



**BRANZ Appraised**  
Appraisal No. 1196 [2022]

## TRUSTY STEEL LONGRUN STEEL ROOFING

**Appraisal No. 1196 [2022]**

Amended 28 November 2022



### BRANZ Appraisals

Technical Assessments of products for building and construction.

### Product

- 1.1 Trusty Steel Longrun Steel Roofing (T50 profile) is pre-painted trapezoidal steel roofing available in two colours: Grey Friars or Ironsand.

### Scope

- 2.1 Trusty Steel Longrun Steel Roofing has been appraised as a roll-formed roof cladding in accordance with the profiles specified in NZBC Acceptable Solutions E2/AS1 or E2/AS4, for buildings within the following scope:
- the scope limitations of NZBC Acceptable Solutions E2/AS1 and E2/AS4, Paragraph 1.1, with regard to floor plan area and building height; and,
  - constructed with timber or steel roof framing and purlins; and,
  - with a minimum roof pitch of 3° and a maximum roof pitch of 60°; and,
  - situated in NZS 3604 Wind Zones up to, and including, Extra High; and,
  - situated in NZS 3604 Exposure up to and including Zone C.

### Building Regulations

#### New Zealand Building Code (NZBC)

- 3.1 In the opinion of BRANZ, Trusty Steel Longrun Steel Roofing, 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. Trusty Steel Longrun Roofing meets the requirements arising for loads from self-weight, imposed gravity loads arising from use, temperature, snow, wind, impact and time dependent effects including creep and shrinkage, i.e. B1.3.3 (a), (b), (c), (g), (h), (j), and (q). See Paragraphs 8.1–8.8.

**Clause B2 DURABILITY:** Performance B2.3.1 (b) not less than 15 years. Trusty Steel Longrun Roofing meets this requirement. See Paragraphs 9.1 and 9.2.

**Clause E2 EXTERNAL MOISTURE:** Performance E2.3.1 and E2.3.2. Trusty Steel Longrun Roofing meets these requirements. See Paragraphs 12.1 and 12.2.

**Clause F2 HAZARDOUS BUILDING MATERIALS:** Performance F2.3.1. Trusty Steel Longrun Roofing meets this requirement.



**TrustySteel**

**Trusty Steel Ltd**

570 Swanson Road

Ranui

Auckland 0612

Tel: 09 833 8588

Email: [sales@Trustysteel.com](mailto:sales@Trustysteel.com)

Web: [www.trustysteel.com](http://www.trustysteel.com)



**BRANZ**

**BRANZ**

1222 Moonshine Rd,

RD1, Porirua 5381

Private Bag 50 908

Porirua 5240,

New Zealand

Tel: 04 237 1170

[branz.co.nz](http://branz.co.nz)





## Technical Specification

4.1 Components and accessories supplied by Trusty Steel Ltd are as follows:

### Trusty Steel Longrun Steel Roofing

- Pre-painted trapezoidal steel roofing [T50 profile] available in Grey Friars or Ironsand. It is manufactured from either 0.4 mm or 0.55 mm gauge steel, with a profile width of 810 mm and a profile cover of 760 mm.

### Flashings

- Flashings complying with NZBC Acceptable Solutions E2/AS1 or E2/AS4 which are available in lengths of 2.4 m, 3 m, and 4 m:
  - Barge flashing.
  - Point top ridge flashing.
  - Cap flashing.
  - Top flashing with soft edge.
  - Valley flashing.
  - Box - shadow barge flashing.
  - Apron flashing.

Flashing details must meet the requirements of NZBC Acceptable Solution E2/AS1, Table 7 or E2/AS4, Table 7 for the environment they are used in.

4.2 Accessories used with Trusty Steel Longrun Steel Roofing which are supplied by the installer are:

- **Fasteners** – minimum 12 g hot-dip galvanised steel screw fixings (painted or unpainted) complying with AS 3566.2, or spiral shank hot-dip galvanised nails complying with AS/NZS 4680.
- **Washers** – neoprene washers.
- **Expansion washers** – profile washers over EPDM washers, where required, to allow for expansion.
- **Soft edge**.
- **Roof underlay** – a roof underlay complying with NZBC Acceptable Solutions E2/AS1 or E2/AS4, Table 23, or a roof underlay covered by a valid BRANZ Appraisal.

