fall 1 metre or more. Where timber decks or balconies are to support cantilever balustrades, NZS 3604, Paragraph 7.4.1.3 prescribes deck joist connections. Joist Grippa brackets are an alternative method of connection to provide the rigidity and strength for the support of cantilever balustrade posts.
- 7.2 Joist Grippa brackets have been tested and assessed for the barrier loads given in AS/NZS 1170.1.
- 7.3 The structural information given below is for structures constructed with joists and nogs with a minimum size of 190 x 45 mm and for timber of grade SG8 or greater.

## Structure

### NZS 3604 Structures

- 8.1 Joist Grippa brackets may be used as an alternative to the connection details given in NZS 3604, Figures 7.10 [b] and 7.10 [c]. They replace the 6 kN nail straps and the M12 coach screws given in these details. The maximum spacing between posts is given in Table 1. These are given for two different barrier heights.

### Specific Design Structures

- 8.2 The maximum post spacing for internal or external barriers are given in Table 1. The infills between barrier posts must be subject to specific design to ensure that deflection and strength limits are met for these also.

**Table 1: Maximum spacing between posts for structures constructed with Joist Grippa brackets**

Barrier Height [m]	Internal Use	External Use
1.0	3.4 m	1.6 m
1.1	3.0 m	1.4 m

## Durability

- 9.1 Joist Grippa brackets and fixings are manufactured from stainless steel and meet the requirements of NZS 3604, Tables 4.1 and 4.3. They will have an expected serviceable life of at least 50 years.

## Maintenance

- 10.1 Joist Grippa brackets and fixings should not require any maintenance once installed. All deck structures should be regularly checked for the condition of timber and fixings.

## Installation Information

### Installation Skill Level Requirement

11.1 Installation of the Joist Grippa brackets can be carried out by any building contractor.

### Installation

12.1 The installation of Joist Grippa brackets must be in accordance with the instructions given in the Technical Literature. All nails and screws must be fixed through the appropriate holes in the Joist Grippa brackets.

### Health and Safety

13.1 Suitable care must be taken when handling power and hand tools, and when handling treated timber.

## Basis of Appraisal

The following is a summary of the technical investigations carried out:

### Tests

14.1 Testing was carried out by BRANZ on simulated deck barriers using Joist Grippa brackets to determine their structural strength.

### Other Investigations

15.1 A structural opinion has been provided by BRANZ technical experts.

15.2 A site visit has been carried out by BRANZ to assess the practicability of installation, and to examine completed installations.

15.3 The Technical Literature has been examined by BRANZ and found to be satisfactory.

### Quality

16.1 Details regarding the composition of the materials used were obtained by BRANZ and found to be satisfactory.

16.2 The quality of materials, components and accessories supplied by Mattoni Holdings Limited is the responsibility of Mattoni Holdings Limited.

16.3 Quality on site is the responsibility of the installer.

16.4 Designers are responsible for the building design, and building contractors are responsible for the quality of installation of Joist Grippa brackets in accordance with the instructions of Mattoni Holdings Limited.

16.5 Building owners are responsible for the maintenance of timber decks and structures incorporating Joist Grippa brackets.

### Sources of Information

- AS/NZS 1170.1:2002 Structural design actions – Part 1: Permanent, imposed and other actions.
- NZS 3604:2011 Timber framed buildings.
- Ministry of Business, innovation and Employment Record of Amendments for Compliance Documents and Handbooks.
- The Building Regulations 1992.



In the opinion of BRANZ, **Joist Gripa Brackets** are fit for purpose and will comply with the Building Code to the extent specified in this Appraisal provided they are used, designed, installed and maintained as set out in this Appraisal.

The Appraisal is issued only to **Mattoni Holdings Limited**, and is valid until further notice, subject to the Conditions of Appraisal.

### Conditions of Appraisal

1. This Appraisal:
  - a) relates only to the product as described herein;
  - b) must be read, considered and used in full together with the Technical Literature;
  - c) does not address any Legislation, Regulations, Codes or Standards, not specifically named herein;
  - d) is copyright of BRANZ.
2. **Mattoni Holdings Limited:**
  - a) continues to have the product reviewed by BRANZ;
  - b) shall notify BRANZ of any changes in product specification or quality assurance measures prior to the product being marketed;
  - c) abides by the BRANZ Appraisals Services Terms and Conditions.
  - d) Warrants that the product and the manufacturing process for the product are maintained at or above the standards, levels and quality assessed and found satisfactory by BRANZ pursuant to BRANZ's Appraisal of the product.
3. BRANZ makes no representation or warranty as to:
  - a) the nature of individual examples of, batches of, or individual installations of the product, including methods and workmanship;
  - b) the presence or absence of any patent or similar rights subsisting in the product or any other product;
  - c) any guarantee or warranty offered by **Mattoni Holdings Limited**.
4. Any reference in this Appraisal to any other publication shall be read as a reference to the version of the publication specified in this Appraisal.
5. BRANZ provides no certification, guarantee, indemnity or warranty, to **Mattoni Holdings Limited** or any third party.

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For BRANZ



**Chelydra Percy**

Chief Executive

Date of Issue:

17 May 2016