



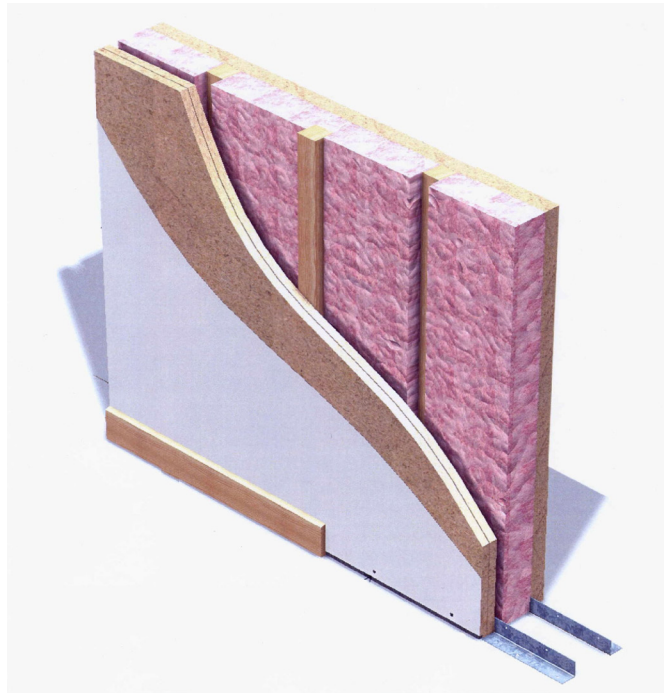
## BRANZ Appraised

Appraisal No. 985 [2018]

## METRA INTER-TENANCY WALL SYSTEM

Appraisal No. 985 (2018)

Amended 03 November 2021



### BRANZ Appraisals

Technical Assessments of products for building and construction.



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### Product

- 1.1 Metra Inter-Tenancy Wall System is a sound insulating and fire-rated wall system based on Metra Panels, providing a fire resistance rating (FRR) of 30/30/30 for the 130 mm system and 60/60/60 for the 172 mm system.
- 1.2 The Metra Inter-Tenancy Wall System consists of two construction variants; 130 mm and 172 mm wide walls. Both variants feature a 36 mm layer of Metra Panel to each interior face, constructed from either two layers of 18 mm thick or a single layer of 36 mm thick Metra Panel.

### Scope

- 2.1 The Metra Inter-Tenancy Wall System is appraised for use as fire-rated and sound insulating internal walls between household units.
- 2.2 The Metra Inter-Tenancy Wall System is suitable for use when interfacing with traditional timber frame construction, light gauge steel frame construction, and with the Metra Panel System.
- 2.3 The Metra Inter-Tenancy Wall System is suitable for use as infill panels within buildings having concrete frames designed to NZS 3101.
- 2.4 The use of Metra Panels in the following situations has not been assessed and is outside the scope of this Appraisal:
  - where there are individual fire cells above and below the mid-floor.
  - sauna rooms and the like where they may be exposed to sustained high humidity (greater than 95% RH) or liquid water.
  - where temperatures are in excess of 35°C over large areas for prolonged periods or in excess of 50°C in localised areas (e.g. the area adjacent to a fuel burning appliance).



## Building Regulations

### New Zealand Building Code (NZBC)

3.1 In the opinion of BRANZ, Metra Inter-Tenancy Wall System, 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. Metra Inter-Tenancy Wall System meets the requirements for loads arising from self-weight, imposed gravity loads arising from use, earthquake, snow, wind, fire and impact [i.e. B1.3.3 (a), (b), (f), (g), (h), (i) and (j)]. See Paragraphs 8.1–8.2.

**Clause B2 DURABILITY:** Performance B2.3.1 (a) not less than 50 years. Metra Inter-Tenancy Wall System meets this requirement. See Paragraph 9.1.

**Clause C3 FIRE AFFECTING AREAS BEYOND THE FIRE SOURCE:** Performance C3.4 (a) and C3.6. Metra Inter-Tenancy Wall System meets these requirements. See Paragraphs 12.1–12.4.

**Clause F2 HAZARDOUS BUILDING MATERIALS:** Performance F2.3.1. Metra Inter-Tenancy Wall System meets this requirement. See Paragraphs 14.1–14.2.

**Clause G6 AIRBORNE AND IMPACT SOUND:** Performance G6.3.1. Metra Inter-Tenancy Wall System meet this requirement. See Paragraphs 15.1–15.2.

