

Construction Manual



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The NiuBridge Modular System

The NiuBridge System is a comprehensive Engineered Wood Product bridge building system, providing a cost-effective solution for new bridge construction as well as refurbishment of existing structures.

The system exploits the structural advantages of a sustainable plantation resource manufactured under the controls of a Type 5 ISO 17065 JAS-ANZ product certification scheme.

The NiuBridge system comprises:

- **NiuDeck:** Heavy Duty Plywood Decking System
- **HPF Modular System:** Lightweight high performing modular system for single spans up to 15m
- **SHPF Modular System:** Readily transportable high performing system for longer spans up to 24m
- **NiuKerb:** Prefinished Plywood Kerbing system
- **ECO Modular System:** Cost effective single and dual lane modular system ideally suited to temporary installations with single spans up to 10m.



The NiuBridge modular bridge system is a light weight system for all spans up to 24m. NiuBridge is suitable for installation on a variety of existing substructures including timber, heritage masonry, steel and concrete. NiuBridge is also ideally suited for installation on precast spread footing abutment systems, as well as the conventional piles and abutments. Whether installed onto existing or new substructures, NiuBridge is the ideal cost-effective solution with fast and simple installation, providing a flexible modular system that can incorporate site specific requirements, without compromising the systems integrity.

NiuBridge exploits the advantages of natural timber, which is not subject to fatigue failure, unlike other materials. Fully protected from decay and termites, NiuBridge has a design life of 50+ years.

Advantages:

- Light weight; minimal crane size required.
- Alkaline Copper Quaternary (ACQ) H4 "Veneer Treatment" preservation.
- 50-year treatment warranty.
- Significantly reduced installation time and cost
- Allows cantilevering to widen bridges and accommodate guard rail and footbridges.
- Option of a pre-applied bituminous deck wearing surface on modules.
- Fire-resistance coating option available.
- Compliant to Austroads T44 or AS5100 SM1600 loading.
- Flexible design options and custom design service.
- Sustainable plantation resource (PEFC Chain of Custody).
- Uses traditional installation equipment and skills.



Purpose

The purpose of this construction manual is to provide guidance on specifications and construction requirements for installation of all elements of the NiuBridge system.

This document is of a general nature and should be read in conjunction with the detailed “project specific” documents including, but not limited to, Drawings, Contracts, Project Specifications and Safe Work Method Statements.

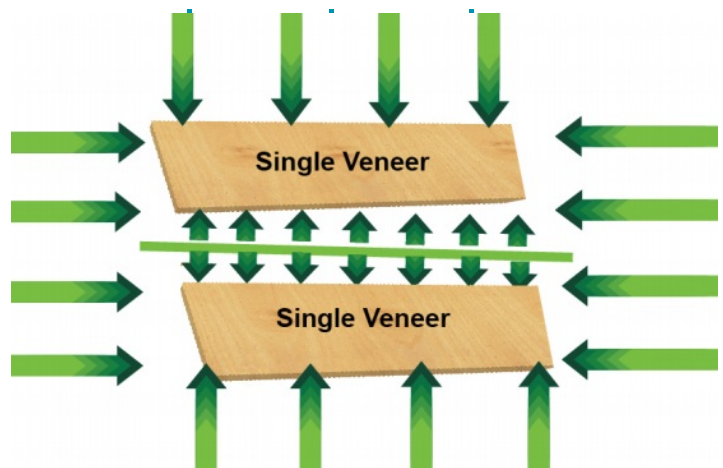
Typical installation arrangements that are contained in the NiuBridge standard drawings do not constitute site specific site layout drawings; these drawings need to be provided by the consulting engineer for the project. Any differences between the site-specific documentation and this guide need to be referred to a PNGFP representative by the relevant authorised personnel.

Preservation Treatment

NiuBridge utilizes the veneer preservation treatment method to ensure complete protection from termites, rotting and fungal decay. Veneer treatment is the only way to ensure complete penetration and that any unsealed cut panels will not decay.

Veneer treatment method is where the individual sheets of veneer are preservative treated before being fabricated into plywood to ensure 100% penetration. The treated veneers are then bonded with a permanent phenolic resin which is often referred to as “A” bond or Marine “A” or Structural bond.

Structural “A” bonds require rigorous testing after submersion in boiling water for 72 hours or 6 hours under high pressure steam to ensure a high-quality bond.



