



Castellated Portfolio

FEBRUARY 2022





Disclaimer



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Material Features

Mechanical properties

Density (kg/m ³), average	ASTM D2395:2007a	1178 kg/m ³
Shore D Hardness, median	ASTM D2240:2000	68
Water Absorption after 2 hours	ASTM D1037:2006a, Section 23, Method A	+ 0.08%
Water Absorption after 24 hours		+ 0.47%
Nail Pull Resistance (N), average	ASTM D1037:2006a, Section 14	276 N
Maximum Tensile Strength (MPa), average	ASTM D638:2003	6.1 MPa
Modulus of Elasticity (MPa), average		1110 MPa
Elongation at Break (%), average		1.2
Flexural Strength (MPa), average	ASTM D6109:2005	23.6
Modulus of Elasticity (MPa), average		2251
Maximum Compressive Strength (MPa), average	ASTM D695:2002a	193
Coefficient of Thermal Expansion – α_1 (40 to 70°C), $\mu\text{m}/\text{m}^\circ\text{C}$	ASTM E831:2000	53.7
Coefficient of Thermal Expansion – α_1 (95 to 105°C), $\mu\text{m}/\text{m}^\circ\text{C}$		81.4
Vicat Softening Temperature °C	ASTM D1525:2009	84
Linear Coefficient of Thermal Expansion $\mu\text{m}/\text{m}^\circ\text{C}$	ASTM D6341:2016	27.7
Static Water Penetration NCC 2019 Amendment 1 FV1.1c)i)B) NCC 2019 Amendment 1V2.2.1 c)i)C) Vipac Engineers & Scientists Limited	Test Pressure FP1.4 & 4284 +455pa	Complies
Cyclic Water Penetration NCC 2019 Amendment 1 FV1.1c)i)B) NCC 2019 Amendment 1V2.2.1 c)i)C) Vipac Engineers & Scientists Limited	Test Pressure FP1.4 & 4284 208a-455Pa 303Pa – 606Pa 455Pa-910Pa	Complies

Material Features

Reaction to fire

Biowood Classique Group Rating	AS/NZS 3837:1998 In accordance with Specification C1.10 Section 4 of the BCA	Group 3
Average specific extinction area	AS/NZS 3837:1998 In accordance with Specification C1.10 Section 4 of the BCA	231 m ³ /kg
Biowood Premium Range BAL-29 Rated	25-kWm ² irradiance in accordance with with AS/NZS 3837:1998	Up to BAL-29 condition as specified in AS 3959:2009 Construction of Buildings in bushfire-prone area Appendix F.
TUV Fire Test	BS 476: Part 6:1997	10.7
Ignitability, flame propagation, release and smoke release	AS/NZS 1530.3:1999	Ignitability (0-20) = 13 heart Spread of Flame (0-10) = 0 Heat Evolved (0-10) = 1 Smoke Developed (0-10) = 7

Material Features

Chemical & biological features

Anti-Fungus Test	ASTM Designation: G21-15	0 (No growth)
Asbestos Test	TUV (NIOSH) 9002 Asbestos (bulk) by Polarized Light Microscopy No Asbestos fibers	No Asbestos fibers
Formaldehyde Emission	EN 717-2:1994 Determination of Formaldehyde Release – Part 2	0.03 mg/m ² /hour (Formaldehyde)
Formaldehyde Emission	ASTM D5116	<0.01 mg/m ² /hour (VOC)
AWTA Accelerated Weather Report	18-002698 ISO 105-A02 Where 5 = No Change 1 = Severe Change @ 1000 hours	4-5

Accelerated aging resistance test colour stability: Colour stability has been tested in compliance with accelerated weathering tests by AWTA Nata certified Test Laboratory (ISO 105/A02); the result of the test is expressed by assigning a numerical value to colour variation according to the international greyscale, which is a useful method to measure colors differences. PURPOSE OF THE TEST: Resistance to accelerated aging on Biowood profiles according to AWTA Nata certified (ISO 105/A02)

Test method: The equipment used is Standard for Accelerated Exposure of Automotive Exterior Materials Using a Controlled Irradiance Xenon-Arc Apparatus.



