



## BRANZ Appraised

Appraisal No. 546 [2017]

## PASLODE NAILS

### Appraisal No. 546 [2017]

This Appraisal replaces BRANZ Appraisal No. 546 [2012].



### BRANZ Appraisals

Technical Assessments of products for building and construction.



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## Product

- 1.1 Paslode Nails covered by this Appraisal include bright steel wire nails, mechanically galvanised nails, hot dipped galvanised nails, coated hot dipped galvanised nails, and stainless steel nails. Paslode Nails are available in collated format, in a range of sizes, and are designed for use with Paslode nail guns or with manual fixing.

## Scope

- 2.1 This Appraisal covers the material durability performance of different Paslode Nails when used in timbers with different treatments, treated in accordance with NZS 3640 and used in accordance with NZS 3602, to comply with the New Zealand Building Code [NZBC] durability requirements. Timber treatments assessed include copper chrome arsenate [CCA], copper azole [CuAz], alkaline copper quaternary [ACQ] and light organic solvent preservative [LOSP].

## Building Regulations

### New Zealand Building Code [NZBC]

- 3.1 In the opinion of BRANZ, Paslode Nails, if used, installed and maintained in accordance with the statements of this Appraisal, will meet or contribute to meeting the following provisions of the NZBC:

**Clause B1 STRUCTURE:** Performance B1.3.1, B1.3.2 and B1.3.4. Paslode Nails contribute to meeting this requirement for the relevant loads from B1.3.3. See Paragraph 7.1.

**Clause B2 DURABILITY:** Performance B2.3.1 [a] not less than 50 years and B2.3.1 [b] 15 years. Paslode Nails meet these requirements. See Paragraphs 8.1 - 8.3.

**Clause F2 HAZARDOUS BUILDING MATERIALS:** Performance F2.3.1. Paslode Nails meet this requirement and do not present a health hazard to people.

## Technical Specification

### Description

4.1 The Paslode Nails come in a variety of types and sizes. The nails covered by this Appraisal are as detailed in Table 1 below.

**Table 1: Paslode collated nails sizes and descriptions**

Material	Sizes (mm)	Description
Bright Steel	50 x 2.87	D-head, smooth shank
	65 x 2.87	D-head, smooth shank
	75 x 3.06	D-head, smooth shank
	88 x 3.15	D-head, smooth shank
	90 x 3.15	D-head, smooth shank
Mechanically Galvanised Steel	38 x 3.30	Round head, ring shank
	44 x 3.15	D-head, smooth shank
Hot Dipped Galvanised Steel	50 x 2.87	Round head, smooth shank
	50 x 2.87	D-head, smooth shank
	60 x 2.87	Round head, ring shank
	60 x 2.87	D-head, ring shank
	65 x 2.87	Round head, ring shank
	65 x 2.87	D-head, ring shank
	75 x 3.06	Round head, ring shank
	75 x 3.06	D-head, ring and smooth shank
	88 x 3.15	D-head, smooth shank
90 x 3.15	D-head, smooth shank	
Hot dipped galvanised with black coating	50 x 2.50	Round head, ring shank
Stainless steel	50 x 2.80	Round head, ring shank
	50 x 2.87	D-head, ring shank
	55 x 2.87	Round head, ring shank
	65 x 2.87	D-head, ring shank
	75 x 3.06	round head, ring shank
	90 x 3.15	D-head, ring shank

4.2 The Paslode nail packaging has different coloured labels for the different nail types as described in Table 2.

**Table 2: Collated nails label descriptions**

Nail Material	Label Colour
Bright steel	White
Mechanically galvanised steel	Tan
Hot dipped galvanised steel, with and without black coating	Yellow
Stainless steel	Red

4.3 Collated Paslode Nails for use with Paslode Nail guns are generally collated together with paper strips down both sides of the nails, however some of the nails are collated together with plastic.

4.4 Only Paslode nailing tools, as supplied by Paslode New Zealand, are to be used to install Paslode collated nails. The Paslode nail guns have not been assessed by BRANZ and are outside the scope of this Appraisal.



## Handling and Storage

- 5.1 Paslode Nails should be stored in a clean, dry area until they are used.

## Technical Literature

- 6.1 No specific Technical Literature is referenced by this Appraisal.

## Design Information

### Structure

- 7.1 Connections incorporating Paslode Nails must be designed and installed in accordance with the relevant non-specific design standards, e.g. NZS 3604, or as specified by specific engineering design to the relevant loading and design standards.
- 7.2 Where a proprietary system manufacturer specifies standard nails, permission must be obtained from them before Paslode Nails are substituted.

### Durability

- 8.1 Paslode Nails are expected to have a serviceable life of at least 15 or 50 years (depending on their use) provided that they are installed and maintained in accordance with this Appraisal.
- 8.2 Table 3 gives information on where each of the types of Paslode Nails identified in Table 1 may be used based on the timber use, the environment, the timber moisture content and the timber treatment. The Table is for Corrosion Zone B as defined by NZS 3604. Table 4 gives the same information for Corrosion Zones C and D as defined by NZS 3604.
- 8.3 If alkaline copper quaternary [ACQ]-based or copper azole [CuAz]-based treatments are used for timber hazard classes H3.2, H4 or H5 then only stainless steel fasteners should be used in exposed or sheltered locations in accordance with NZS 3604, Clause 4.4.4. There is very little of these timber treatments in use in New Zealand at this time, and most timber is treated with copper chrome arsenate [CCA].

