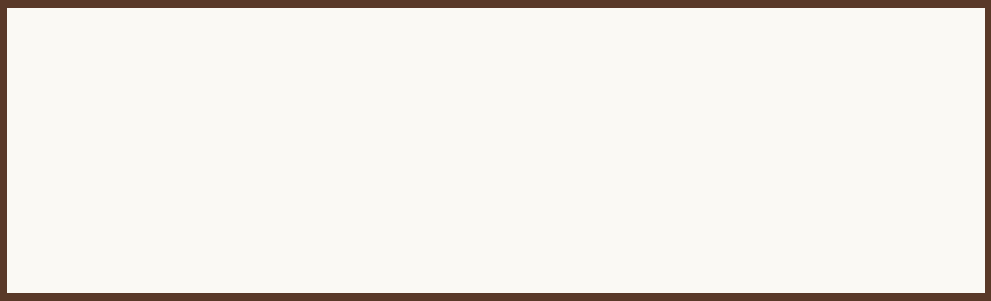
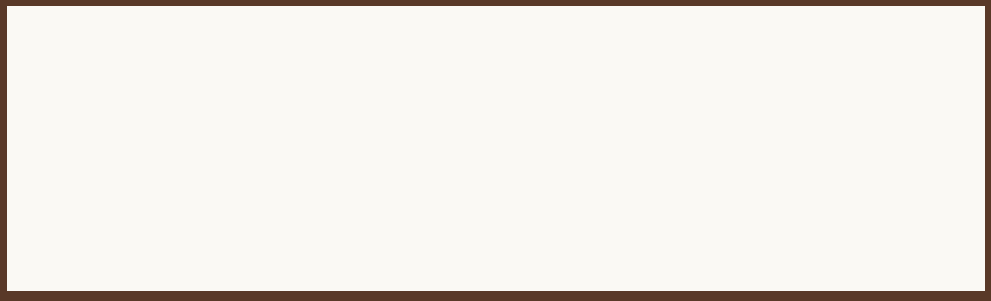
Forté

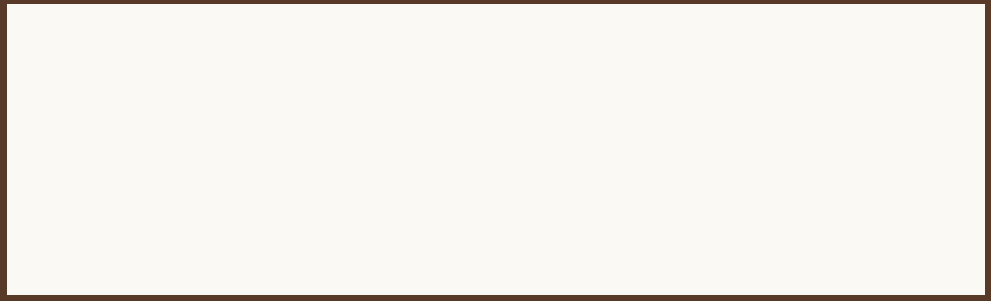
DESIGN GUIDE

Millboard Exterior Decking System

FOR USE WITH MILLBOARD MINERAL BOARD DECKING







ISSUE 2026.Q1

CONTENTS

PRODUCT OVERVIEW

Millboard is a high-performance decking solution designed to replicate the appearance of natural timber while offering enhanced durability. This section introduces the board composition, available profiles, compatible fixings and touch-up coatings to support accurate specification and detailing.

1.1 COMPOSITION

Millboard decking blends the authentic character of natural timber with the performance of innovative material technology, offering a surface that is both refined and resilient.

Each board is hand-moulded from carefully selected oak, capturing the intricate grain, knots and texture of real timber. This process ensures a unique, organic appearance that enhances the natural variation of the finished deck.

Beneath the surface, the board's core is made from a blend of natural minerals and polymer resin, reinforced with long fibres for added strength, dimensional stability and resistance to moisture. This construction allows Millboard to perform exceptionally well in outdoor settings without warping, rotting or absorbing water.

The surface layer is formed from Lastane, a durable elastomer that delivers excellent slip resistance and a comfortable underfoot feel. A two-part UV-stable coating is applied to protect against fading and wear, preserving the board's appearance with minimal maintenance over time.