These values shown are indicative and not binding. Nata Certified test reports available upon request. The product is protected by a warranty in line with legal requirements: for more information see www.grmaustralia.com.au

Castellated Colours & Finishes

Classique Range: Profile WPO18035 , WPO18025A , WPO25028 & WPO30060

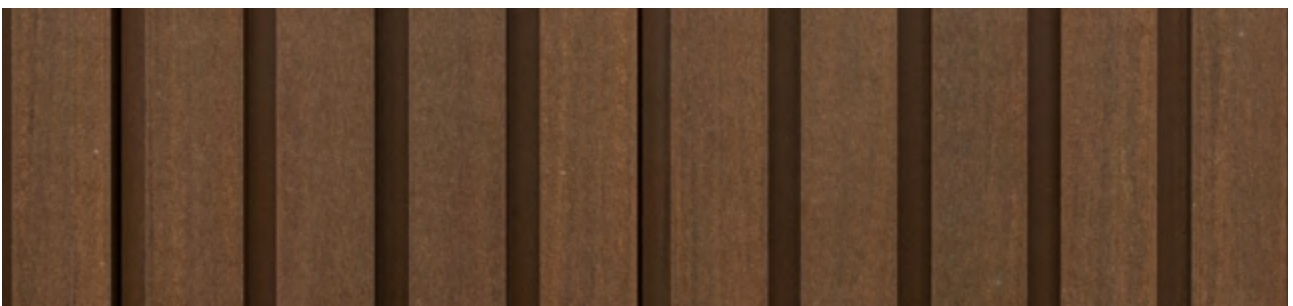
Brushed UV Sealed (Indoor & Outdoor Application)



Spotted Gum – Bioseal UV Seal Brown



Charred Wood – Bioseal UV Seal Monument



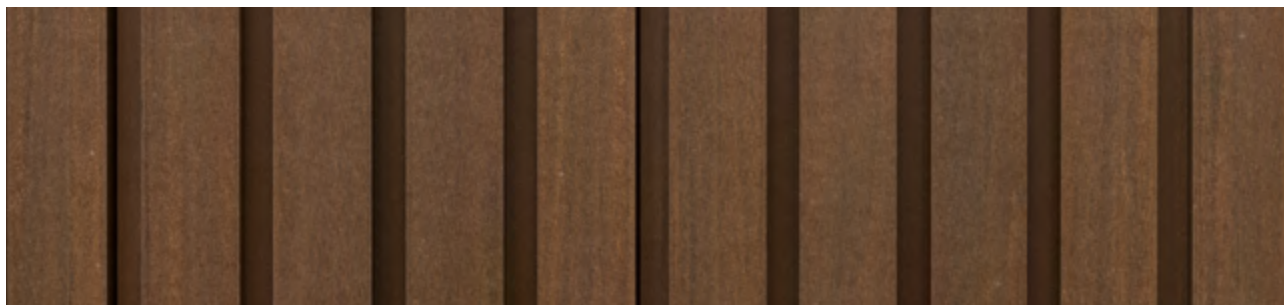
Western Red Cedar – Bioseal UV Seal Clear

Colors and textures shown are purely indicative. Please check our real samples for approval. Biowood is classified as natural product. Considering the presence of natural wood fibers, colors and grain variation is to be expected from batch to batch.

Castellated Colours & Finishes

Classique Range: Profile WPO18035 , WPO18025A , WPO25028 & WPO30060

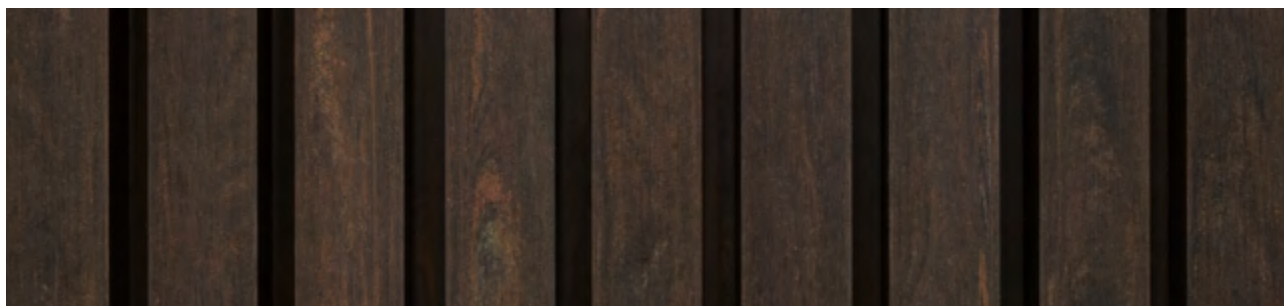
Brushed UV Sealed (Indoor & Outdoor Application)