Manufacturing Standards

- AS/NZS 2269:2012; Plywood – Structural
- AS/NZS 4357:2005; Structural Laminated Veneer Lumber
- AS/NZS 1604.1:2012; Specification for preservative treatment Part 1: Sawn and Round Timber
- AS/NZS 1604.3:2012; Specification for preservative treatment Part 3: Plywood
- AS/NZS 1604.4:2012; Specification for preservative treatment Part 4: Laminated veneer lumber (LVL).

Design Standards

- AS 1720.1:2010; Timber structures – Part 1: Design Methods, Section 5 Plywood
- AS 5100.2:2017; Bridge Design
- 92 Austroads Bridge Design Code.

NiuDeck

NiuDeck is a purpose designed and engineered heavy plywood decking system primarily used for re-decking traditional timber road bridges, which can also be used with a variety of supporting structures. NiuDeck is also suitable for footbridge, wharf and rail deck applications.

Manufactured using a proven durable glue system together with 100% “veneer” preservation treatment method, the product is well designed for adverse climatic conditions of bridge applications, ensuring a long design life.

Developed as a renewable alternative to traditional hardwood sawn timber, NiuDeck is manufactured from sustainable plantation pine that is processed with hydro-electric power to the highest quality standards.

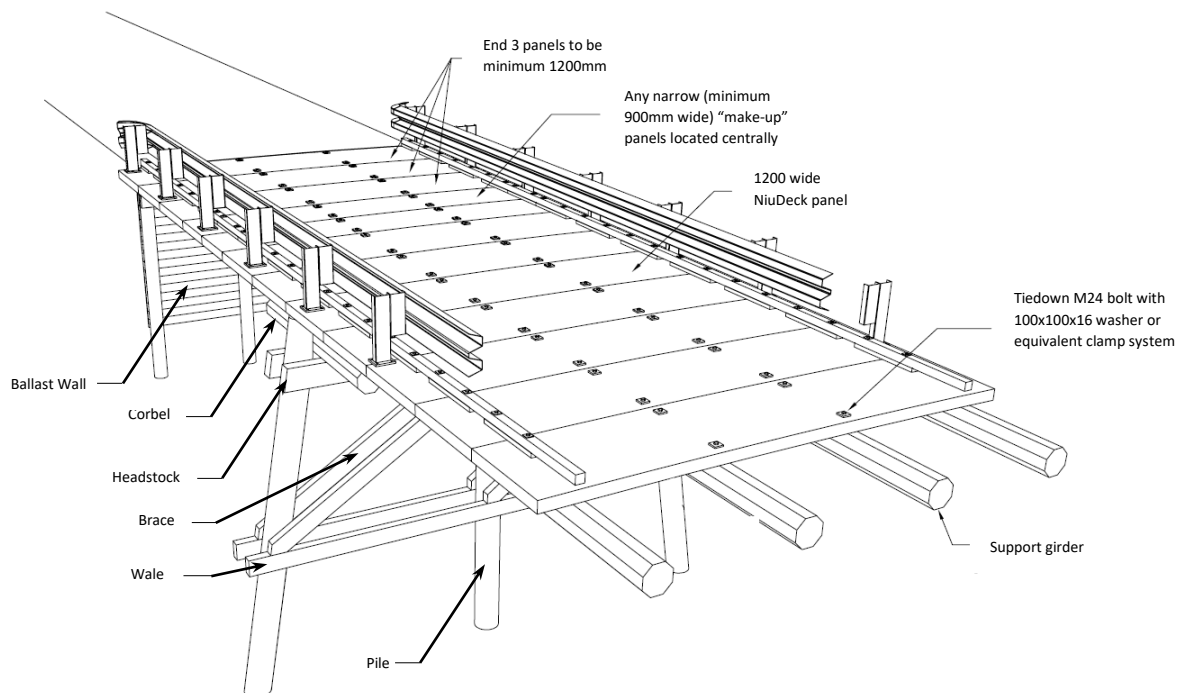


Fig 1: Typical Traditional Timber Bridge Components

Available in a range of thicknesses, NiuDeck offers the engineer a cost-effective solution for a wide variety of applications which comply with either Austroads Bridge Design Code or Australian standard AS5100 Bridge Design. In addition, a custom design service is available to handle the most challenging applications.

