biform
SOLID COMPOSITE DECKING

architecture +engineering
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Product Technical Statement

For

BiForm Solid Composite Decking, FORM 130, FORM 140 & ForestBoard

PTS Version 5. December2024

1. Product Description

BiForm Solid Composite Decking boards are a timber decking alternative made from wood plastic composite for use over timber and aluminium framed decks. The boards are made up of 30% recycled plastic and 60% waste timber fibre with the remainder of the composition consisting of anti-fungal agents, UV stabilisers and colouring. The boards are 4850mm long and are available in three profiles- FORM 130 (130mm x 19mm) and FORM 140 (140mm x 25mm) and ForestBoard (138 x 20mm).

2. Purpose and Use

The intended use of Biform composite decking boards (FORM 130, FORM 140 and ForestBoard) is as an alternative to timber, or other conventional decking materials for external decks.

3.1 This product technical statement is based on

3. Conditions

BRANZ Appraisal No. 680(2015) Amended 2019, Intertek Test Report No. 161213008SHF-BP-1 (2017-02-09), and Static Bending Test Results Sample P15A, Model No. LHMA066 (2016-12-06).

3.2 This product technical statement will no longer be valid if the test reports or BRANZ Appraisal are no longer current, or any changes are made to the product specifications.

3.3 The BRANZ Appraisal states;

All three profiles of BiForm Solid Composite Decking are suitable for use on decks designed for 2kPa floor loads as required by NZS 3604 Paragraph 7.4.1.2.

BiForm's FORM 140 profile can be used on specifically engineered decks with a maximum serviceability live load of 5kPa and a maximum point load of 1.8kN provided the deck span does not exceed 450mm and the decking is continuous over a minimum of two spans.

In heavy public access areas, it is recommended that the decking boards are laid at right angles to the main direction of pedestrian traffic. Minimum ground clearance of no less than 300mm over unpaved ground and 50mm minimum over waterproof membrane and balconies. Overhang of the support framing, on the long edge of the board must not exceed 10mm for FORM 130 and 20mm for ForestBoard and FORM 140. Overhang on the end of all three boards is 100mm.

3.4 Burrett and Associates Ltd calculations demonstrate;

- that all three profiles are suitable for use on decks designed for Domestic and Residential floor loads of 2kPa or 1.8KN as required by AS/NZS 1170-1 and NZS3604 Paragraph 7.4.1.2.

-FORM 130 is suitable for use on decks designed for floor loads of 3kPa, 4kPa or 2.7KN point loads as required by AS/NZS 1170-1 if joist centres are limited to 300mm. Refer to the following specific design joist tables.

-FORM 140 and ForestBoard are suitable for use on decks designed for floor loads of 3kPa, 4kPa or 2.7KN point loads as required by AS/NZS 1170-1 if joist centres are limited to 400mm crs. Refer to the following specific design joist tables.

4. Building Regulations

Compliance with the New Zealand Building Code.

Burrett and Associates Ltd consider that if Biform FORM 130, FORM 140 and Forest Board are manufactured, designed, used, installed and maintained in accordance with the following documents available on the Biform ltd website;

- Biform Installation Guidelines
- BRANZ Appraisal No. 680(2015) Amended 2019
- Biform PTS Version 4. Feb 2020
- Biform Care and Maintenance Guide

they provide Alternate Solutions in terms of the New Zealand Building Code that comply with the provisions of the following performance criteria.

- Clause B1 Structure, B1.3.1, B1.3.2, B1 3.3 (a), (b) and (j).
  (Compliance demonstrated by Branz Appraisal No. 680(2015) Amended 2019, testing, calculation not to B1/VM1 structure, and calculation in accordance with B1/VM1 structure).
- Clause B2 Durability, B2.3.1(b)
  (Compliance demonstrated by Branz Appraisal No. 680(2015) Amended 2019)
- Clause CV/M2 – FIRE SAFETY: Biform Solid Composite Decking FORM 130 and FORM 140 achieves a critical radiant flux of 5.7 kW/m² and the ForestBoard achieves a critical radiant flux of 5.4 kW/m² when tested in accordance with ISO 9239 Part 1. This exceeds the minimum critical radiant flux requirements specified in the NZBC. Refer to NZBC Acceptable Solutions C/AS1 - C/AS2 for further information.
- Clause D1 Access, based on CSIRO Oil-Wet Ramp testing, BiForm Solid Composite Decking achieves a slip resistance rating of R11.
- Clause F2 Hazardous Building Materials: Performance F2.3.1. BiForm Solid Composite Decking meets this requirement and will not present a health hazard to people.