1.2 DECKING BOARDS

	Enhanced Grain Decking Boards		Weathered Oak Decking Board
			
DIMENSIONS	32 x 176 x 3600mm	32 x 126 x 3600mm	32 x 200 x 3600mm
APPLICATION	For use as a decking board	For use as a decking board	For use as a decking board
WEIGHT	11.8kg	8.5kg	12.5kg
BOARDS PER M²	1.54	2.14	1.36
COLOURS	Antique Oak ME-A Ashwood ME-AW Brushed Basalt ME-BB Burnt Cedar ME-BC Coppered Oak ME-C Ebony Grey ME-EG Golden Oak ME-G Limed Oak ME-L Smoked Oak ME-S	Antique Oak MSB-A Ashwood MSB-AW Brushed Basalt MSB-BB Burnt Cedar MSB-BC Coppered Oak MSB-C Ebony Grey MSB-EG Golden Oak MSB-G Limed Oak MSB-L Smoked Oak MSB-S	Driftwood MW-D Vintage MW-V Embered MW-E
FIXINGS	Durafix® 60mm screws	Durafix® 60mm screws	Durafix® 60mm screws

1.3 EDGING BOARDS

	Fascia Board	Bullnose Decking Board
		
DIMENSIONS	146 x 16 x 3600mm	150 x 32 x 3600mm
APPLICATION	For use below decking board to conceal the exposed edges of the subframe	For use as an edging board
WEIGHT	8.5kg	8.3kg
GRAIN	Enhanced Grain	Enhanced Grain
COLOURS	Antique Oak MF-A Ashwood MF-AW Brushed Basalt MF-BB Driftwood Oak MF-D Golden Oak MF-G Limed Oak MF-L Smoked Oak MF-S	Antique Oak MB-A Ashwood MB-AW Driftwood Oak MB-D Brushed Basalt MB-BB Coppered Oak MB-C Ebony Grey MB-EG Golden Oak MB-G Limed Oak MB-L Smoked Oak MB-S
FIXINGS	Durafix® 35mm screws	Durafix® 60mm screws

1.4 FIXINGS

	Durafix® Decking Fixings 35mm	Durafix® Decking Fixings 45mm	Durafix® Decking Fixings 60mm
			
DIMENSIONS	4.5 x 35mm	4.5 x 45mm	4.5 x 60mm
QUANTITY	Box of 100	Box of 250	Box of 250
FIXINGS	A2 stainless steel fixings used to fix fascia boards	A2 stainless steel fixings used to fix decking to aluminium subframe batten	A2 stainless steel fixings used to fix decking boards to timber subframe

1.5 TOUCH-UP COATINGS

Cut ends of Millboard decking can be colour matched on site using a specially formulated touch-up coating for a more consistent and refined finish.

When Millboard boards are cut to length, the exposed ends may reveal a lighter core material. Although this has no effect on the board's durability or performance, applying touch-up coating can improve the visual continuity of the installation—particularly in high-visibility areas or where the ends are exposed.

Millboard is inert in composition and does not require end-grain sealing for protection. The use of touch-up coating is purely aesthetic and optional, but recommended where a uniform appearance is desired. The coating is available in colours matched to the standard Millboard ranges for ease of application on site.

SMOKED OAK

ANTIQUE OAK

BURNT CEDAR

GOLDEN OAK

LIMED OAK

EBONY GREY

VINTAGE OAK

ASHWOOD

COPPERED OAK

BRUSHED BASALT

SCOPE & LIMITATIONS OF USE

Understanding where and how Millboard can be used is essential to ensure long-term performance and compliance. This section outlines the recommended applications, key limitations and relevant standards to help guide appropriate design decisions.

2.1 SCOPE & LIMITATIONS OF USE

The following guidance outlines where the Forté Millboard Decking System can be used, and any limitations or conditions that apply to ensure safe, compliant and long-lasting installations.