Dimensions:

- Variable length up to 14m
- Standard lengths of 5.0m, 7.0m, 9.0m
- Standard width 1200mm
- Non-standard widths from 900 to 3600mm
- Standard thicknesses from 27mm to 198mm (other thicknesses available on request)

Manufacturing Specification:

- “A” Bond (AS/NZS2269)
- Veneer grade “C” and “D” (AS/NZS2269)
- Preservation treatment to Hazard Class H4 (AS/NZS 1604.3) by veneer treatment method
- Density of approximately 600 Kg/m³ when shipped
- Moisture content between 8 to 15% when shipped



Characteristic Properties:

Characteristic Properties	Bending	Shear
Stress Grade (parallel/perpendicular)	F14/F14	F14/F14
Bending strength (f_b) (parallel/perpendicular)	36MPa/36MPa	4.8MPa/4.8MPa
Moisture factor (AS1720.1) k_{19}	0.8	0.8
Assembly factor (AS1720.1) g_{19}	1.0	0.4

Deflection:

- Reduction factor k_e is adopted to allow for significant shear deflections due to a low shear modulus and span to depth ratios of less than 10:1.
- $k_e : 0.75$

Standard Thickness Section Properties¹:

Thickness (mm)	I longit x10 ⁶ mm ⁴	Z longit x10 ³ mm ⁴	I trans x 10 ⁶ mm ⁴	Z trans x 10 ³ mm ⁴
27 ²	1.1	81	0.58	52
33 ²	1.9	115	1.1	81
56	8.6	303	6.3	216
84	28.4	663	22	505
112	66.8	1168	52.8	908
140	129.9	1816	103.6	1427
150	166.9	2143	134.6	1703
155	188.05	2319	151.8	1847
167	223.4	2609	179.6	2062
195	355.1	3546	285.6	2811

¹For one metre wide

²Bitumen pre-coated panels for footbridges

Typical Thicknesses Required:

Parameter	1300mm Maximum Girder Spacing	1600mm Maximum Girder Spacing
Clear Span (mm)	1150mm	1450mm
Thickness for 80 kN wheel load to AS 5100 Bridge Design	150mm	155mm
Maximum Cantilever for 80kN wheel load	450mm	500mm
Thickness for 70kN wheel load to 92 Austroads Bridge Design Code	140mm	150mm
Maximum Cantilever for 70kN wheel load to 92 Austroads Bridge Code (mm)	450mm	500mm

Assumptions:

- Maximum cantilever is measured from the inside of the kerb/guard rail to the girder centreline.
- Panels are laid perpendicular to girder (zero degrees skew).
- For AS5100 designs the critical live load is assumed to be W80 wheel load.
- Wheel load patch size is 200 x 500mm.
- Deck is assumed to have at least 3 continuous spans.

Limitations:

- The above design values are indicative only. Specific bridge decks must be designed and certified by an appropriately qualified and registered engineer to suit the applicable loads and conditions.

Skew Decks

The section properties detailed are applicable when the NiuDeck panels are laid perpendicular to the girders. Skew decks are where the panels are laid at an angle other than perpendicular.

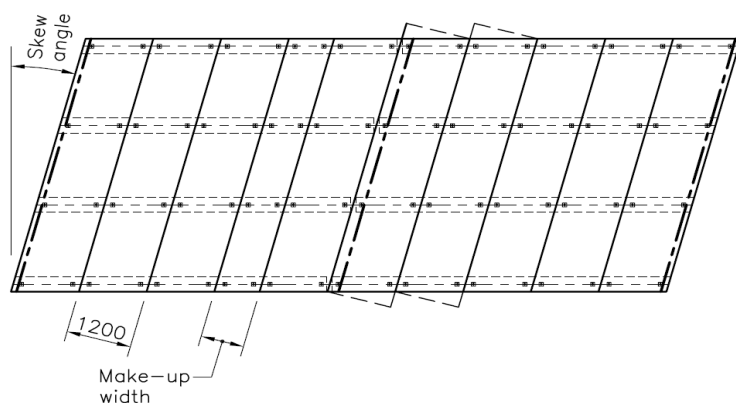
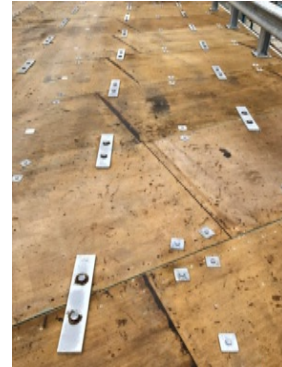


Fig 2: Plan View of Skew Deck

Installation

To ensure correct installation of the product, we recommend the following instructions be strictly adhered to:

- Supporting structure needs to be sound prior to installation of NiuDeck.
- Changing the thickness or width of the NiuDeck product from the approved design during the installation process is not allowed, unless a variation to the design is obtained and signed off by the design engineer.
- Docking to length of both NiuDeck during the installation process is allowed, however any saw cut done by hand, chain saw or circular saw needs to be a minimum distance of 25mm from any visible screws. If screws cannot be located, then it is recommended to cut the NiuDeck with a concrete saw.
- NiuDeck needs to be fixed at each girder with a minimum of 2 bolts (one per side). M24 is recommended for extra longevity with a minimum 100 x 100 x 16mm washer.
- Alternative fixing of panels to girder can be done by prefabricated steel straps and/or brackets.
- Panels with widths of between 900mm and 1200mm are to be located in the centre of the deck with at least 3 x 1200mm panel widths away from the abutments.
- Ensure deck panels are evenly supported by the girders.
- Coat the tops of the girders with a bituminous seal for protection from moisture that may seep through, between the deck panels.
- Load distributors are recommended to be attached to the underside, between and parallel to the girders, to control differential deflection of adjacent panels.