All technical documentation quoted, (BRANZ Appraisal, Slip Resistance Testing, Safety Data Sheet and Critical Radiant Flux Testing) is available on the Biform Ltd website, and is also on EBOSS and Productspec.

5. Design Instructions

5.1 General design guidance can be found on the Biform website.

www.biform.co.nz.

New Zealand specific design shall be in accordance with the relevant sections of the New Zealand Building Code.

5.2 Timber deck structure to support the Biform decking must be designed using the relevant sections of the New Zealand Building Code (Verification methods B1/VM1 and VM4, or the Acceptable Solution B1/AS1-NZS3604:2011), subject to the following additional requirements.

5.2.1 Timber joist size and spans

Specific design joist sizes and blocking requirements are given in the tables below. The joist sizes and spans for the 2kPa or 1.8KN loads match NZS3604. All joists are required to be supported laterally by blocking at S – Supports , M – Midspan or TH – Third points. Refer to tables below. Blocking to consist of full depth solid blocking between all joists.

The tables assume the Forestboard is screw fixed only and other boards are either screwed or fixed with clips.

All joists are ‘wet in service’.

5.2.2 Decking Boards

It is assumed all decking boards are continuous over at least two spans.

BIFORM Form 130 Joist centres – **400mm**		
DECK LOADING: **2kPa** LIVE LOAD UNIFORMLY DISTRIBUTED OR **1.8KN** CONCENTRATED LOAD		
JOIST SIZE	JOIST SPAN	BLOCKING (S, M, TH)
90x45 SG8	1.6m	S only
140x45 SG8	2.5m	S only
190x45 SG8	3.4m	S and M
240x45 SG8	4.3m	S and TH
290x45 SG8	5.2m	S and TH

BIFORM FORM 130 Joist centres **300mm**		
DECK LOADING: **3kPa** LIVE LOAD UNIFORMLY DISTRIBUTED OR **2.7KN** CONCENTRATED LOAD		
JOIST SIZE	JOIST SPAN	BLOCKING (S, M, TH)
90x45 SG8	0.9m	S only
140x45 SG8	2.0m	S only
190x45 SG8	3.25m	S and M
240x45 SG8	4.1m	S and TH
290x45 SG8	4.9m	S and TH

BIFORM ForestBoard Joist centres – **400mm**		
DECK LOADING: **2kPa** LIVE LOAD UNIFORMLY DISTRIBUTED OR **1.8KN** CONCENTRATED LOAD		
JOIST SIZE	JOIST SPAN	BLOCKING (S, M, TH)
90x45 SG8	1.6m	S only
140x45 SG8	2.5m	S only
190x45 SG8	3.4m	S and M
240x45 SG8	4.3m	S and M
290x45 SG8	5.2m	S and M

BIFORM ForestBoard Joist centres – **400mm**		
DECK LOADING: **3kPa** LIVE LOAD UNIFORMLY DISTRIBUTED OR **2.7KN** CONCENTRATED LOAD		
JOIST SIZE	JOIST SPAN	BLOCKING (S, M, TH)
90x45 SG8	0.9m	S only
140x45 SG8	1.95m	S only
190x45 SG8	2.85m	S and M
240x45 SG8	3.6m	S and M
290x45 SG8	4.35m	S and M

BIFORM FORM 140 Joist centres **400mm**		
DECK LOADING: **2kPa** LIVE LOAD UNIFORMLY DISTRIBUTED OR **1.8KN** CONCENTRATED LOAD		
JOIST SIZE	JOIST SPAN	BLOCKING (S, M, TH)
90x45 SG8	1.6m	S only
140x45 SG8	2.5m	S only
190x45 SG8	3.4m	S and M
240x45 SG8	4.3m	S and TH
290x45 SG8	5.2m	S and TH

BIFORM FORM 140 Joist centres – **400mm**		
DECK LOADING: **3kPa** LIVE LOAD UNIFORMLY DISTRIBUTED OR **2.7KN** CONCENTRATED LOAD		
JOIST SIZE	JOIST SPAN	BLOCKING (S, M, TH)
90x45 SG8	0.9m	S only
140x45 SG8	1.95m	S only
190x45 SG8	2.85m	S and M
240x45 SG8	3.6m	S and TH
290x45 SG8	4.35m	S and TH

