TECHNICAL MANUAL
NATURION Non-combustible Natural Finish Panel

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1.1 About This Manual:

This manual has been developed to effectively assist fabricators and contractors to work with NATURION. Due to the uncontrollable conditions onsite and different methods of job scope, as well as the variable skills and judgment of installers and the quality of equipment, tools, etc, the suggestions and recommendations contained in this manual are provided without warranty. The information and recommendations herein are believed to be correct at time of publishing.

BLUECHIP reserves the right to revise the contents of this manual without prior notice. Any construction or use of the product must be in accordance with all local zoning and/or building codes and in accordance with the current NCC at the time of use. Except as contained in a written warranty certificate, the supplier does not provide any other warranty, either express or implied, and shall not be liable for any damages, including consequential damages.

1.2 Company Background:

Founded in 2003 by five brothers, BLUECHIP has grown every year since to become one of Australia's leading suppliers of architectural building envelopes. BLUECHIP's product range covers the complete system from the structure out including all types of cladding materials, composite decking, sub-framing, insulation, waterproofing and fixings.

With offices in Sydney, Melbourne and Perth, BLUECHIP has supplied more than 3,000,000m2 of materials to Australian projects since 2003. Our commitment to innovation and ongoing investment in R&D ensures BLUECHIP will continue to lead the market with BCA/NCC compliant facade solutions in the years ahead.

For architects and consultants, BLUECHIP's wide range of different materials and 'complete-system' approach enables the creation of inspiring high-performance facades. For builders and contractors, BLUECHIP's large local stock, well established supply chains and genuine appreciation for our clients means you can trust us to deliver as promised every time.

1.3 Company Details:

Company: Blue Chip Group Pty Ltd
ABN: 98 162 282 064
Head Office: 16 Ashby Close, Forrestfield WA 6058
Phone: 1300 945 123
Email: sales@bluechipgroup.net.au

1.4 Product Description:

Non-Combustible Natural-Finish Panel
NATURION non-combustible natural-finish panel is a revolutionary and innovative new facade material developed with architects and designers in mind. Due to Australia's strict fire compliance standards, it has become increasingly difficult to use natural timber cladding panels whilst meeting non-combustibility requirements. NATURION solves this problem by providing the rich natural warmth of timber, stone and rusted metal panels while at the same time being light-weight, highly durable, prefinished and most importantly Deemed-to-Satisfy non-combustible in accordance with NCC 2022, Clause C2D10(6)(d).

Non-Combustible
Unlike almost all other timber looking panels such as plywood and high-pressure laminate, NATURION natural-finish panels are Deemed-to-Satisfy non-combustible in accordance with NCC 2022, Clause C2D10(6)(d).

Easy To Cut & Install
NATURION non-combustible natural-finish panel is easily cut to size and installed onsite minimising lengthy lead times between site measure, production, and delivery of pre-finished panels.

Authentic Aesthetics
Available in an inspiring range of natural timber, stone and rusted metal finishes, NATURION offers beautiful natural aesthetics without compromising on durability, low maintenance or fire compliance.

High Durability
NATURION non-combustible natural-finish panel is a highly durable material offering exceptional impact, abrasion and graffiti resistance and making it ideal for both public and private sector projects.

Environmentally Friendly
Manufactured in Europe to strict environmental standards, NATURION has an A1+ classification for volatile substance emissions and is made of organic natural materials for long-term sustainability.

15 Year Warranty
With a factory applied impervious matt-finish, NATURION provides outstanding resistance to UV radiation, extreme temperatures, fungi, mould, staining etc and it is backed up with a 15yr warranty.

Maintenance Free
NATURION non-combustible natural-finish panel is a truly maintenance free material with no re-sealing, painting or ongoing maintenance ever required during install or anytime thereafter.

Proprietary System
NATURION non-combustible natural-finish panel is installed on a proprietary ventilated sub-frame facade system using either visible colour-matched fasteners or a concealed secret-fix system.