NiuDeck Installation (cont)

Fasteners:

- The minimum corrosion protection for fasteners shall be a heavy hot dipped galvanised coating. However, in coastal or in environments where there will be prolonged periods of elevated moisture content ($> 18\%$) it is recommended 316 stainless steel fasteners be used.
- It is also recommended that all fasteners be coated in grease before installation.

Camber:

- Camber (approximately 1%) can be built into the NiuDeck panels at installation time via differing height girders or packing corbels. Additional camber can also be obtained by shaping the bitumen deck wearing surface.



FootBridges

Footbridges

NiuDeck is ideally suited for most footbridge applications and is available in standard pre-coated panel sizes of 2400x1200x27mm and 2400x1200x33mm. Larger custom panel sizes, with or without coating, available on request.



HPF Modular

The NiuBridge HPF modular bridge system is a high performing engineered wood product system suitable for all single spans applications up to 15m. NiuBridge HPF is suitable for installation on a variety of existing substructures, including timber, heritage masonry, steel and concrete. NiuBridge HPF is also ideally suited for installation on precast spread footing abutment systems, as well as the conventional piles and abutments.



Key features:

- Single span length up to 15m
- Compliant to T44 or SM1600 loading
- Light weight
- Rapid installation
- Pedestrian bridge designs, including cantilevered options, available on request
- Non-standard lengths and widths available on request.



HPF Modular (cont)

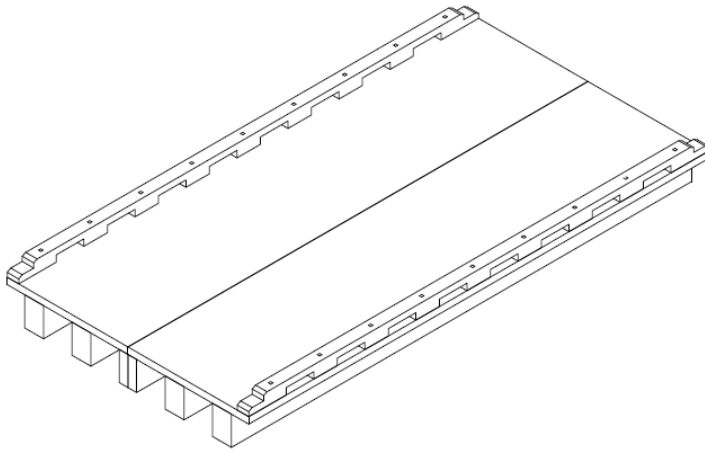


Table 1: T44 Single Lane HPF NiuBridge Attributes Table

Span (m)	Lane Width: Inside Kerbs (m)	Overall Width: Outside Kerbs (m)	Module Width (m)	Deck Thickness (mm)	Girder Depth (mm)	Kerb Width (mm)	Kerb Depth (mm)	Approximate Module Weight ³ (tonne)
6	4	4.4	2.2	108	342	200	216	3.2
7	4	4.4	2.2	108	342	200	216	3.7
8	4	4.4	2.2	108	342	200	216	4.2
10	4	4.4	2.2	108	445	200	216	5.8
12	4	4.4	2.2	135	555	200	216	8.0
15	4	4.4	2.2	135	780	200	216	11.7

Note 3 : Includes 2 coat bitumen chip seal

Table 2: SM1600 Single Lane HPF NiuBridge Attributes Table

Span (m)	Lane Width: Inside Kerbs (m)	Overall Width: Outside Kerbs (m)	Module Width (m)	Deck Thickness (mm)	Girder Depth (mm)	Kerb Width (mm)	Kerb Depth (mm)	Approximate Module Weight ³ (tonne)
6	4.1	4.5	2.25	135	615	200	216	4.4
7	4.1	4.5	2.25	135	615	200	216	5.0
8	4.1	4.5	2.25	135	615	200	216	5.7
10	4.1	4.5	2.25	135	670	200	216	7.4
12	4.1	4.5	2.25	135	840	200	216	9.8
15	4.1	4.5	2.25	135	1025	200	216	13.7