## Technical Specification

4.1 The components and accessories used with Metra Inter-Tenancy Wall System, which are supplied by Metra Panel Systems Limited are:

- **Metra Panel sheets** – 7.35 m x 2.45 m x 18 or 36 mm thick medium density particleboard panels with a nominal density of 640 kg/m<sup>3</sup>. The panels are supplied primer painted and may be supplied with chamfered edges for jointing and plastering.
- **Steel Angle [BP1]** – 34 mm x 40 mm x 1.2 mm BMT galvanised steel angle.
- **Battens** – 45 x 45 mm Number 1 grade H1.2 radiata timber battens with a moisture content of 18% or less.
- **Insulation** – 75 mm thick Pink Batts® Silencer wall insulation or 60 mm thick Autex® ASB4 polyester wall insulation.
- Connection and fixing screws, adhesive, sealer/primer paint, as specified in the Technical Literature.

4.2 All fixing components must comply with the requirements of Section 4 of NZS 3604.

## Handling and Storage

- 5.1 Panels must be handled carefully at all times to avoid physical damage and kept dry under cover until ready for construction.
- 5.2 If it is necessary to store the Metra Inter-Tenancy Wall System panels on-site, care should be taken to ensure they are stacked flat, kept dry and that proper air circulation can occur around the stack.
- 5.3 When exposure to the weather is anticipated during building construction, waterproof covers such as tarpaulins must be provided to keep the panels dry.
- 5.4 Metal components such as fixings and steel angles must be stored so that they are kept dry and undamaged.

## 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

### General

- 7.1 The Metra Inter-Tenancy Wall System only form that part of the structure that is a wall between two tenancies. The rest of the building structure may be:
  - timber-framed structures designed and constructed in accordance with NZS 3604; or,
  - specifically designed light gauge steel frame construction; or,
  - Metra Panel System buildings as defined by BRANZ Appraisal No. 364; or,
  - specifically designed timber structures designed in accordance with NZS 3603; or,
  - specifically designed concrete framed structures designed in accordance with NZS 3101.
- 7.2 Where Metra Inter-Tenancy Wall System interface with other construction, the joints must be appropriately designed with fire and sound sealants and materials. The sealants have not been assessed and are outside the scope of this Appraisal.
- 7.3 Metra Inter-Tenancy Wall System meets the provisions of NZBC Clause G6 for the transfer of airborne sound through wall elements between occupancies or spaces not requiring NZBC compliance, such as between rooms and spaces of the same occupancy.
- 7.4 Insulation must be as specified in Metra Inter-Tenancy Wall System to achieve the Sound Transmission Class (STC) classification stated in the technical literature.
- 7.5 Mechanical bridging across the cavity must be avoided as it will significantly reduce the sound insulating performance of the wall. 'Bridging' refers to any item connecting from one side of the wall to the other side, including, but not limited to, electrical wires, insulation compressed between battens, temporary fasteners to hold insulation in place and walls running past the end of the inter-tenancy wall.
- 7.6 The Metra Inter-Tenancy Wall System is also a solution for the passive fire protection to inter-tenancy walls for use in instances where a FRR of no more than 30/30/30 for the 130 mm wide system and no more than 60/60/60 for the 172 mm wide system is required to meet the provisions of NZBC Clause C3.
- 7.7 The Metra Inter-Tenancy Wall System is suitable for use with concrete or timber-framed floors. Where a timber floor is used, the floor platform must not be continuous under the Metra Inter-Tenancy Wall System. Cavities or openings in the floor platform encroaching on the wall must be filled with a bulk fibre, fire resistant material to halt the spread of flame between occupancies. Concrete floors may be continuous under the Metra Inter-Tenancy Wall System.
- 7.8 Penetrations within the body of the Metra Inter-Tenancy Wall System for the purposes of piped services, cables are outside the scope of this Appraisal. Some penetrations have been tested by Metra Panel Systems Limited for fire resistance and information about these can be obtained by them. The effect of the penetrations on acoustic and fire rating performance of the wall must be addressed separately and is the responsibility of the designer.
- 7.9 Where control joints are required, the joints must be specifically designed to maintain the integrity of the sound control and fire resistance ratings of the system.

### Structure

- 8.1 The specific fixing requirements for Metra Inter-Tenancy Wall System are provided within the Technical Literature.
- 8.2 When used as a load-bearing partition, the structural performance of the Metra Inter-Tenancy Wall under fire conditions must be examined on a case-by-case basis by an engineer designated by Metra Panel Systems Limited. For information on axial loading during fire testing, contact Metra Panel Systems Limited.

### Durability

- 9.1 Durability of the Metra Inter-Tenancy Wall System, including the connections, is dependent on remaining dry in service. It is also dependent on the wall panels not being exposed to sustained high humidity, liquid water, or high temperatures. The Metra Inter-Tenancy Wall System is for internal walls only. The walls must be fully enclosed within the building envelope, and suitably protected.