1.5 More Information:
https://www.bluechipgroup.net.au/natural-cladding-perth/non-combustible-timber-panels.html

2.1 Product Composition

The NATURION non-combustible natural finish panel is a fibre reinforced cement material consisting of the following components:

- Portland concrete
- Mineral bonds (fillers)
- Natural organic reinforcing fibres
- Synthetic organic reinforcing fibres
- Water-based double layer of acrylic dispersion agent
- Additional UV treatment on the top side of the board
- Wax sealer on the underside of the board

2.2 Production Methodology

The NATURION panels using the Hatschek production method before they are placed in a high-pressure hydraulic press where they are pressed to extremely high pressure prior to being dried with air. The surface of the board is smooth and matt. All the boards are sanded on both sides before the top side of the boards are finished with a double layer of an acrylic dispersion agent and additionally treated with UV coating, so that the surface is resistant to scratches and dirt. This type of treatment makes the surface of the board durable, scratch-resistant and covers it with an anti-graffiti coat. The reverse side of the board is finished with wax sealer coating.

2.3 Acceptable Tolerances:

Panel Width: +/- 0.2%
Panel Length: +/- 0.2%
Thickness: +/- 2.0%
Squareness Long Edge: <1.0mm/m
Squareness Short Edge: <0.5mm/m

2.4 Technical Data – Physical Properties:

ITEM	TEST STANDARD	UNIT	RESULT
Thickness	Actual	mm	8.0
Panel Weight	Actual	Kg/m2	16.8
Material Density (Dry State)	Actual	Kg/m3	1,750
Standard Sheet Size & Weight			
▪ 3200 x 1200mm	Actual	m2	3.84
▪ Sheet Weight	Actual	Kg	64.5
Non-standard Sizes & Weight			
▪ 1600 x 600mm	Actual	m2	0.96
▪ Sheet Weight	Actual	Kg	16.13
▪ 3200 x 300mm	Actual	m2	0.96
▪ Sheet Weight	Actual	Kg	16.13
Bending Resistance	EN 12467	N/mm2	30
Modulus of Elasticity	EN 12467	N/mm2	12,000
Durability Classification	EN 12467	Category	A
Strength Classification	EN 12467	Class	5
Thermal Conductivity	ASTM C-518	W/mK	0.6
Thermal Expansion	Actual	mm/m/K	<0.01

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2.5 Technical Data – Performance Standards

Performance to AS 2908.2:

ITEM / TEST	STANDARD	RESULT
Dimensional and Geometrical Tolerances	AS 2908.2	Compliant
Bending Strength Classification	AS 2908.2	Category 5
Water Permeability Test	AS 2908.2	Compliant
Frost Resistance	AS 2908.2	Compliant
Warm Water Test	AS 2908.2	Compliant
Soak / Dry Test	AS 2908.2	Compliant
Heat / Rain Test	AS 2908.2	Compliant

3.1 Deemed-to Satisfy Non-combustible:

NATURION is deemed-to-satisfy non-combustible as per the requirements of Volume 1 of NCC 2019, clause C1.9(e)(iv) and NCC 2022, clause C2D10(6)(iv) making it compliant for use as external cladding or internal lining on any building of types A, B & C construction, classes 2-9. NATURION is also deemed-to-satisfy non-combustible as per the relevant clauses of NCC Volume 2 for use on any class 1 building.

3.2 Technical Data – Fire Performance:

| ITEM / TEST	STANDARD	UNIT	RESULT
Non-combustible (DTS)	NCC C1.9(e)(v)	NCC 2019	Pass
Non-combustible (DTS)	NCC C2D10(6)(e)	NCC 2022	Pass
Ignitability Index	AS 1530.3	AWTA	0
Spread of Flame Index	AS 1530.3	AWTA	0
Heat Evolved Index	AS 1530.3	AWTA	0
Smoke Developed Index	AS 1530.3	AWTA	2
Group Number	AS 5637	AWTA	1
Average Heat Release Rate	AS 3837	AWTA	30.3 kW/m2
Average Specific Extinction Area	AS 3837	AWTA	7.6 m2/Kg
Fire Reaction	EN 13501-1	Euro Class	A2-s1, d0

4.1 Coating Performance:

The natural grey NATURION fibre-reinforced cement material is prefinished with factory applied polymer-based paint containing nanocomponents for outstanding durability. Colour options are infinite with chosen colour being selected from standard colours plus over 2000 NCS and RAL colours. The NATURION panels have a smooth surface that is resistant to moss, mould and dirt with excellent anti-graffiti properties in most occurrences. The use of inorganic polymeric paints also provides excellent resistance to UV radiation and good colour retention and fade resistance in most environments.