Deep Walnut- Bioseal UV Seal Brown



Black Japan – Bioseal UV Seal Black



American Walnut – Bioseal UV Seal Clear

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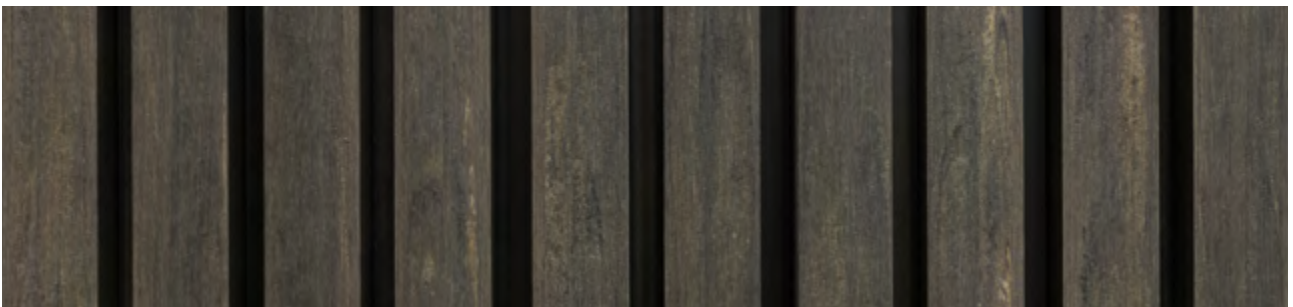
Castellated Colours & Finishes

Premium Range: Profile WPO18035, WPO18025A, WPO25028 & WPO30060

Brushed UV Sealed (Indoor & Outdoor Application)



Natural Oak – Bioseal UV Seal Clear



Weatherwood – Bioseal UV Seal Clear

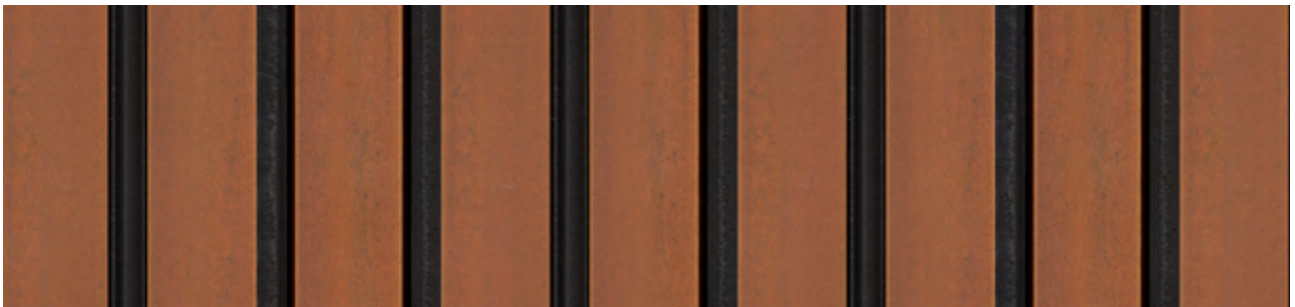


Lexicon White – Bioseal UV Seal

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Castellated Colours & Finishes

Two Tone (Black/White Rebates) Premium Range: Profile WPO18035 & WPO30060



Spotted Gum with Black Rebate – Bioseal UV Brown – WPO18035



Natural Oak with White Rebate – Bioseal UV Seal Clear – WPO18035



Natural Oak with Black Rebate – Bioseal UV Seal Clear – WPO30060

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Castellated Profiles



Biowood Castellated Board
WPO18035

180 x 35 x 5850 mm
180mm actual cover
Weight: 10.20 kg/m²



Biowood Castellated Board
WPO18025A

180 x 25 x 5850 mm
180mm actual cover
Weight: 9.00 kg/m²



Biowood Castellated Board
WPO25028

250 x 28 x 5850 mm
250mm actual cover
Weight 6.01 kg/m²



Biowood Castellated Board
WPO30060

300 x 50 x 5850 mm
300mm actual cover
Weight: 14.81 kg/m²



Application Samples

Biowood tilt door systems mount a garage door so that the door cladding is flush with the surrounding facade instead of set back.