### Maintenance

- 10.1 The building must be maintained weathertight and all components of the Metra Inter-Tenancy Wall System protected from internal and external moisture. The internal linings or finishing must be maintained to provide protection from internal moisture. Regular inspections [at least annually] of the external cladding system and the internal linings and finishes must be made, and any damage or deterioration repaired or restored.
- 10.2 Minimal maintenance is required for the Metra Inter-Tenancy Wall System as panels are very robust. Damage to any exposed surfaces must be repaired to ensure the fire and acoustic performance of the wall. Surfaces can be painted or wallpapered.

### Prevention of Fire Occurring

- 11.1 Separation or protection must be provided to Metra Inter-Tenancy Wall System from heat sources such as fireplaces, heating appliances, flues and chimneys. Part 7 of NZBC Verification Method C/VM1 and Acceptable Solution C/AS1, and Acceptable Solution C/AS2 provide methods for separation and protection of combustible materials from heat sources.

### Fire Affecting Areas Beyond the Fire Source

- 12.1 NZBC Verification Method C/VM2, Table A1 states that particle boards with a density of greater than 600 kg/m<sup>3</sup>, with or without the coatings defined in the Table, can be taken as having a Group Number of three. When an applied finish is used over Metra Inter-Tenancy Wall System, the Group Number must be obtained from the manufacturer or supplier of the finish product or system, for the complete lining system. Metra Inter-Tenancy Wall System can be used as an internal wall surface lining where permitted by NZBC Performance Clause C3.4 [a].
- 12.2 In all Risk Groups where foamed plastic building materials or combustible insulating materials form part of the wall system, the completed system, including any applied finish, must achieve a Group Number of not more than three. The foamed plastics shall comply with the flame propagation criteria as specified in AS 1366 for the type of material being used.
- 12.3 In buildings with an SH Risk Group classification, there are no internal surface finish requirements for the Metra Inter-Tenancy Wall System [with or without applied finish], subject to Paragraph 12.2 of this Appraisal.
- 12.4 The Metra Inter-Tenancy Wall System achieves a FRR of 30/30/30 for the 130 mm system and 60/60/60 for the 172 mm system when constructed in accordance with the Technical Literature.

### Internal Moisture

- 13.1 The Metra Inter-Tenancy Wall System must be protected against the effects of internal moisture. Walls in wet areas must be finished with a protective coating system.
- 13.2 Some permanent ventilation, not reliant on window openings, must be provided in wet areas, such as bathrooms and laundries. Vented windows, wall or wall mounted extract fans, or similar fittings are recommended. Extract fans for moisture laden air must be externally vented.
- 13.3 In wet areas [where sanitary fixtures are installed], and in rooms where the walls are likely to be splashed, the surface of Metra wall panels must be finished with an impervious lining which is easily cleaned. These linings must meet the Group Number requirements mentioned in Paragraph 12.1 above. All joints must be impervious to water, and protection of the walls must be provided by extending impervious floor membranes up the wall in accordance with the detail contained in NZBC Acceptable Solution E3/AS1 Figure 1.

### Hazardous Building Materials

- 14.1 Metra wall panels are manufactured using melamine fortified urea formaldehyde adhesive. Vapour emissions are minimal because the panels are encapsulated by a paint coating. Adequate ventilation in accordance with NZBC Performance Clause G4.3.1 must be provided.
- 14.2 The degree of health hazard caused by vapour release will depend on the total amount of vapour released from all sources in the building, including flooring and furniture, the ventilation rate, and the degree of encapsulation provided by surface finishes, such as coatings and carpets.

## Airborne And Impact Sound

- 15.1 The inter-tenancy provisions of NZBC Clause G6 for walls will be achieved when the Metra Inter-Tenancy Wall System is used in accordance with this Appraisal.
- 15.2 The acoustic performance of construction methods otherwise than in accordance with the Technical Literature have not been considered and are outside the scope of this Appraisal.

## Installation Information

### Installation Skill Level Requirement

- 16.1 All design and building work must be carried out in accordance with the Metra Inter-Tenancy Wall System Technical Literature and this Appraisal by competent and experienced tradespersons conversant with the Metra Inter-Tenancy Wall System. Where the work involves Restricted Building Work (RBW) this must be completed by, or under the supervision of, a Licensed Building Practitioner (LBP) with the relevant License Class.