It is recommended that the final selection of colours is based on physical samples as opposed to printed or online colour swatches. It is also possible to order special colours. As with most architecturally prefinished products, small colour differences may occur between batches, so it is recommended to submit one order for all the materials required for any given project. The colour tolerance is measured according to the CIELAB model and the acceptable colour deviations are as follows: $\Delta L^* = \}2,00$, $\Delta a^* = \}1,00$, $\Delta b^* = \}1,00$. The colour deviation may differ depending on the angle of light incidence and the angle of view.

5.1 Fabrication:

Both sawing and drilling of NATURION panels must take place in a dry environment. For decorative applications, filings and shavings must be removed immediately from the board with a soft microfibre cloth because if unremoved, they can leave permanent stains. During mechanical processing of the boards, a suitable dust-absorbing device should be used to ensure compliance with all local OH&S standards and regulations and suitable PPE should be used to ensure the safety of all relevant operators and bystanders.
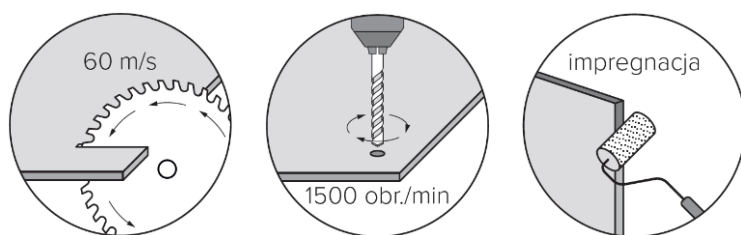
5.2 Cutting / Sawing:

When cutting NATURION panels, the board must be supported in such a way that it does not place any stress on the cut or either piece of material. The board must be supported, stable and clamped to ensure it does not vibrate. The board must be free from stress and vibration to ensure good cutting quality. Cutting blades should be diamond blades rotating at minimum 60m/s. After cutting, the sharp corner on either edge of all cuts should be sanded with high-grit sandpaper to provide a smooth arrised edge. As with any architectural prefinished fibre cement product, cutting the NATURION panels incorrectly may lead to the board delaminating on the edge which will be obvious when visually inspected by a trained technician and is not covered by the warranty. All cut edges should be sealed with LUKO sealant as below.

5.3 Drilling:

When drilling holes in the NATURION panels for the visible rivet or screw fixing installation methodology, the holes should be drilled from the front / face side of the panel to avoid chipping of the finished side and the panels should be completely supported around the drilled hole (e.g. with a wooden pad). Drill bits should be diamond tipped and running at minimum 1500 RPM.