Biowood is an architectural garage door and facade application that retains the natural look and feel of timber. Biowood is versatile and time-tested in Australian & New Zealand conditions. Biowood is low maintenance and Global Green Tag Certified.

Biowood is a great alternative for traditional timber and aluminium. Biowood is termite, flame, water, mould and mildew resistant. It has a nanotechnology seal that is non-stick and self-cleaning. This means you spend less time worrying about your garage door and facades and more time enjoying them.

Charred Wood Castellated
18035 Soffits



**Spotted Gum
Castellated 18035
Vertical Flush Mount
Tilt Garage Door**



**Weatherwood Castellated 18035
Horizontal Tilt Garage Door & Facades**



Natural Oak Castellated
18035 Vertical Flush Mount
Sectional Garage Door



Black Japan Castellated 18035
Vertical Tilt Garage Door



Natural Oak
Castellated 18035
Panels



Spotted Gum
Castellated Panels



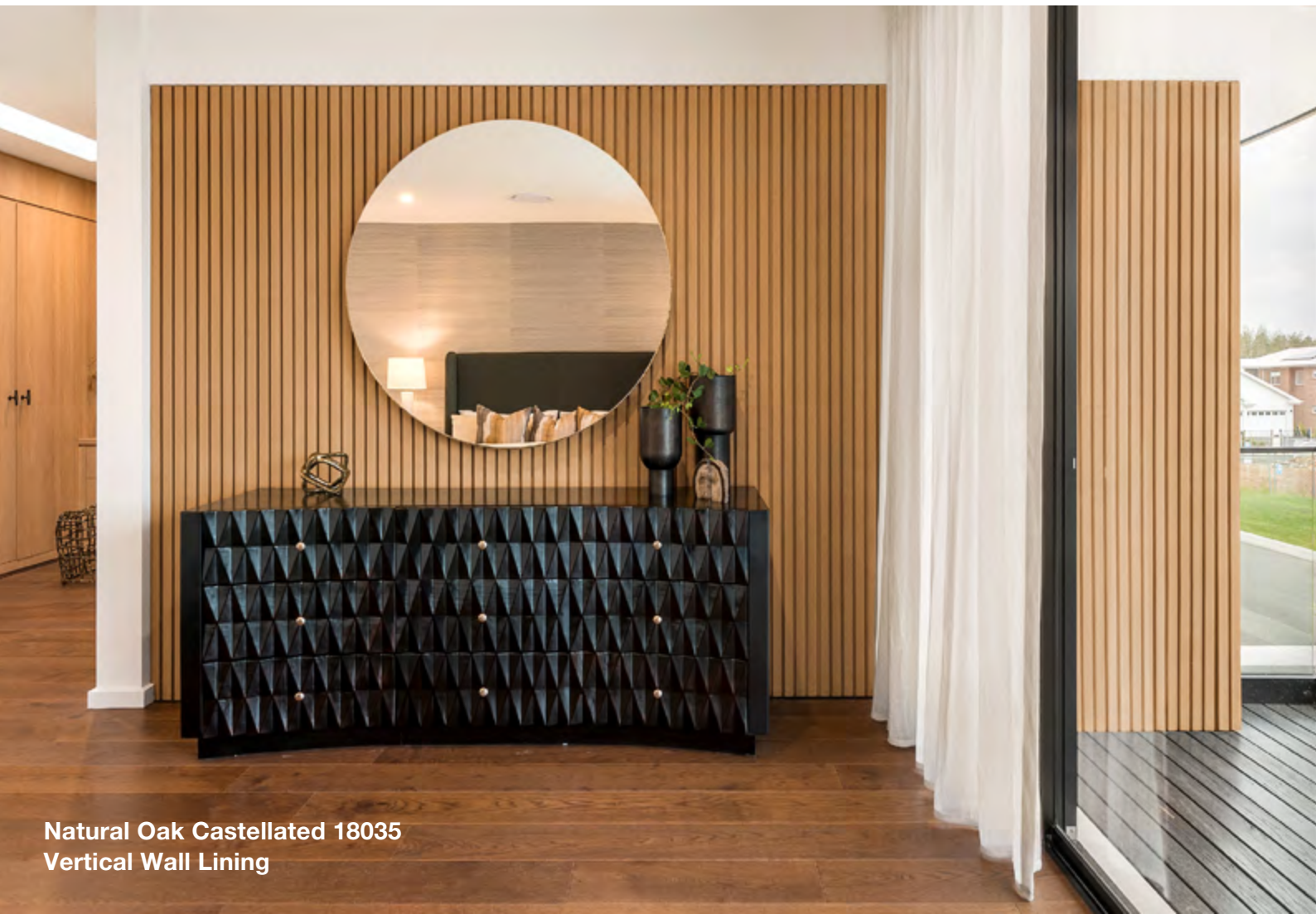
**Spotted Gum Two Tone with
Black Rebates Castellated
18035 Vertical Facades**