## Handling and Storage

- 5.1 Trusty Steel Longrun Steel Roofing must be transported and handled with care to avoid damaging the pre-finished surfaces.
- 5.2 Long term storage of the roofing sheets and accessories must be under dry, ventilated cover. For short term storage on-site, the sheets must be stored flat, no more than one pallet high and off the ground.
- 5.3 Handling and storage of all materials supplied by Trusty Steel Ltd, whether on-site or off-site, are under the control of the installer. Materials must be handled and stored in accordance with the relevant manufacturer's instructions.

## Technical Literature

- 6.1 This Appraisal must be read in conjunction with:
- Trusty Steel T50 Technical Literature, Version 002-2022.
- 6.2 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

### General

- 7.1 Roof framing must comply with NZS 3604, or be to a specific design in accordance with NZS 3603 and AS/NZS 1170.
- 7.2 Timber roof framing must be treated as required by NZS 3602 for the building design application.
- 7.3 Where no building underlay is required, appropriate separation should be provided between Trusty Steel Longrun Steel Roofing and the timber structure in the roof space, to minimise potential corrosion risks associated with copper timber treatments.
- 7.4 Roof design must take into account any requirements for areas subject to regular snowfalls, as required by NZBC Acceptable Solutions E2/AS1 or E2/AS4, Paragraph 1.3.
- 7.5 Roof underlay must be installed as required by NZBC Acceptable Solutions E2/AS1 or E2/AS4, Paragraph 8.4.7 and Paragraph 8.1.5.
- 7.6 The minimum roof pitch is 3°. Where the rafter/truss length exceeds 12 m, the minimum roof pitch shall increase by 1° per additional 0.5 m. The maximum roof pitch is 60°.
- 7.7 Thermal movement should be considered within the design and must meet the requirements of NZBC Acceptable Solutions E2/AS1 or E2/AS4.
- 7.8 Roof penetrations not detailed in the Technical Literature are the responsibility of the designer and are outside the scope of this Appraisal.
- 7.9 Purlins must be installed in accordance with NZBC Acceptable Solutions E2/AS1 or E2/AS4, Paragraph 8.4.6, and NZS 3604.
- 7.10 To avoid cracking, denting or any other damage to the longrun roofing, walking on the roof should be avoided. If it is necessary to walk on the roof, soft-soled shoes should be worn, and loads should be placed over purlins.
- 7.11 The collection of potable water has not been assessed and is outside the scope of this Appraisal.

### Structure

#### Mass

- 8.1 The approximate mass of Trusty Steel Longrun Steel Roofing is 6 kg/m<sup>2</sup>. A light roof is defined in NZS 3604 as a roof with a roofing material [cladding and any sarking] having a mass not exceeding 20 kg/m<sup>2</sup>.

#### Snow

- 8.2 Trusty Steel Longrun Steel Roofing is suitable for use in areas where buildings are designed for a 1 kPa snow loading. Refer to the Trusty Steel Longrun Steel Roofing Technical Literature for installation details for snow-prone areas.

#### Wind Zones

- 8.3 When fixed in accordance with the manufacturer's instructions and this Appraisal, Trusty Steel Longrun Steel Roofing is suitable for use in all NZS 3604 Wind Zones up to, and including, Extra High. Refer to NZBC Acceptable Solutions E2/AS1 or E2/AS4, NZS 3604 and the Technical Literature for fastening requirements.

#### Timber Roof Framing

- 8.4 Rafters or trusses must be at maximum 1,200 mm centres.
- 8.5 The dimensions of the purlins must be in accordance with NZS 3604, Tables 10.10 and 10.11 and are either 70 mm x 45 mm, or 90 mm x 45 mm.
- 8.6 Purlins must be H1.2 treated, and fastened as described in NZS 3604 Tables 10.10 and 10.11 and the Technical Literature.