### General

- 17.1 Metra Inter-Tenancy Wall System must be installed in accordance with the information contained within the Technical Literature.
- 17.2 Metra Inter-Tenancy Wall System panels must be inspected for water damage before, during and after installation, and damaged panels repaired or replaced.
- 17.3 Particular care must be taken to ensure that the foundations and building platform are level and square and that perimeter dimensions are accurate.
- 17.4 All timber framing must have a moisture content of not more than 18% at the time of enclosure.
- 17.5 All exposed pre-cut Metra Inter-Tenancy Wall System panel edges are protected by a factory paint coating. It is important that any site cut, or site exposed edges are similarly protected, using the sealing paint supplied with the wall panels.
- 17.6 The Metra Inter-Tenancy Wall System is fixed to the floor by way of the steel angle (BP1) which is screwed fixed to the floor and to the Metra Panel sheets. Staggered vertical 45 x 45 mm radiata pine battens are placed at 600 mm centres along the length of the wall and provide support to the Metra Panels. The Metra Inter-Tenancy Wall System features either a 58 mm or 100 mm wide internal cavity and outer faces consist of either a single layer of 36 mm thick Metra Panel sheet to one face and two 18 mm layers to the opposite face, or two 18 mm layers to both faces. Where 18 mm sheets are used, they are glue laminated together. All joints between Metra Panel sheets must be supported by a 350 mm wide, 36 mm thick Metra jointing strip to the inside of the wall cavity, screw fixed to the surrounding Metra Panels in accordance with the Technical Literature. Insulation is fitted within the wall in accordance with the details in the Technical Literature, and a 10 x 10 mm rebate at the bottom edge of the Metra Panel is filled with a fire and acoustic sealant as detailed in the Technical Literature, providing an airtight seal to the floor.
- 17.7 Roof cladding should be installed as soon as practicable. The maximum weather exposure time for Metra Inter-Tenancy Wall System is 28 days. Construction sequencing must ensure that the insulation is not exposed to the weather under any circumstance. When exposure to the weather is anticipated during building construction, waterproof covers such as tarpaulins must be provided to keep the walls dry.

### Health and Safety

- 18.1 Suitable protective masks must be worn to prevent inhalation of dust resulting from cutting or working with Metra Panels.



## Basis of Appraisal

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

### Tests

- 19.1 Tests were carried out by BRANZ to establish the durability of Metra Inter-Tenancy Wall System.
- 19.2 Laboratory measurement of airborne sound insulation of the Metra Inter-Tenancy Wall System has been carried out. The results of this testing have been assessed by Marshall Day Acoustics Limited and found to be satisfactory.

### Calculations

- 20.1 Calculations to justify the structural adequacy of Metra Inter-Tenancy Wall System have been examined by BRANZ and found to be satisfactory.

### Other Investigations

- 21.1 An assessment of the fire performance of the Metra Inter-Tenancy Wall System to AS 1530.4 has been carried out by BRANZ experts and found to be satisfactory.
- 21.2 The satisfactory performance of Metra Panel wall and wall panels in New Zealand over a period of 20 years has been recognised by BRANZ.
- 21.3 The Technical Literature has been examined by BRANZ and found to be satisfactory.

### Quality

- 22.1 Details of materials and components used and methods adopted for quality control have been obtained by BRANZ and found to be satisfactory.
- 22.2 The manufacture of panel material by the Laminex Group Limited, Taupo has been assessed by BRANZ.
- 22.3 The Metra panel wall pre-cut operation by Metra Panel Systems Limited, Huntly has been assessed by BRANZ.
- 22.4 The quality of materials, components and accessories supplied by Metra Panel Systems Limited is the responsibility of Metra Panel Systems Limited.
- 22.5 Quality on-site is the responsibility of building contractor and installer.
- 22.6 The designer is responsible for the building design, and the installer is responsible for the quality of installation of Metra Inter-Tenancy Wall System panels.
- 22.7 Building owners are responsible for the maintenance of Metra Inter-Tenancy Wall System.

## Sources of Information

- AS 1366:1992 Rigid cellular plastics sheets for thermal insulation.
- AS/NZS 1170:2002 Structural design actions.
- NZS 3101:2006 Concrete structures standard.
- NZS 3603:1993 Timber structures standard.
- 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.
- World Health Organisation (WHO) Working Group on the Evaluation of Carcinogenic Risks to Humans, Wood Dust and Formaldehyde, 1995.

## Amendments

### Amendment No. 1, dated 03 November 2021

This Appraisal has been amended to update the 172 mm system to a fire rating of 60/60/60.



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Appraisal No. 985 [2018]  
29 May 2018

METRA INTER-TENANCY WALL  
SYSTEM



In the opinion of BRANZ, **Metra Inter-Tenancy Wall System** 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 **Metra Panel Systems 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. **Metra Panel Systems 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 **Metra Panel Systems 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 **Metra Panel Systems Ltd** or any third party.

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For BRANZ

**Chelydra Percy**

Chief Executive

Date of Issue:

29 May 2018