Note 3 : Includes 2 coat bitumen chip seal

HPF Modular (cont)

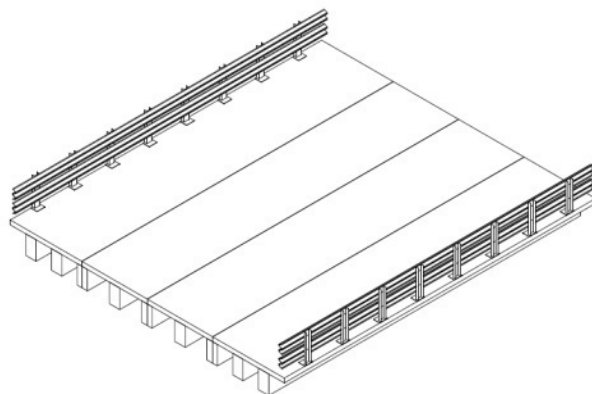


Table 3: T44 Double Lane Attributes Table

Span (m)	Lane Width: Inside Kerbs (m)	Overall Width: Outside Kerbs (m)	Outer Module Width (m)	Inner Module Width (m)	Deck Thickness (mm)	Girder Depth (mm)	Approximate Outer Module Weight ³ (tonne)	Approximate Inner Module Weight ³ (tonne)
6	7.76	8.16	2.4	1.68	108	342	3.4	3.2
7	7.76	8.16	2.4	1.68	108	342	3.9	3.6
8	7.76	8.16	2.4	1.68	108	342	4.4	5.0
10	7.76	8.16	2.4	1.68	108	445	6.1	6.6
12	7.76	8.16	2.4	1.68	135	555	8.5	7.0
15	7.76	8.16	2.4	1.68	135	780	12.4	10.2

Table 4: SM1600 Double Lane HPF NiuBridge Attributes Table

Span (m)	Lane Width: Inside Kerbs (m)	Overall Width: Outside Kerbs (m)	Outer Module Width (m)	Inner Module Width (m)	Deck Thickness (mm)	Girder Depth (mm)	Approximate Outer Module Weight ³ (tonne)	Approximate Inner Module Weight ³ (tonne)
6	7.76	8.16	2.4	1.68	135	615	4.4	3.6
7	7.76	8.16	2.4	1.68	135	615	5.0	4.2
8	7.76	8.16	2.4	1.68	135	615	5.6	4.7
10	7.76	8.16	2.4	1.68	135	640	7.3	6.1
12	7.76	8.16	2.4	1.68	135	840	10.4	8.6
15	7.76	8.16	2.4	1.68	135	1025	14.4	11.9

HPF Modular (cont)

HPF Modular standard Inclusions:

- NHPF modules including kerbs
- Elastomeric bearing pads
- Impact angles
- Girder end brackets
- Bitumen deck wearing surface with a minimum thickness of 30mm
- Module jointing hardware (sealant and bolts).



Fixing:

- Supporting structure needs to be sound prior to installation of NiuBridge.
- NiuBridge needs to be fixed at each girder end to the abutment or headstock with a suitably designed fastening system taking into consideration site-specific details. Possible methods include: -
 - Pre-fabricated brackets bolted to the side of the girder.
 - Through tie down bolts located adjacent to each girder on the downstream side; M24 bolts are recommended with a 100 x 100 x 16mm washer.
- Ensure NiuBridge modules are placed on the elastomeric bearing pads which are evenly supported by the sub-structure.



Corrosion:

- The minimum corrosion protection for fasteners shall be a heavy hot dipped galvanised coating. However, in coastal environments or where there will be prolonged periods of elevated moisture content (> 18%), it is recommended that 316 stainless steel fasteners be used. It is also recommended that all fasteners be coated in grease before installation.



Camber:

- Camber can be built into the supporting structure. Additional camber can also be obtained by shaping the bitumen deck wearing surface.

Installation

Whether the HPF Modular system is installed on an existing or new substructure (timber, steel or concrete), the typical installation process is as follows. For further information please refer to the detailed HPF Modular installation guide:

- Ensure substructure is sound and suitable to accommodate the HPF Modules.
- Place elastomeric pads (if specified) on headstocks, corbels or abutments.
- Place the downstream HPF modules on the headstocks and/or abutments.
- Secure downstream module to the abutment/headstock with the specified fastening system.
- Place adjacent module(s) on the headstocks and/or abutments.
- Install and tighten module joining bolts, ensuring a tight join between the modules.
- Secure module to the abutment/headstock with the specified fastening system.
- Complete longitudinal deck jointing.
- Install and tighten tie down bolts.
- Install additional barriers if required.
- Install (or patch if pre-applied) deck wearing surface.