### **Steel Roof Framing**

- 8.7 Rafters or trusses must be at maximum 1,200 mm centres.
- 8.8 Purlin design must be in accordance with NZBC Acceptable Solution B1/AS2 Paragraph 9.

### **Durability**

- 9.1 Trusty Steel Longrun Steel Roofing meets the durability requirement of 15 years, provided maintenance is carried out in accordance with this Appraisal and the Technical Literature.

### **Weathering**

- 9.2 Trusty Steel Longrun Steel Roofing may fade slightly over a period of time.

### **Maintenance**

- 10.1 Trusty Steel Longrun Steel Roofing must be installed and maintained in accordance with the manufacturers' instructions, NZBC Acceptable Solutions E2/AS1 or E2/AS4, and the Metal Roofing Manufacturers [MRM] NZ Metal Roof and Wall Cladding Code of Practice.
- 10.2 Little maintenance should be required apart from the removal of lichen, moss and organic growth that may become established. A water-based chemical treatment recommended by Trusty Steel Ltd as being suitable for use with the Trusty Steel Longrun Steel Roofing must be used for the removal of organic material. Petroleum-based solvents or cleaners must not be used.
- 10.3 Annual inspections must be made to ensure that all aspects of the roof cladding, including the pre-finished coating, the flashings and any joints remain in a weatherproof condition. Any damaged areas or areas showing signs of deterioration which would allow water ingress must be repaired immediately.
- 10.4 Areas of the roof that are not washed by rain should be washed down with fresh water approximately every six months.
- 10.5 In marine environments, or in areas exposed to industrial pollution, washing down should be carried out approximately every three months.

### **Prevention of Fire Occurring**

- 11.1 Separation or protection must be provided to the combustible materials of the Trusty Steel Longrun Steel Roofing from heat sources such as fireplaces, heating appliances and chimneys. Part 7 of NZBC Verification Method C/VM1 and Acceptable Solution C/AS1, and NZBC Acceptable Solution C/AS2 provide methods for separation and protection of combustible materials from heat sources.

### **External Moisture**

- 12.1 Trusty Steel Longrun Steel Roofing, when installed in accordance with this Appraisal and the Technical Literature, will shed precipitated moisture and therefore meet the performance requirements of NZBC Clause E2.3.1. It will also prevent the penetration of water that could cause undue dampness, or damage to building elements, therefore meeting the performance requirements of NZBC Clause E2.3.2.

### **Construction Moisture**

- 12.2 Trusty Steel Longrun Steel Roofing, when installed in accordance with this Appraisal and the Technical Literature, will allow excess moisture present at the completion of construction to be dissipated without permanent damage to building elements and therefore meet the performance requirements of NZBC Clause E2.3.6. This is achieved by ensuring the construction moisture levels are no higher than 18% when the roofing is installed and before the ceiling is closed-in, as well as providing an adequate level of roof cavity ventilation.



### Internal Moisture

- 13.1 Adequate roof space ventilation is necessary to ensure roof space internal moisture levels and temperatures are controlled. Roof space ventilation requirements are given in the Technical Literature.
- 13.2 Air should be allowed to flow from the bottom to the top of the roof. In skillion-type roofs, a clear, uninterrupted, ventilated air gap of at least 25 mm must be present under Trusty Steel Longrun Steel Roofing.
- 13.3 Trusty Steel Ltd should be consulted for further advice and information on roof ventilation and moisture control, especially when the roof design is unusual.

## Installation Information

### Installation Skill Level Requirement

- 14.1 All design and building work must be carried out in accordance with the Trusty Steel Longrun Steel Roofing Technical Literature and this Appraisal. Where the work involves Restricted Building Work this must also be completed by, or under the supervision of, a Licensed Building Practitioner (LBP) with the relevant License class.
- 14.2 The Technical Literature must be referred to during all inspections of the Trusty Steel Longrun Steel Roofing installations.

### System Installation

#### Purlins

- 15.1 Roof framing and purlins must have a maximum moisture content of 18% at the time of the installation of the Trusty Steel Longrun Steel Roofing.
- 15.2 Purlins must be designed and installed in accordance with NZS 3604 and the Technical Literature, and be of the size and fastened as described in NZS 3604 Tables 10.10 and 10.11.