### Maintenance

- 9.1 Paslode Nails need little or no maintenance in themselves. Where paint or coatings are required to ensure the required design life, then these must be maintained as per the relevant manufacturer's instructions.

## Installation Information

### Installation Skill Level Requirements

- 10.1 Paslode Nails are installed either with the aid of Paslode nailing tools or are manually fixed, and can be done so by any competent person.

### Health and Safety

- 11.1 Guidelines for the safe use of portable mechanically powered nailers and staplers are available from the Department of Labour, and all aspects of these should be followed when using nail guns.

**Table 3: Allowable nail uses for NZS 3604 Corrosion Zone B, not less than 50 years, collated nails.**

Use	Environment	Timber moisture content in use	H5	H4	H3.2	H3.1	H1.2	H1.1	Low-risk approved species, kiln-dried pine
Internal framing, ceiling joists and battens, internal beams	Assembled under full cover, never exposed to moisture/ weather, in-service use in air-conditioned or heated spaces	Less than 18%							
Roof trusses, exposed rafters and other roof framing	Minimum exposure to weather during construction, dry in-service environment	Less than 18%							
Internal finishing timbers and furniture requiring borer protection	Never exposed to construction moisture, in-service use in air-conditioned or heated spaces	Less than 18%							Timber not suitable for application
Sub-floor framing and floor joists supported on external walls	Exposed to construction moisture; increased risk of moisture	Less than 24% at close in, less than 20% in-service							Timber not suitable for application
Cavity battens	Possible wetting and drying	Periodically greater than 18%							Timber not suitable for application
Exterior trim or cladding	Exposed to weather but painted	Less than 18%. Assumes effective coating system							Timber not suitable for application
External unpainted trim	Exposed to weather but not in ground contact	Occasionally above 18%							Timber not suitable for application
Decking *	Exposed to weather, but excludes ground contact	Generally above 18%							Timber not suitable for application
Posts [not piles] *	In contact with ground or concrete/masonry	Alkaline and above 18%							Timber not suitable for application
Piles, poles, etc	Embedded in ground or concrete	Alkaline and above 18%							Timber not suitable for application

\* This timber use relates to a 15 year durability requirement only.

Bright Steel    Hot dipped galvanised steel, with and without black coating    Stainless Steel    Mechanically galvanised steel

**Table 4: Allowable nail uses for NZS 3604 Corrosion Zones C and D, not less than 50 years, collated nails.**

Use	Environment	Timber moisture content in use	H5	H4	H3.2	H3.1	H1.2	H1.1	Low-risk approved species, kiln-dried pine
Internal framing, ceiling joists and battens, internal beams	Assembled under full cover, never exposed to moisture/ weather, in-service use in air-conditioned or heated spaces	Less than 18%							
Roof trusses, exposed rafters and other roof framing	Minimum exposure to weather during construction, dry in-service environment	Less than 18%							
Internal finishing timbers and furniture requiring borer protection	Never exposed to construction moisture, in-service use in air-conditioned or heated spaces	Less than 18%							Timber not suitable for application
Sub-floor framing and floor joists supported on external walls	Exposed to construction moisture; increased risk of moisture	Less than 24% at close in, less than 20% in-service							Timber not suitable for application
Cavity battens	Possible wetting and drying	Periodically greater than 18%							Timber not suitable for application
Exterior trim or cladding	Exposed to weather but painted	Less than 18%. Assumes effective coating system							Timber not suitable for application
External unpainted trim	Exposed to weather but not in ground contact	Occasionally above 18%							Timber not suitable for application
Decking *	Exposed to weather, but excludes ground contact	Generally above 18%							Timber not suitable for application
Posts [not piles] *	In contact with ground or concrete/masonry	Alkaline and above 18%							Timber not suitable for application
Piles, poles, etc	Embedded in ground or concrete	Alkaline and above 18%							Timber not suitable for application

\* This timber use relates to a 15 year durability requirement only.





## Basis of Appraisal

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

### Tests

12.1 The following testing on Paslode Nails has been completed by BRANZ:

- Accelerated corrosion testing on Paslode Nails in timbers with different Hazard Class treatment levels.

### Other Investigations

13.1 A durability opinion has been provided by BRANZ technical experts.

13.2 Observations have been made by BRANZ to assess the practicability of installation, and to examine completed installations.

### Quality

14.1 The methods of quality control for the manufacture of the Paslode Nails has been examined by BRANZ and found to be satisfactory.

14.2 The quality of the nails supplied by Paslode New Zealand is the responsibility of Paslode New Zealand.

14.3 Designers are responsible for the design and specification of joints incorporating Paslode Nails.

14.4 Quality of installation on site of Paslode Nails is the responsibility of the installer.

14.5 Building owners are responsible for the maintenance of their buildings.

### Sources of Information

- NZS 3602: 2003 Timber and wood-based products for use in building.
- NZS 3604: 2011 Timber-framed buildings.
- NZS 3640: 2003 Chemical preservation of round and sawn timber.
- Ministry of Business, Innovation and Employment Record of amendments - Acceptable Solutions, Verification Methods and handbooks.
- The Building Regulations 1992.



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PASLODE NAILS



In the opinion of BRANZ, **Paslode Nails** 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 **ITW New Zealand Ltd, T/A Paslode New Zealand**, 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. **ITW New Zealand Ltd, T/A Paslode New Zealand**:
  - 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 **ITW New Zealand Ltd, T/A Paslode New Zealand**.
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 **ITW New Zealand Ltd, T/A Paslode New Zealand** or any third party.

For BRANZ

**Chelydra Percy**

Chief Executive

Date of Issue:

12 September 2017