5.4 Edge Sealing:

All cut edges of the NATURION panels should be completely sealed using LUKO sealant and specialist applicator kit supplied by Blue Chip Group Pty Ltd. Before applying the sealer, the edge of the panel should be dry and free from dust or other impurities. The panel itself and ambient temperature should be minimum 5 degrees Celsius. Remove excess sealer from the face of the panel with a micro-fibre cloth and only install the panels after the sealer has completely dried.
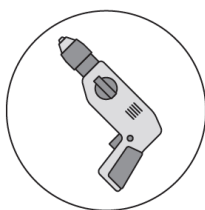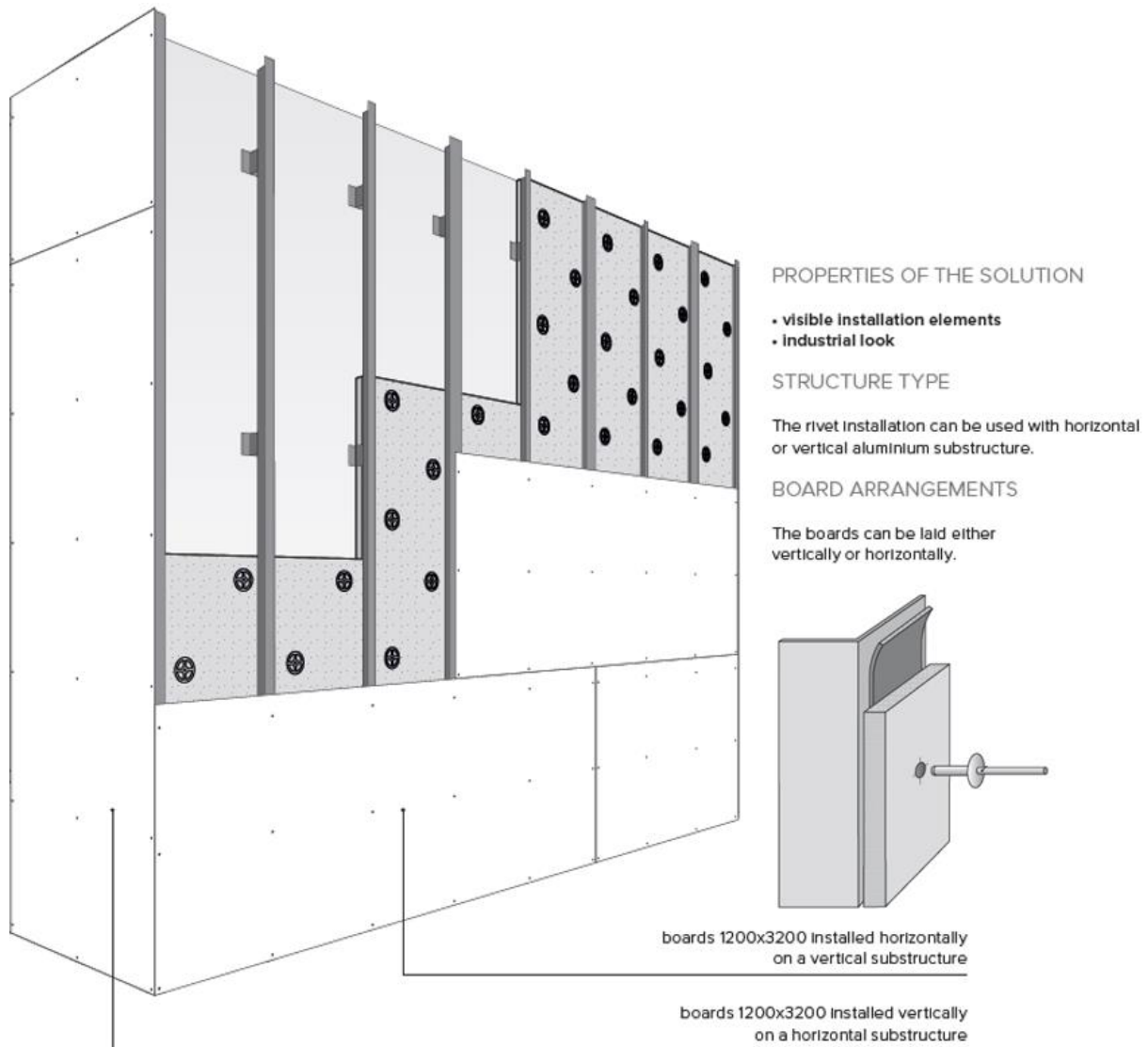
6.1 Installation:

Installation Details:
The panels shall be fabricated and installed in accordance with the most recent version of the NATURION Installation Details which are available online at www.bluechipgroup.net.au or by emailing sales@bluechipgroup.net.au or by calling **1300 945 123**. (Only PDF installation details are available online. For CAD/DWG installation details email or call as above).
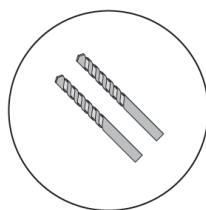
6.2 Standard Installation Method – Visible Mechanical Fixed & Floating Rivet System:
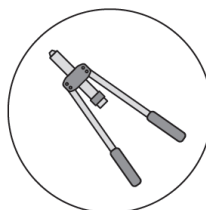
Standard NATURION installation methodology is with visible COLOURFIX colour-matched, fixed and floating rivets to a ventilated STUDTEK steel Façade System sub-frame over a AS 4200.1 compliant sarking which has been installed as per AS 4200.2 to satisfy the deemed-to-satisfy (DTS) weatherproofing requirements in accordance with NCC 2022, clause F3D3.
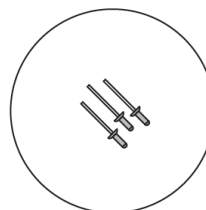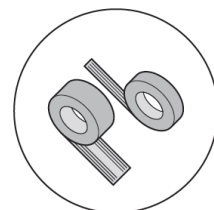

PROPERTIES OF THE SOLUTION

• visible installation elements
• industrial look

STRUCTURE TYPE

The rivet installation can be used with horizontal or vertical aluminium substructure.