SHPF Modular

The NiuBridge SHPF modular bridge system is a high performing engineered wood product system suitable for all single spans applications up to 24m under T44 loading. NiuBridge SHPF unique design allows the bridge to be shipped in easily transportable sections which are then readily spliced together on site. SHPF NiuBridge is suitable for installation on a variety of substructures, both pile and spread footings, including timber, heritage masonry, steel and concrete.



Key features:

- Single span lengths from 15 to 24m
- Compliant to T44 loading
- Standard single lane width 3800mm
- Segmented design allows for easy transportation and rapid assembly when on site
- Light weight.

SHPF Modular standard Inclusions:

- SHPF modules including kerbs
- Elastomeric bearing pads
- Module and splice jointing bolts, plates, angles and screws
- Impact angles for both approaches
- Bitumen deck wearing surface with a minimum thickness of 30mm
- Module jointing hardware (glue and screws).

SHPF Modular (cont)

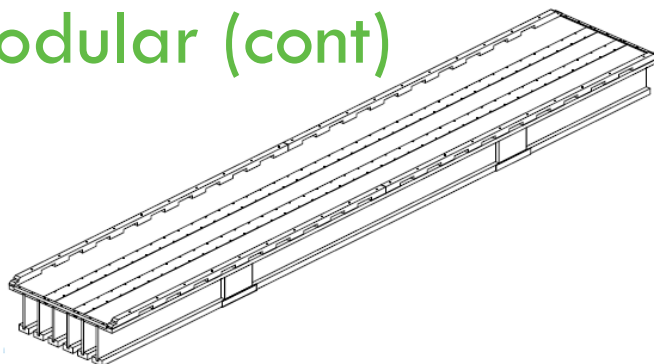


Table 5: T44 Single Lane SHPF NiuBridge Attributes Table

Total Span (m)	Approach Section Span (m)	Centre Section Span (m)	Overall Width Outside Kerbs (m)	Lane Width Inside Kerbs (m)	Deck Thickness (mm)	Module Depth (mm)	Girder Depth (mm)	Kerb Width (mm)	Kerb Depth (mm)	Approximate Total Weight ⁴ (tonne)
20	5	10	4.2	3.8	135	1389	342	200	216	30.0
22	5.5	11	4.2	3.8	135	1389	445	200	216	33.0
24	6	12	4.2	3.8	135	1389	445	200	216	36.0

Note 4 : Excludes bitumen chip seal

Table 6: T44 Single Lane SHPF NiuBridge Attributes Table

Span (m)	Section	Location	Module Length (m)	Module Width (m)	Module Depth (mm)	Deck Thickness (mm)	Approximate Module Weight ⁴ (tonne)
20	Approach	Outside	5	1.5	1389	135	2.6
20	Approach	Inside	5	1.2	1389	135	2.4
20	Centre	Outside	10	1.5	1389	135	5.2
20	Centre	Outside	10	1.2	1389	135	4.8
22	Approach	Outside	5.5	1.5	1389	135	2.9
22	Approach	Inside	5.5	1.2	1389	135	2.6
22	Centre	Outside	11	1.5	1389	135	5.7
22	Centre	Outside	11	1.2	1389	135	5.3
24	Approach	Outside	6	1.5	1389	135	3.1
24	Approach	Inside	6	1.2	1389	135	2.9
24	Centre	Outside	12	1.5	1389	135	6.2
24	Centre	Outside	12	1.2	1389	135	5.8

Note 4 : Excludes bitumen chip seal

Installation

SHPF NiuBridge system is either installed on an existing timber or concrete substructure, or on a new substructure. The typical installation process is as follows: -

- Ensure substructure is sound and suitable to accommodate the NiuBridge modules.
- Organise a laydown area of sufficient size adjacent to the bridge site for the purposes of pre-assemble approach and centre sections of each module.
- Pre-assemble centre and approach sections of each module in accordance with the SHPF NiuBridge assembly guide.
- Place elastomeric pads (if specified) on headstocks, corbels or abutments.
- Place the downstream (or upstream) SHPF module on the headstocks and/or abutments.
- Secure downstream (or upstream) module to the abutment/headstock with the specified fastening system.
- Place adjacent module(s) on the headstocks and/or abutments ensuring it is butted up against the previously placed modules.