**Spotted Gum Castellated
18035 Soffits**



Spotted Gum Castellated
18035 Vertical Wall Lining



Natural Oak Castellated 18035
Vertical Wall Lining

Natural Oak Castellated
18035 Vertical Wall Lining



15 Year Limited Warranty

GRM (Aust.) Pty Ltd (“Biowood”) warrants its entire composite product, in its original manufactured state, to be free from manufacturer’s defects subject to the term’s conditions and limitations.

GRM (Aust.) Pty Ltd (“Biowood”) warranty is for a period of 15 years, from the date of purchase of the Biowood products, warrants its products to be resistant to cracking, splitting, swelling or rotting, flaking or peeling, water and moisture and to termites and other vermin. Excluding any mechanical problem such as indentation, scratches and/or surface damage caused by lack of proper protection and/or maintenance, moisture problems, or abuse. Colour & gloss reduction is not considered surface wear. It is to be expected a 10% colour fading yearly due to normal wear and tear.

Biowood is a natural product, containing natural variations in colour, tone, and grain. GRM (Aust.) Pty Ltd (“Biowood”) cannot guarantee against natural variations in each plank, nor differences between sample and colour of the floor. The installer is responsible for inspecting each plank for colour, finish, size and other quality issues prior to installation. Should there be any defects noted prior to installation, GRM (Aust.) Pty Ltd (“Biowood”) will replace the defective planks. GRM (Aust.) Pty Ltd (“Biowood”) does not warrant installation, nor is it covered in claims.

GRM (Aust.) Pty Ltd (“Biowood”) warranty does not cover indentations, scratches, or damages cause by negligence, exposure to extreme heat, dryness or water saturation, accidents, abuse, misuse, indentations from heels or pets, stains as a result of chemical or industrial products, insufficient protection or improper alterations of the original manufactured product.

GRM (Aust.) Pty Ltd (“Biowood”) may provide recommendations on installation. GRM (Aust.) Pty Ltd (“Biowood”) does NOT warranty any of these recommendations or products, including but not limited to installation tools such as staple guns, installation instructions, finishes, and cleaners. Please consult the manufacturers of these products and or the installer for warranty information.

GRM (Aust.) Pty Ltd (“Biowood”) is not a shipping company and cannot warrant damage that may have occurred while in transit. It is the customer’s responsibility to inspect all material upon arrival. If any damage is found it must be documented on the original bill of lading and is the customer’s sole responsibility to seek compensation from the shipping company. Each customer has the right to arrange their own shipping.

The warranty is given under normal environmental conditions, for which the products are designed, without the harm of external elements and chemical corrosion, through misuse and or improper storage, handling, application, finishing and or poor maintenance; alterations to the structure supporting the Biowood products, after the original installation of the products; act of terrorism or war; natural disaster events, such as hurricanes, tornados, hail, earthquakes, floods, fire or other similar causes beyond the control of Biowood.

