BRANZ Appraised
Appraisal No. 960 [2017]

DEKCRADLE™ AND ERGOFLOR™ TIMBER FRAMING CRADLES

Batten&Cradle Flooring Systems

DekCradle™

ErgoFlor™

Appraisal No. 960 (2017)

BRANZ Appraisals

Technical Assessments of products for building and construction.

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Product

1.1 DekCradle and ErgoFlor are rubber cradles used for supporting decking over waterproof membranes or floating floors over internal flooring. They are manufactured from reclaimed and/or recycled rubber.

Scope

2.1 DekCradles and ErgoFlor cradles have been appraised for use as supports for timber joists or battens that support decking or internal floating floors.

2.2 DekCradles are for use in externally to support decking. ErgoFlor cradles are for use internally to support flooring.

Building Regulations

National Construction Code Series (NCC 2016) Building Code of Australia (BCA)

3.1 **In the Opinion of BRANZ, DekCradle and ErgoFlor cradles if designed, used, installed and maintained in accordance with the statements and conditions of this Appraisal, will meet or contribute to meeting the following provisions of the BCA:**

BCA Volume One – Class 2 to Class 9 Buildings

Part B1 – Structural Provisions: Performance Requirement BP1.1. DekCradle and ErgoFlor cradles meet the requirements for actions arising from the following imposed actions: permanent actions (dead loads) and imposed actions (live loads arising from occupancy and use) [i.e. BP1.1 (b) (i) and (ii)]. See Paragraph 8.1.

BCA Volume 2 – Class 1 and Class 10 Buildings

Part 2.1 – Structure: Performance Requirement P2.1.1. DekCradle and ErgoFlor cradles meet the requirements for actions arising from the following imposed actions: permanent actions (dead loads) and imposed actions (live loads arising from occupancy and use) [i.e. P2.1.1 (b) (i) and (ii)]. See Paragraph 8.1.

Technical Specification

4.1 DekCradles and ErgoFlor cradles are manufactured from reclaimed and/or recycled rubber. They are bonded with a blocked resin formulation. The DekCradles are manufactured from brown coloured rubber and the ErgoFlor cradles are manufactured from black rubber with a red fleck. The DekCradles and ErgoFlor cradles are otherwise identical dimensionally, being 90 mm wide, 70 mm long and 40 mm deep. They have a 49 mm wide, 20 mm deep channel running along the 70 mm axis to form the cradle.

Handling and Storage

5.1 DekCradles and ErgoFlor cradles are reasonably robust. They should be kept dry before installation, especially the ErgoFlor cradles for use internally.

Technical Literature

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

Design Information

General

7.1 DekCradles can be used to provide a level and/or elevated deck surface.

7.2 DekCradles and ErgoFlor cradles are suitable for use with most waterproofing membranes, however, confirmation as to their suitability should be sought from the membrane supplier.

7.3 The supporting structure for the DekCradles or ErgoFlor cradles and associated framing and decking or flooring must be designed to carry the imposed dead load of the floor system along with any associated live load.

7.4 DekCradles are not fixed to the substrate that they sit on, so wind uplift of the floating decking may need to be considered. While solid balcony railings and walls provide protection against strong winds, designers and end users need to be aware of uplift from winds in exposed environments.

7.5 Battens or joists used with the DekCradles or ErgoFlor cradles must be a minimum of 45 mm wide and 40 mm high.

Structure

8.1 When planning the layout of the cradles, the maximum spacing between battens or joists is 400 mm. Cradles must be spaced at no more than 450 mm centres along the battens or joists. When installing DekCradles or ErgoFlor cradles on timber framed decks or floors, they should be placed within 100 mm of the joists below.

8.2 At the above spacing DekCradles and ErgoFlor cradles are capable of carrying 2 kPa live load for decks, and 3 kPa live load for floors with minimal deflections. For loads above this, specific design of the underlying structure and the overlying flooring may be required.

Durability

Serviceable Life

9.1 The expected serviceable life for the DekCradle and ErgoFlor cradles is at least 15 years.

Maintenance

10.1 DekCradle and ErgoFlor cradles should need no maintenance during their serviceable life. In external deck applications allowance should be made to remove built-up debris from the waterproofing surface.

Safety From Falling

11.1 Barriers that are required around the perimeter of decks or floors that incorporate DekCradle or ErgoFlor installations must meet the height requirements of BCA Volume 1, D2.16 and Volume 2, P2.5.2 after the installation of the cradles and decking.

Fire

BCA Bushfire Zones

12.1 The use of DekCradles and ErgoFlor cradles on buildings located within designated bushfire zones shall be restricted to the requirements of AS 3959.

12.2 The Building designer is responsible for determining the Bushfire Attack Level for the building in accordance with AS 3959, which will in turn determine whether the DekCradles or ErgoFlor cradles are suitable for use.

Installation Information

13.1 Installation of the DekCradle and ErgoFlor cradles must be in accordance with the Technical Literature.

13.2 The site must be clean and free from any waste.

13.3 The DekCradle or ErgoFlor cradles must be laid out such that there is no more than 450 mm between cradles along the length of the battens or joists, and no more than 400 mm between the battens or joists. There should be a cradle no more than 50 mm from each end of a batten or joist.

13.4 DekCradle and ErgoFlor cradles must not be fixed down to the surface that they are placed upon.

13.5 Joists may need to be ripped to make up for variations in floor height or for fall of a deck surface. Alternatively, shims or packers may be used within the cradles. The shim or packer is connected to the batten or joist, not the cradle, with a daub of suitable adhesive. The shim or packer cannot be packed up higher than 10 mm.

13.6 Shims or packers used with DekCradles in external locations should be 42 mm wide plastic H packers.

13.7 No packing or shims should be placed between DekCradles and the underlying membrane. In internal locations ErgoFlor cradles may be used with packing or shims beneath them as long as the footprint of the packing is larger than the footprint of the ErgoFlor cradle.

13.8 Install the decking or flooring following the appropriate building practice and product specifications. All fastenings of the top surface material must be connected to only the battens or joists, not the DekCradle or ErgoFlor, nor to or through the substrate below.

Basis of Appraisal

The following is a summary of the Technical Investigation carried out:

Tests

14.1 Compressive testing of the cradles was undertaken by BRANZ Ltd to determine the stiffness of the cradles and their suitability under expected service loads.

Investigations

15.1 A structural assessment of the DekCradle and ErgoFlor cradles has been carried out based on the structural testing.

15.2 A durability assessment has been carried out on DekCradles and ErgoFlor cradles by BRANZ technical experts.

Quality

16.1 The manufacture of DekCradle and ErgoFlor Cradles has been examined by BRANZ and found to be satisfactory.

16.2 Quality of supply of the product to the market is the responsibility of B & C Systems International Ltd.

16.3 Designers are responsible for the design of the building and incorporating DekCradle and ErgoFlor cradles in accordance with this Appraisal and the Technical Literature.

16.4 Quality of installation is the responsibility of the installer.

Sources of Information

- AS 3959 – 2009 Construction of buildings in bushfire-prone areas.
- National Construction Code Series, Building Code of Australia 2016, Australian Building Codes Board.

BRANZ

In the opinion of BRANZ, DekCradle™ and ErgoFlor Timber Framing Cradles 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 B & C Systems International 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. B & C Systems International 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 B & C Systems International 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 B & C Systems International Limited or any third party.

For BRANZ

Chelydra Percy
Chief Executive

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