#### Roof Underlay

- 15.3 The roof underlay must be installed in accordance with NZBC Acceptable Solutions E2/AS1 or E2/AS4, Paragraph 8.1.5. Only sufficient fasteners to temporarily hold the underlay in place need be used.

#### Trusty Steel Longrun Steel Roofing Installation

- 15.4 Trusty Steel Longrun Steel Roofing shall be fixed in accordance with NZBC Acceptable Solutions E2/AS1 or E2/AS4 and the Technical Literature.
- 15.5 Trusty Steel Longrun Steel Roofing shall be fixed through the crests. Screw fixings shall penetrate purlins by a minimum of 30 mm and all fixings shall include either neoprene washers or profiled washers with an EPDM washer, where expansion of the roof has to be considered.

#### System Installation

- 15.6 NZBC Acceptable Solutions E2/AS1 or E2/AS4 and the Technical Literature must be referred to during all installations of Trusty Steel Longrun Steel Roofing and the associated flashings.

### Health and Safety

- 16.1 Safe use and handling procedures for the Trusty Steel Longrun Steel Roofing are provided in the MRM NZ Metal Roof and Wall Cladding Code of Practice.



## Basis of Appraisal

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

### Tests

- 17.1 Testing to AS/NZS 2728 has been completed. The results have been reviewed by BRANZ technical experts.

### Other Investigations

- 18.1 A durability opinion has been provided by BRANZ technical experts.
- 18.2 The manufacturer's Technical Literature has been examined by BRANZ and found to be satisfactory.
- 18.3 Site inspections have been undertaken by BRANZ to assess the practicability of installation.

### Quality

- 19.1 The manufacture of Trusty Steel Longrun Steel Roofing has been examined by BRANZ, and details regarding the quality and composition of the materials used were obtained by BRANZ and found to be satisfactory.
- 19.2 The quality of the supply of materials and accessories is the responsibility of Trusty Steel Ltd.
- 19.3 Quality on-site is the responsibility of the installer.
- 19.4 Designers are responsible for the building design, and the building contractor is responsible for the quality of installation of the roof framing and sheathing or roofing battens in accordance with the Technical Literature.
- 19.5 Building owners are responsible for the maintenance of Trusty Steel Longrun Steel Roofing in accordance with the instructions of Trusty Steel Ltd.

## Sources of Information

- AS/NZS 1170:2002 Structural design actions.
- AS/NZS 2728:2013 Prefinished/prepainted sheet metal products for interior/exterior building applications - Performance requirements.
- AS/NZS 4680:2006 Hot-dip galvanised [zinc] coatings on fabricated ferrous articles.
- MRM NZ Metal Roof and Wall Cladding Code of Practice v3.0.
- NZS 3602:2003 Timber and wood-based products for use in building.
- NZS 3604:2011 Timber-framed buildings.
- Ministry of Business, Innovation and Employment Record of amendments - Acceptable Solutions, Verification Methods and handbooks.
- The Building Regulations 1992.

## Amendments

### Amendment No. 1, dated 28 November 2022

This Appraisal has been amended to update the scope of use to include NZS 3604 Exposure Zone C.



**BRANZ Appraised**  
Appraisal No. 1196 [2022]

**BRANZ Appraisal**  
Appraisal No. 1196 [2022]  
02 May 2022

TRUSTY STEEL LONGRUN STEEL  
ROOFING



In the opinion of BRANZ, **Trusty Steel Longrun Steel Roofing** is fit for purpose and will comply with the Building Code to the extent specified in this Appraisal provided it is used, designed, installed and maintained as set out in this Appraisal.

The Appraisal is issued only to **Trusty Steel Ltd**, 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. **Trusty Steel Ltd**:
  - 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 **Trusty Steel Ltd**.
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 **Trusty Steel Ltd** or any third party.

---

For BRANZ

**Chelydra Percy**

Chief Executive

Date of Issue:

02 May 2022