BOARD ARRANGEMENTS

The boards can be laid either vertically or horizontally.

boards 1200x3200 installed horizontally on a vertical substructure

boards 1200x3200 installed vertically on a horizontal substructure

| DRILL	DIAMOND DRILL BITS	RIVETER	BLIND RIVETS	EPDM TAPES

6.3 Installation – Fixed & Floating Points:

To avoid structural stress on the NATURION panels, both fixed and floating fixing points should be used. Fixed points allow the installer to lock the board in a level position whilst the floating points enable expansion of the sub-frame and the panel itself without adding stress to the panel.

## 6.4 Typical Position for Fixed Points with Vertical Panel Layout:
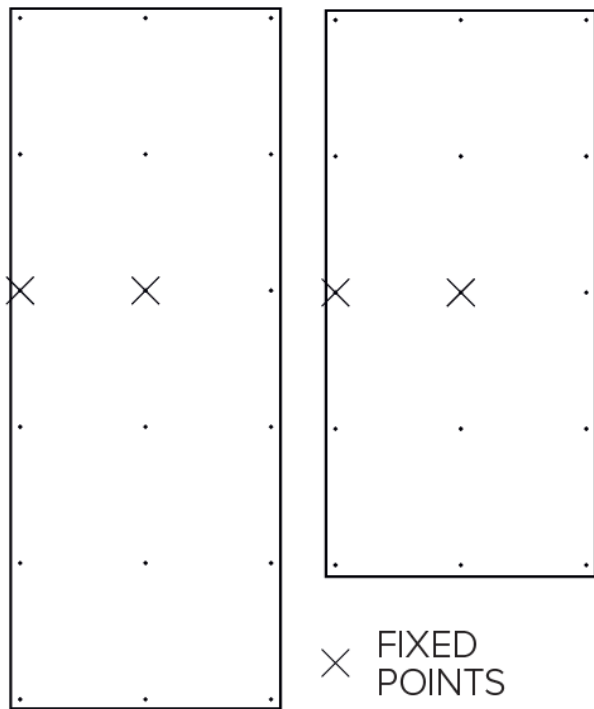
6.5 Typical Position for Fixed Points with Horizontal Panel Layout:

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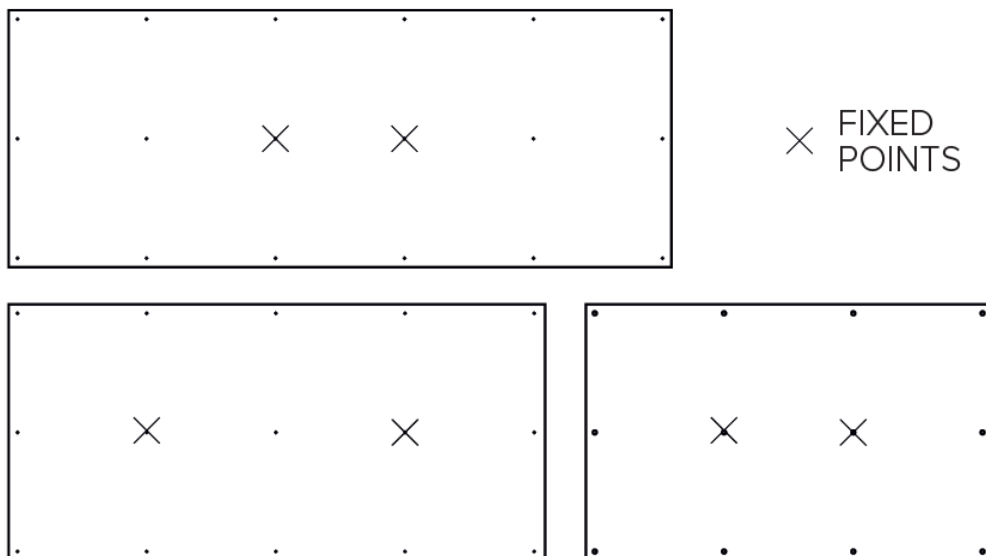
6.6 Fixed Point Locations for Horizontal Panel Layout with Inline Vertical Joints:

Under no circumstances shall a fixed point be installed in the corner of a panel. Doing so will void the product warranty and likely result in structural failure of the panel.
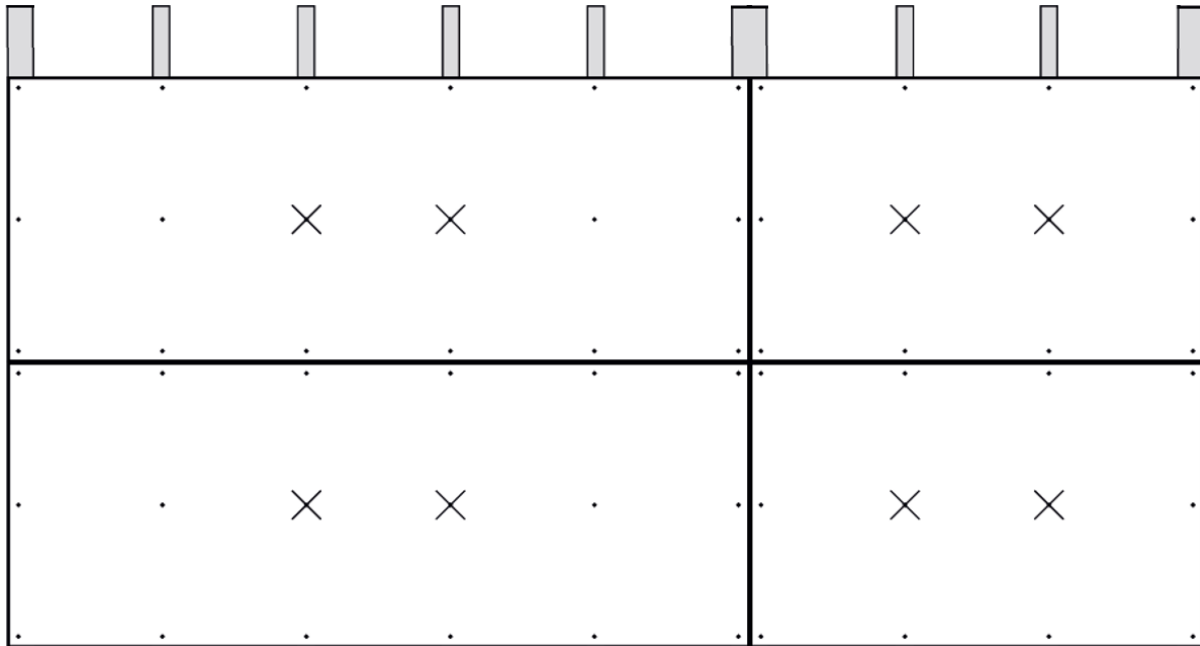
6.7 Fixed Point Locations for Horizontal Panel Layout with Offset Vertical Joints:

Under no circumstances shall a fixed point be installed in the corner of a panel. Doing so will void the product warranty and likely result in structural failure of the panel.
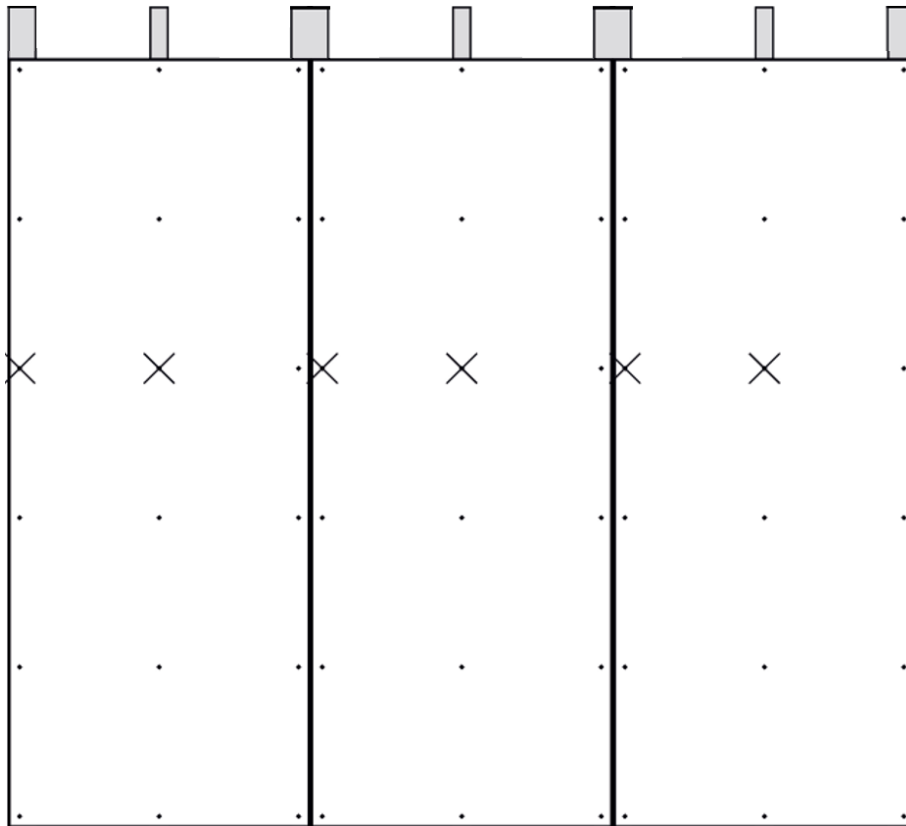
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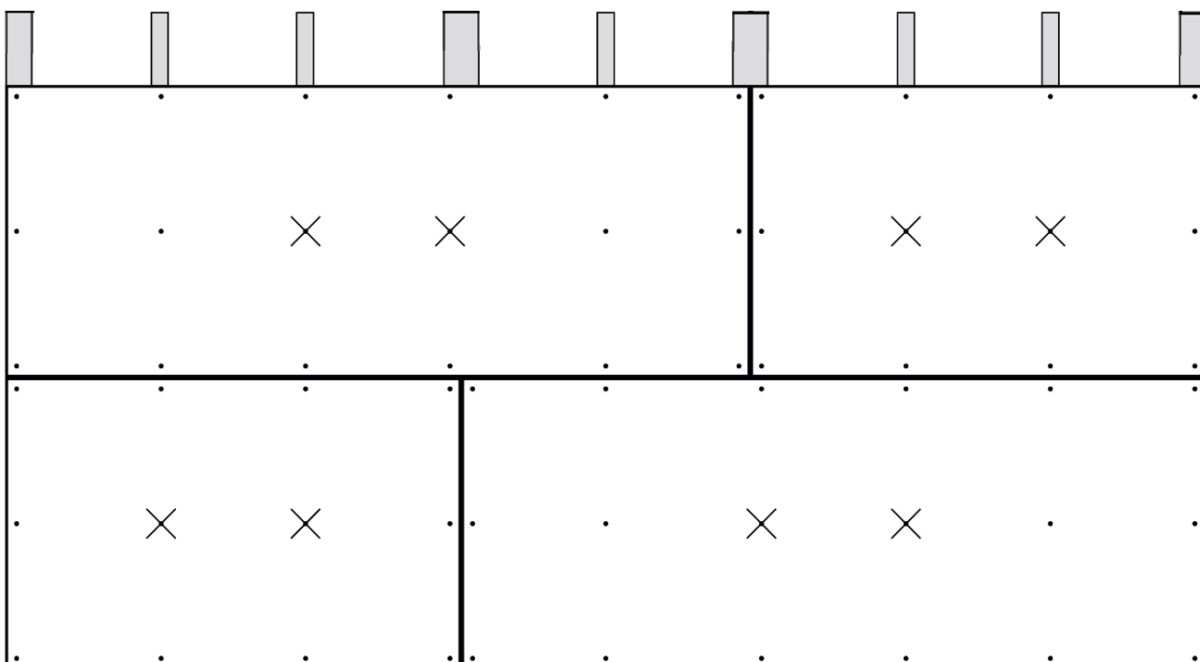
6.8 Fixed Point Locations for Vertical Panel Layout with Inline Vertical Joints:

Under no circumstances shall a fixed point be installed in the corner of a panel. Doing so will void the product warranty and likely result in structural failure of the panel.


6.9 Acceptable System Components:

Insulated Façade System - OPTIONAL:
For an optional insulated façade system use BICEP façade brackets and support profiles with IROCK non-combustible insulation to achieve an engineered exterior insulation zone.

Specialist Tools:
All fabrication and installation of NATURION shall be carried out using specialist tools supplied by Blue Chip Group Pty Ltd and used in strict accordance with manufacturer's recommendations.

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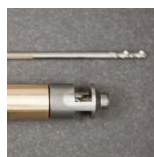
Sarking:
In climate zones 1-3, sarking shall be FIRESPAN DTS non-combustible vapour barrier and in climate zones 4-8, sarking shall be FIRESPAN Class 4 vapour permeable membrane, as per the requirements of NCC 2022 clause F8D3. Install and tape sarking in accordance with AS 4200.2 behind all cladding areas for DTS weatherproofing compliance as per NCC 2022 clause F3D3.

