



BRANZ Appraised

Appraisal No. 395 [2024]

GOLDENEDGE® THINLINE MDF UNDERLAY FOR FLOORS

Appraisal No. 395 [2024]

This Appraisal replaces BRANZ
Appraisal No. 395 [2018]



BRANZ Appraisals

Technical Assessments of
products for building and
construction.



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Product

- 1.1 GoldenEdge® Thinline MDF Underlay for Floors is a medium-density fibreboard (MDF) sheet underlay for the application of flooring materials.

Scope

- 2.1 GoldenEdge® Thinline MDF Underlay for Floors has been appraised for use as a sheet underlay over concrete slab or laid, framed floors of new or existing buildings. The underlay is for the application of textile floor coverings such as carpet, and flexible sheet and tile floor coverings such as flexible and semi-rigid PVC, cork, rubber, linoleum and cushioned vinyl.

Building Regulations

New Zealand Building Code (NZBC)

- 3.1 The use of GoldenEdge® Thinline MDF Underlay itself is not specifically controlled by the New Zealand Building Code (NZBC). However, the use of floor-covering systems incorporating GoldenEdge® Thinline MDF Underlay may be controlled by the NZBC and this may limit or exclude its use in some applications. See Design Information for further details.

Technical Specification

- 4.1 GoldenEdge® Thinline MDF and accessories used with GoldenEdge® Thinline MDF Underlay for Floors and supplied or specified by Nelson Pine Industries Limited are as follows:

GoldenEdge® Thinline MDF Underlay

- GoldenEdge® Thinline MDF Underlay is medium-density fibreboard, 4.75 mm and 6 mm thick. The 4.75 mm thick sheets are available in standard sizes of 2,135 x 920 mm, 2,440 x 920 mm and 2,440 x 1,220 mm. The 6 mm thick sheets are available in standard sizes of 2,440 x 915 mm and 2,440 x 1,220 mm. The sheets have square edges to all four sides. The nominal density is 725 kg/m³.

Sheet Fasteners and Adhesives

- 25 x 2 mm, or 25 x 2.5 mm galvanised steel, flat head ring-grooved buttress or underlay type nails.
- 22 mm long galvanised, plated (zinc or cadmium) or resin-coated steel or stainless steel staples.
- Adhesive – specified by the adhesive manufacturer as being suitable for bonding MDF to the substrate.

Handling and Storage

- 5.1 GoldenEdge® Thinline MDF sheets are delivered from the factory in packs and are bound with metal bands. Cover sheets are provided to the top and bottom faces. Sheets must be stacked flat, inside the building and clear of the floor on a minimum of four, evenly spaced, full width timber bearers so that sheet sagging does not occur. Sheets must be stored out of direct sunlight and must not be exposed to sources of moisture such as rain, damp concrete, spilt liquids and the like.

Technical Literature

- 6.1 This Appraisal must be read in conjunction with:
- GoldenEdge® MDF Panels New Zealand, Pages 2 to 6, Version MS22012, dated November 2018.
- 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 GoldenEdge® Thinline MDF Underlay is designed for use over floors of timber strip, wood-based panel [e.g. particleboard, plywood, MDF], fibre cement sheet and concrete, to provide a flat, uniform surface for the application of textile floor coverings and sheet and flexible tile floor coverings.
- 7.2 GoldenEdge® Thinline MDF Underlay is not suitable for the application of waterproofing membranes such as those used in showers or bathrooms.
- 7.3 The product must not be used in areas subject to high humidity such as saunas or steam rooms.
- 7.4 The 6 mm sheet is used on 'rougher' or more uneven floors, which may require greater sanding.
- 7.5 GoldenEdge® Thinline MDF Underlay for Floors has not been appraised for use as a structural diaphragm sheet, or as a substrate for ceramic tiles.

Durability

- 8.1 GoldenEdge® Thinline MDF Underlay for Floors is expected to have a service life comparable with typical floor coverings, provided it remains dry in service. The risk of attack by insects such as borer is considered to be at an acceptably low level.

Maintenance

- 9.1 Although no maintenance can be performed on the MDF sheets themselves, impervious protective floor coverings in areas exposed to water splash must be maintained to prevent moisture penetrating through to the MDF sheet.