SHPF Modular (cont)

- Glue and screw all module joining plate layers ensuring a tight seamless join between the modules (see detailed installation guide).
- Secure all modules to the abutment/headstock with the specific fastening system.
- Install additional barriers and/or pedestrian roadside fencing if required.
- Install (or patch if pre-applied) deck wearing surface.

To ensure correct installation of all products we recommend the following instructions be strictly adhered to:

Design:

- Supporting structure needs to be sound prior to installation of NiuBridge
- NiuBridge needs to be fixed at each end of each girder to the supporting structure as per specific project specifications. The recommended minimum requirement is 1 x M24 bolt per end per girder with a 100x100x16mm washer, however refer to individual project documentation.
- Ensure NiuBridge modules are evenly supported by the sub-structure with elastomeric bearing pads between the sub-structure and NiuBridge modules.

Corrosion:

- The minimum corrosion protection for fasteners shall be a heavy hot dipped galvanised coating. However, in coastal or in environments where there will be prolonged periods of elevated moisture content (> 18%) it is recommended 316 stainless steel fasteners be used.
- It is also recommended that all fasteners be coated in grease before installation.

Camber:

- Camber can be built into the supporting structure. Additional camber can also be obtained by shaping the bitumen deck wearing surface.

NiuKerb

NiuKerb

NiuKerb is a prefinished Engineered Wood kerbing system that is ready to be bolted directly to a bridge deck, saving significant on-site installation time and cost.

The product is available as either a 6m long x 200mm wide x 216mm deep solid section, or with 600mm long x 100mm deep drainage sections pre-cut into the kerb (scuppers). Both products are available with either tapered approach, as detailed in Figure 5, or a square end.

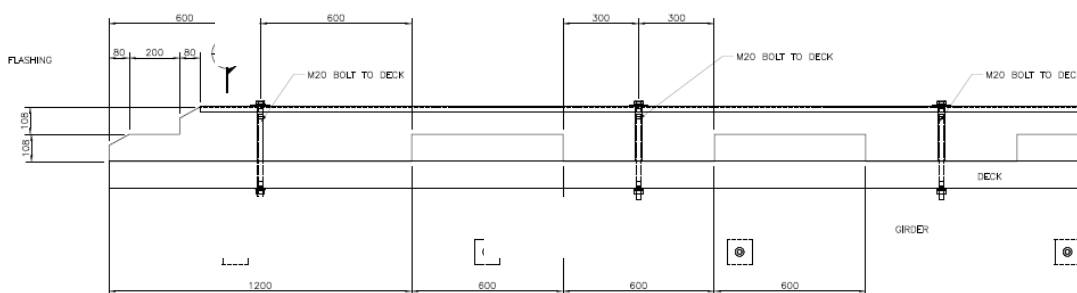


Figure 5: Kerbing scupper details

Delivery and Lifting

The sequencing and timing of delivery needs to be coordinated by the main contractor, in consultation with PNGFP's distributor. Issues that need to be considered are:

- Site access and timing.
- Traffic control.
- Transportation requirements.
- Crane size and reach.

It is the responsibility of the contractor installing NiuBridge to ensure that all lifting and installation is undertaken in accordance with a Safe Work Method Statement that complies with all relevant laws, safety regulations and codes of practices.



Pre-Ordering

In order to ensure a smooth and efficient installation of any of the NiuBridge systems, it is essential to undertake sufficient site planning. It is recommended a site meeting be conducted with representatives from the consulting engineer, installation contractor and PNGFP to discuss constraints, delegate responsibilities and develop a project schedule. The table below outlines key tasks to be discussed, together with suggested responsibility.

Stage	Task	Responsibility
Order Detail	Confirm details of the NiuBridge product and any options e.g. pre-installed deck wearing surface	Customer
Project Schedule	Project schedule to be agreed on, allowing sufficient time for manufacture and shipping	Customer/PNGFP
Site Preparation	Ensure site is accessible for cranes and delivery vehicles	Customer
Lifting Equipment	Organise suitable lifting equipment to unload delivery vehicles and for installation	Customer
Delivery	Coordinate delivery sequence with site requirements	Customer/PNGFP
Delivery	Site traffic control	Customer
Installation	Installation process	Customer

Safety

- Requirements and regulations must be observed at all times, including transportation, lifting, handling, storage and installation.
- Responsibility of contractor to provide Safe Work Method Statements that comply with all relevant laws and regulations.
- Must use nominated PPE as detailed in the MSDS statement.
- All lifting must be done by qualified operators and strictly in accordance with all relevant health and safety standards.
- Care must be taken during any lifting operation to prevent any damage e.g. spearing due to forklift tyres or edge damage due to lifting chains/straps.