BIFORM FORM 130 Joist centres – **300mm**		
DECK LOADING: **4kPa** LIVE LOAD UNIFORMLY DISTRIBUTED OR **2.7KN** CONCENTRATED LOAD		
JOIST SIZE (Wet in Service)	JOIST SPAN	BLOCKING (S, M, TH)
90x45 SG8	0.9m	S only
140x45 SG8	2.0m	S only
190x45 SG8	2.85m	S and M
240x45 SG8	3.6m	S and TH
290x45 SG8	4.3m	S and TH

BIFORM ForestBoard Joist centres – **400mm**		
DECK LOADING: 4**kPa** LIVE LOAD UNIFORMLY DISTRIBUTED OR **2.7KN** CONCENTRATED LOAD		
JOIST SIZE (Wet in Service)	JOIST SPAN	BLOCKING (S, M, TH)
90x45 SG8	0.9m	S only
140x45 SG8	1.85m	S only
190x45 SG8	2.5m	S and M
240x45 SG8	3.15m	S and M
290x45 SG8	3.8m	S and M

BIFORM FORM 140 Joist centres – **400mm**		
DECK LOADING: **4kPa** LIVE LOAD UNIFORMLY DISTRIBUTED OR **2.7KN** CONCENTRATED LOAD		
JOIST SIZE (Wet in Service)	JOIST SPAN	BLOCKING (S, M, TH)
90x45 SG8	0.9m	S only
140x45 SG8	1.85m	S only
190x45 SG8	2.5m	S and M
240x45 SG8	3.15m	S and TH
290x45 SG8	3.8m	S and TH

5.2.2 Supporting structure

Deck bearers, foundations and deck bracing is to be sized to support the design loading. Where loading is 2kPa/1.8KN NZS3604:2011 is applicable.

Where bracing is required by the New Zealand Building Code, a separate bracing system must be provided.

Where Biform boards are fixed with clips they cannot be relied upon to transfer bracing loads in the deck plane. Therefore contrary to clause 7.4.2.2 of NZS 3604:2011, decks that project less then 2m from the building, and that support Biform composite decking boards, shall have subfloor bracing or strap bracing in the plane of the decking.

5.2.3 Additional Conditions

Where Biform boards are required to support point loads not covered by the scope of the BRANZ Appraisal No. 680(2015) (amended 2019) or the tables included in this technical statement, their suitability must be assessed by a CPEng structural engineer.

6. Construction and Installation Instructions

Available at http://biform.co.nz/resources-cad-drawings/

7. Maintenance Requirements

Available at http://biform.co.nz/resources-cad-drawings/

8. Warranty Information

Warranty Information – 25 year limited liability warranty

Details available at
http://biform.co.nz/resources-cad-drawings/

9. Quality Assurance

ISO 9001:2015 (Compliance demonstrated by Branz Appraisal No. 680(2015) Amended 2019).

10. Product Support

Available at:

BIFORM LTD
PO Box 13842, Onehunga,
Auckland 1643

Phone 0800449274

Email info@biform.co.nz

11. Product Technical Statement Validity

This product technical statement is valid until further notice, subject to the following:

11.1 That this product technical statement relates only to the product described in this statement, shall be read as a whole together with the referenced documents, and is applicable only in New Zealand.

11.2 That Biform Ltd undertakes to have the product technical statement reviewed by Burrett and Associates Ltd when;

- changes are made to the applicable parts of the New Zealand Building Code, and at a minimum at five yearly intervals.
- any change is made to the product, quality assurance processes, or the supporting documentation referred to in the product technical statement.
- the BRANZ Appraisal No. 680(2015) Amended 2019, Intertek Test Report No. 161213008SHF-BP-1 (2017-02-09), and Static Bending Test Results Sample P15A, Model No. LHMA066 (2016-12-06), are modified or are no longer valid.

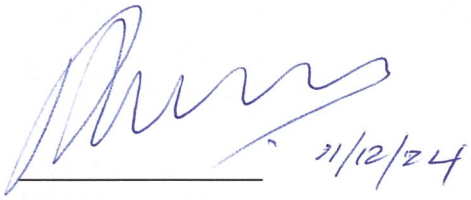
12. Disclaimer

The information contained in this document is current as at October 2024 and Burrett and Associates Ltd assumes no responsibility for:

a) the nature of individual examples of, batches of, or individual installations of the product,
b) methods of installation and workmanship,
c) any guarantee or warranty offered by Biform Ltd.

13. Signature

On Behalf of **Burrett and Associates Ltd**



Paul Williams

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