Prevention of Fire Occurring

- 10.1 Separation or protection must be provided to the GoldenEdge® Thinline MDF Underlay for Floors from heat sources such as fireplaces, heating appliances 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.

Control of Internal Fire and Smoke Spread

- 11.1 Floor coverings in Risk Group SH do not have any surface finish requirements. In all other Risk Groups, refer to NZBC Acceptable Solution C/AS2, Paragraphs 4.17.3 and 4.17.4.

External Moisture

Concrete floors

- 12.1 Concrete slab-on-ground floors must be protected from ground moisture by a correctly installed vapour barrier in accordance with NZS 3604, Section 7.5.4.
- 12.2 MDF sheets must not be overlaid on new concrete floors until they have dried out thoroughly to a surface relative humidity reading of 70% or less, when measured using a hygrometer in accordance with NZS AS 1884 Appendix A2.2, or AS/NZS 2455.1 Appendix B2, or BRANZ Bulletin 585.
- 12.3 As a general guide, new concrete slabs require one month of drying for each 25 mm of concrete thickness. However this can vary greatly depending on factors such as humidity, temperature and ventilation rates.

Framed floor construction

- 12.4 Adequate sub-floor ventilation must be provided in accordance with NZS 3604, Section 6.14.

Internal Moisture

- 13.1 In 'wet areas' such as bathrooms, toilets, laundries and kitchens, GoldenEdge® Thinline MDF Underlay for Floors may be used, provided it is protected by a moisture impervious floor covering system such as PVC sheet that will be fully bonded to the GoldenEdge® Thinline MDF Underlay, with all seams hot welded and will be maintained waterproof.
- 13.2 NZBC Acceptable Solution E3/AS1, Paragraph 3.1.1 a) specifies that PVC sheet with sealed joints is a suitable moisture impervious floor coverings in areas exposed to water splash.
- 13.3 Floor coverings used for protecting against water splash must be covered at wall/floor and cabinetry intersections and must extend under WC pans.
- 13.4 GoldenEdge® Thinline MDF Underlay for Floors is not suitable for the application of waterproofing membranes such as those used in showers and bathrooms.

Hazardous Building Materials

- 14.1 When installed and covered, the level of formaldehyde emission from GoldenEdge® Thinline MDF Underlay for Floors will be tolerable for most occupants in buildings with an adequate level of ventilation provided in accordance with NZBC Performance Provision G4.3.1. Vapour emissions will be encapsulated to some degree by the floor coverings, though these may themselves be sources of formaldehyde.
- 14.2 A material safety data sheet is available for download from www.nelsonpine.co.nz.

Installation Information

Installation Skill Level Requirement

- 15.1 All design and building work must be carried out in accordance with the GoldenEdge® Thinline MDF Underlay for Floors Technical Literature and this Appraisal. All building work must be undertaken by competent and experienced tradespersons conversant with GoldenEdge® Thinline MDF Underlay for Floors.

Installation

Site Conditions

- 16.1 The installer must check that there is adequate ventilation to subfloor spaces and that they are free of excess moisture or dampness. Concrete floors must be dry (see Paragraphs 12.1 to 12.3) and timber, wood-based and fibre cement substrates must have a moisture content less than 20%. Further drying or remedial work must be undertaken if these requirements are not met.



Preparation

- 16.2 Existing floors must be in sound condition [i.e. no rot] for the application of GoldenEdge® Thinline MDF Underlay for Floors. Any loose or broken floorboards must be repaired or replaced. Nails must be punched below the board surface. Best results are achieved by machine sanding the existing floor to a flat plane, but this must not compromise the structural adequacy of the floor.
- 16.3 Concrete floors must be reasonably flat and smooth. Remedial work such as the application of floor levelling compounds may be required.
- 16.4 When GoldenEdge® Thinline MDF sheets are adhesive-fixed, the substrate must be free of dust, grease, paint, oil, existing floor adhesives or the like, before application.
- 16.5 Loose laying the GoldenEdge® Thinline MDF sheets for at least 24 hours prior to fastening is strongly recommended to allow the sheets to reach equilibrium moisture content with the surrounding atmosphere.
- 16.6 Sheet laying is in a brick pattern. The long edges of the GoldenEdge® Thinline MDF sheets should run at right angles to the direction of strip flooring. Joints between sheets must not fall directly over joints in the flooring, except for construction or expansion/contraction joints in concrete slabs where the underlay joint must be formed directly above. A 5 mm gap is required between the sheet edge and the room perimeter or where the sheet meets other fixtures. Adjoining sheets require an approximate 0.5 mm gap between them to allow for movement. Sheets can be cut with either a fine tooth saw [hand or power] or a drywall or trimming knife.