There are no express or implied warranties except as stated herein and under the current Australian federal and state legislation, and there are no implied warranties of the merchantability and fitness for a particular purpose and no representative has the authority to make any representations other than those stated herein.

The products must be installed, coated, and maintained in accordance with the Biowood current and relevant specifications, instructions in strict compliance with the current provision of the BCA, regulations, and standards, current at the time of installation.

The coating/varnish, fasteners and fixings must be of appropriate materials and used in accordance with Biowood specifications.

That care of the Biowood product is maintained as per maintenance instructions provided by Biowood.

Biowood shall under no circumstances be liable for incidental consequential damages, including but not limited to injury to any person or damages to the building or the contents of the building, including any such damages relating to the presence of damp, mould, or mildew.

This warranty shall not be applicable to damage, loss or consequential loss caused in whole or in part by and does not provide protection against any failure, defect or damage caused by situations and events beyond normal usage or exposure conditions, including but not limited to:

1. Natural disaster events, including but not limited to lightning, wind gusts more than the design wind speed for the building, hail or
2. similar natural disaster events.
3. vandalism, acts of war, or civil disturbances.
4. environmental fallout or overexposure to commercial and or industrial solvents, acids, caustic fluids, oils, waxes, greases,
5. absorbent clays, bleaches, plasticizers, or other harmful chemicals.

The products are not warranted against discoloration or other damage caused by air pollution, mildew, exposure to harmful chemicals or normal weathering from the elements, normal weathering is defined as exposure to sunlight and extremes of weather and atmosphere which will cause any colored surface to gradually fade, chalk, or accumulate dirt or stains.

The severity of any condition depends on the geographical location of the product, the cleanliness of the air in the area, and many other influences over which BioWood has no control; BioWood shall have sole discretion to determine, based on reasonable criteria, whether the product is suffering from normal weathering. If the product weathers to a degree determined by BioWood to be beyond normal, BioWood may provide replacement material, at its option, for the defective product.

BioWood also reserves the right to refund the amount paid by the original purchaser for the product material (but not including the cost of its initial installation & logistic cost)

15 Year Limited Warranty

How to get warranty service?

The claimant shall provide GRM with written notice & proof of purchase of any material product defect of any claim under this warranty within (30) days, after the defect would have become reasonably apparent. If the defect was reasonably apparent prior to installation, then the claim must be made prior to installation and if any such defective products are installed then this warranty is negated. Such notice shall be given by certified mail to Green Resources Material Australia Pty. Ltd.

Biowood may request additional information. After reviewing all information, Biowood will decide regarding the validity of such claim. If Biowood determines that Purchaser's claim is valid, Biowood will, at its option, either replace the defective Biowood Products or refund the portion of the purchase price paid by Purchaser for such defective Biowood Products (not including the cost of its initial installation & logistic cost).

If Biowood investigation of any claim under this warranty reveals that Biowood is not responsible under the terms of this warranty for the purchaser's claim, the purchaser shall promptly reimburse the investigation costs incurred by Biowood.

Exclusion of damages

Consequential loss shall mean the indirect or special loss and or damage arising from a breach of the purchase contract, tort (including negligence), under statute and or any other basis in law or equity including, but without limitation, the following:

- i. loss of profits;
- ii. loss of revenue;
- iii. loss of production;
- iv. loss or denial of opportunity;
- v. loss of access to markets;
- vi. loss of goodwill;
- vii. loss of business reputation or future reputation or publicity;
- viii. damage to credit rating;
- ix. and or loss of use;
- x. or any similar loss whether in the reasonable contemplation of the parties at the time of the execution of the purchase.

Effective law

This warranty is subject to the laws of Australia & New Zealand. This warranty gives you specific legal rights, and you may also have other rights, which vary from state to state.

Nothing in this warranty limits or restricts, or is intended to derogate from, any right or remedy which the purchaser or ultimate user of the product may have pursuant to Australian state and/or Australian Federal Consumer Protection Legislation, New Zealand Sale of Goods Act, Consumer Guarantees Act, Fair Trading Act or any other relevant and applicable New Zealand legislation.

**Black Japan Castellated 18035
Vertical Wall Lining**





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