Deck Wearing Surface

NiuDeck and NiuBridge require a durable deck wearing surface to be installed to ensure that the designed service life is achieved. In order to maximise the life of the deck wearing surface, the entire bridge structure must be tight to minimise movement under load.

The recommended deck wearing surfaces are either a multi-layered aggregate system or asphaltic concrete. The weight of this surface needs to be considered in the design load of the bridge.

Multi-layered aggregate system:

- Spray deck, ends and edges with a Cationic Rapid Set Emulsion (CRS) in accordance with the manufacturer's instructions.
- Apply and roll a 14mm chip layer to the surface with a non-vibrating roller.
- Spray a second coat of emulsion.
- Apply and roll a 7mm chip layer to the surface with a non-vibrating roller.
- Repeat layers for the desired thickness and durability.
- Remove excess loose chip from the final layer.

Asphaltic Concrete:

- Spray deck, ends and edges with a Cationic Rapid Set Emulsion (CRS) in accordance with the manufacturer's instructions.
- Apply and roll a 7mm chip layer to the surface with a non-vibrating roller.
- Apply a minimum 30mm thick layer of asphaltic concrete.
- Roll with a non-vibrating roller and allow to cure.



Product Performance Testing

Performance Testing:

NiuBridge has undergone comprehensive structural testing of full-sized specimens at the University of Technology Sydney. The test results confirm that NiuBridge meets and exceeds the ULS requirements of both T44 and S1600 loading conditions.



Quality & Product Certification

PNG Forest Products Engineered Wood Products are certified by the Engineered Wood Products Association of Australasia (EWPAA) and carry the EWPAA JAS-ANZ brand. The EWPAA operate an ISO 17065 Type 5 third party product certification scheme that is accredited by the peak accreditation body JAS-ANZ. This means that any product branded with the EWPAA JAS-ANZ brand has been manufactured under an accredited third party audited, process-based quality control program that ensures the product meets the intended design criteria.





The Engineered Wood Products Association of Australasia Ltd. certifies that

PNG Forest Products Ltd.

PO Box 88, BULOLO 423, Papua New Guinea

operates a quality control system that meets the requirements of the

EWPA Product Certification Scheme

EWPA certification involves regular inspections of the manufacturing process, independent testing of product compliance and periodic assessment of product performance in the marketplace.

Details of the certifications scheme are available at www.ewp.asn.au

Mill Number: 916 Issued: 01 Apr 2022

Certified Products

AS/NZS 2269.0:2012 Plywood Structural

Grade	Bond	Emission Class
F14	A Bond	Super E0

AS 6669:2016 Plywood Formwork

Grade	Bond	Emission Class
F17	A Bond	Super E0

AS/NZS 2270:2006 Plywood Interior

Bond	Emission Class
D Bond	E0

Special Products

Product
NuiDeck
NuiBridge

AS/NZS 2271:2004 Plywood Exterior

Bond	Emission Class
A Bond	Super E0

AS/NZS 2272:2006 Plywood Marine

Grade	Bond	Emission Class
Standard	A Bond	Super E0



Gavin Matthew, CEO EWPA



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To verify the current list of certifications held by this organisation, visit the web pages linked below.

www.jas-anz.org/our-directory/certified-organisations

<https://ewp.asn.au/members>



The Engineered Wood Products Association of Australasia Ltd.
certifies that

PNG Forest Products Ltd.

PO Box 88, BULOLO 423, Papua New Guinea

operates a Chain of Custody Management system that meets the
requirements of the

PEFC ST 2002:2020 Chain of Custody of Forest Based Products

PEFC ST 2001 -2020 PEFC Trademark Rules

Certificate Number: EWPA-PEFC-COC-916

Certificate Type: Individual

Chain of Custody Method: Volume Credit

Scope of Certification

Wooden Furniture	Treated Plywood
Treated and Untreated Pine Timber	Timber Bridge Components
Rough Sawn Hardwood	Poles
Plywood Noise Barriers	Plywood Cladding
Plywood	Overlaid Plywood
Dressed Hardwood	

Sites covered by this certificate

PNGFP - Bulolo (Head Office) : Huxley St, Bulolo, Papua New Guinea



Gavin Matthew, CEO EWPA



Issue Date: 07 Feb 2023

Expiry Date: 22 Dec 2023

Last Recertification Date: 22 Dec 2018

Initial Certification Date: 22 Dec 2015

The contents of this certificate are valid as of the date of issue. This certificate must not be reproduced except in full.
To verify the currency of this certificate, visit the web pages linked below.

<https://www.pefc.org>

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Construction Manual

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