Fixing

- 16.7 On concrete floors, GoldenEdge® Thinline MDF sheets are adhesive-fixed with 4 mm diameter beads of adhesive applied in a grid pattern at approximately 150 mm centres in both directions. Mechanical fasteners are used for fixing to timber, wood-based and fibre cement substrates. Fasteners are used in conjunction with adhesive on wood-based sheet and fibre cement sheet products. Table 1 specifies fixing distances for fasteners. Expansion joints in the substrate must be continued in the underlay.
- 16.8 Any raised nail heads must be punched flush and any raised portions or joints of the underlay must be sanded smooth before laying floor coverings.

Table 1: Fixing details

Fixing at perimeter of sheet [maximum]	75 mm
Fixing in body of sheet [maximum]	150 mm
Edge distances [minimum]	10 mm
Corner distances [minimum]	50 mm

Inspections

- 17.1 For inspection, reference must be made to the Technical Literature. NZS AS 1884 and AS/NZS 2455.1 provide further information on the installation of underlays and floor coverings.

Health and Safety

- 18.1 Dust resulting from the cutting or sanding of GoldenEdge® Thinline MDF sheets may be a respiratory irritant, and the use of a suitable respiratory protection is recommended. A material safety data sheet is available for download from www.nelsonpine.co.nz.

Basis of Appraisal

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

Tests

- 19.1 Tests for modulus of rupture [MOR], modulus of elasticity [MOE] and internal bond were carried out by BRANZ on new, old and cyclic humidity exposed specimens.



Other Investigations

- 20.1 The GoldenEdge® Thinline MDF Underlay for Floors Technical Literature has been examined by BRANZ and found to be satisfactory.
- 20.2 Site inspections were carried out by BRANZ to examine the practicability of the installation of the system, and to view completed installations.
- 20.3 An assessment was made of the durability of the products by BRANZ technical experts and found to be satisfactory.

Quality

- 21.1 The manufacture of GoldenEdge® Thinline MDF Underlay for Floors has been examined by BRANZ, including methods adopted for quality control. Details regarding the quality and composition of the materials used were obtained by BRANZ and found to be satisfactory.
- 21.2 The quality management systems of Nelson Pine Industries Limited have been assessed and registered as meeting the requirements of ISO 9001.
- 21.3 Nelson Pine Industries Limited is responsible for the quality of the product supplied.
- 21.4 The quality of the application and finish on-site is the responsibility of the building contractor.
- 21.5 Designers are responsible for the design of the building.
- 21.6 Building owners are responsible for the maintenance of the product in accordance with the instructions of Nelson Pine Industries Limited.

Sources of Information

- AS/NZS 1859.2:2017 Reconstituted wood-based panels - Specifications - Dry-processed fibreboard.
- AS/NZS 2455.1:2007 Textile floor coverings - Installation practice.
- BRANZ Bulletin Issue 585 Measuring moisture in timber and concrete, June 2015.
- NZS AS 1884:2013 Floor coverings - Resilient sheet and tiles - Installation practices.
- 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.



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12 June 2024

GOLDENEDGE® THINLINE MDF
UNDERLAY FOR FLOORS



In the opinion of BRANZ, **GoldenEdge® Thinline MDF Underlay for Floors** 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 **Nelson Pine Industries 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. **Nelson Pine Industries 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 quality of work;
 - 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 **Nelson Pine Industries 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 **Nelson Pine Industries Limited** or any third party.

For BRANZ

Claire Falck

Chief Executive

Date of Issue:

12 June 2024