Sub-framing System:
The sub-framing system shall be STUDTEK steel top-hat Façade System attached to the main structure (or BICEP Façade System) in a manner to ensure all applied loadings to the cladding is transferred back to the main structure. Spacing of top hat members shall be determined according to applied loads and deflection limitations for any given project.

Rivets & Screws for Visible Mechanical Fixing:
Shall be proprietary COLOURFIX fixing systems supplied by Blue Chip Group Pty Ltd and used strictly in accordance with manufacturer's recommendations along with relevant specialist tools.
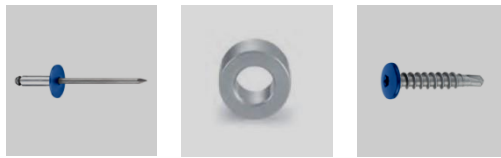
Rivets for Hidden Mechanical Fixing:
Shall be TUF-S hidden rivet system supplied by Blue Chip Group Pty Ltd, used in combination with a hanger and carrier rail system in accordance with manufacturer's recommendations.

**Adhesive Fixing System (Internal Only):**
Shall be the SIKATACK system supplied by Blue Chip Group Pty Ltd and used strictly in accordance with manufacturer's recommendations for preparation and application.

7.1 Transport and Storage

The boards are packed on pallets. During the transport they should be covered with a protective foil. The boards must be stored horizontally and laid on a flat surface. The boards must always be supported in such a way that they don`t bow or warp. The boards must be kept in a dry, ventilated place. If they are stored outdoors, they must always be protected from rain by an impregnated tarpaulin or foil. If the boards get wet during the packaging process, the whole packaging should be removed and placed so that drying is possible. It is recommended to let the boards to acclimatize in the space in which they are to be used. The board must be lifted from the stack by two persons and then moved vertically.
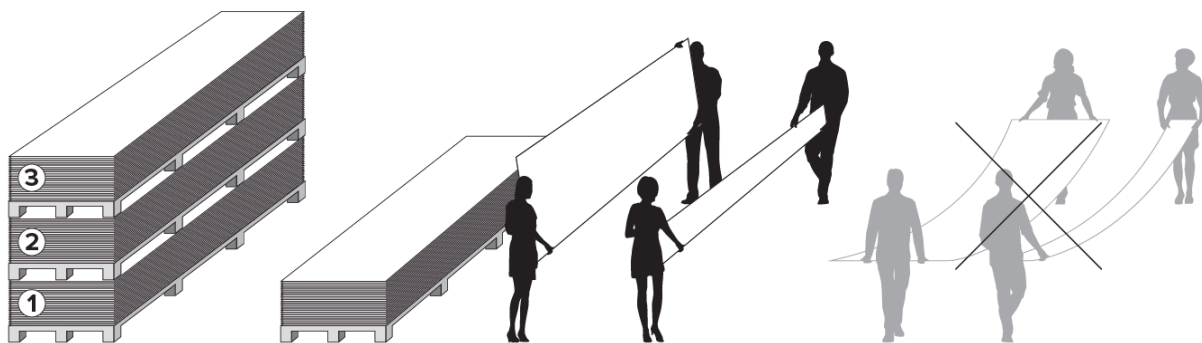
7.2 Health and Safety

Dust may be generated during processing of NATURION and may irritate the respiratory system and eyes. Prolonged exposure to inhalation of dust can lead to lung disease and increases the risk of lung cancer. Adequate dust removal or ventilation should be provided to ensure all relevant OH&S requirements are met in accordance with all local laws and standards. Suitable extraction equipment, PPE and work-place safety protocols should be employed to ensure the safety of everybody involved in the manual-handling, processing, or installation of the panels.

7.3 Maintenance and Cleaning

In case of dirt accumulation on the panels, wash with household detergent or soft soapy solution and rinse with clean water. The cladding shall be cleaned and maintained in accordance with any relevant standards as required to avoid any accumulation of surface contaminants and to maintain the desired performance and appearance.

7.4 Important Information:

The instructions in this brochure are for illustration purposes only and are not meant to replace a licensed professional. Any construction or use of the product must be in accordance with all local zoning and/or building codes. The consumer assumes all risks and liability associated with the construction or use of this product. The consumer or contractor should take all necessary steps to ensure the safety of everyone involved in the project, including, but not limited to, wearing the appropriate safety equipment. Except as contained in a written warranty, the supplier does not provide any other warranty, either express or implied, and shall not be liable for any damages, including consequential damages.