SCOPE	LIMITATIONS
Location In all exposure zones as defined in NZS 3604:2011.	— Where microclimatic conditions apply, as defined in NZS 3604:2011, contact Millboard for technical advice. — Fixings must be in accordance with section 4 of NZS 3604:2011. In exposure zone D, stainless steel fixings must be used.
Building On timber framing that complies with the NZ Building Code or with the Outdure Qwickbuild System. As an external decking board.	— The framing must have a minimum design load of 2kPa or be subject to specific engineering design requirements. — Joist spacing must be at maximum of 400mm centres for residential applications or 300mm centres for commercial applications. — Durafix® fixings must be used (4.5mm x 60mm dimension) to fasten the Millboard Decking boards to a timber subframe. — Durafix® 4.5mm x 45mm fixings can be used to fasten the Millboard Decking boards to a plastic subframe.
Slip Resistance FOR USE AS AN EXTERNAL PEDESTRIAN SURFACE, INCLUDING — Flat decking areas — Access routes — Ramps and sloping surfaces Where surfaces are expected to be exposed to water or wet conditions, in accordance with the performance requirements of New Zealand Building Code Clause D1.	— Acceptable in dry conditions; low slip resistance when wet (F rating). Additional slip-resistant measures (e.g., inserts, coatings, or nosing systems) are required for ramps, sloping surfaces, or areas exposed to frequent wetting to meet NZBC Clause D1. For specific commercial solutions where a G rating is required, contact Forté for technical assistance system solution. — Slip resistance applies to the as-installed surface only and may be reduced by contamination (water, algae, debris) or surface wear; regular cleaning and maintenance are required. — Project-specific assessment is required for high-risk locations, public access areas, or any conditions where wetting or microclimatic effects may compromise slip resistance, to demonstrate compliance with NZBC Clause D1. Please contact Forté for technical support.

2.2 COMPLIANCE

NZ BUILDING CODE CLAUSE	COMPLIANCE STATEMENT	DEMONSTRATED BY
B1 STRUCTURE B1.3.1, B1.3.2, B1.3.3 (a, b, c, e, f, j, m, & q)	Alternative Solution	— Tested in accordance with ASTM D7032-17 for creep-recovery and mechanical fastener holding tests [element, 17/10/22). — Tested in accordance with ASTM D7032-17, section 4.4.1 and 4.4.2, and ASTM D6109 for bending stiffness/flexural rigidity (product of modulus of rupture) and bending strength/ moment capacity (product of modulus of elasticity) [element, 17/10/22]. — Meets a minimum value of 96,848 in2-lbf for flexural rigidity and 1,834 in2-lbf for moment capacity [element, 17/10/22].
B2 DURABILITY B1.3.1, B1.3.2, B1.3.3 (a, b, c, e, f, j, m, & q)	Alternative Solution	— Tested to ASTM D7032-17 for elevated temperature, moisture and freeze-thaw [element, 17/10/22]. — Tested for UV/accelerated ageing [Q-Lab, 11/11/22a, 11/11/22b]. — Composite material will not rot, warp or split as it is non-porous, not extruded and has no timber content. Composite material will not support algal growth as it has no protein content and has a 2K UV-resistant polyurethane coating.
D1 ACCESS ROUTES	Alternative Solution	— Tested in accordance with BS 7976-2:2002, cited in AS/NZS 4586:2004 D1.3.3 (d) for average slip measurements in wet and dry conditions. Classified as low slip potential [SATRA Technology Centre, 10/11/22 a,b,c,d, 25/3/20,19/03/20].
F2 HAZARDOUS BUILDING MATERIALS F3.2.1	Alternative Solution	— Manufactured material is inert — Use in accordance with supplier’s safety information

SPECIFYING SUBSTRATE

The choice of subframe plays a critical role in the success of any decking installation. This section presents the key considerations for using timber or aluminium substrates with Millboard, including structural requirements, compatibility and typical applications.

3.1 TIMBER SUBFRAMES

Correct joist spacing and fixings are essential to ensure the performance and durability of Millboard decking in both residential and commercial applications.

Residential Application (1.5kN/m2 uniform distributed load).

Joists must support boards at 400mm centres when boards are installed at 90° to the joists. If boards are installed at 45°, joists must be set at 300mm centres

Commercial Applications (4kN/m2 uniform distrubted load).

Joists must support boards at 300mm centres when boards are installed at 90° to the joists. If boards are installed at 45°, joists must be set at 240mm centres.

Working Specification for all Decking Boards

For all applications, there are two spacing options. We recommend using the Multi Spacer with a 5mm gap as it looks better aesthetically. The maximum unsupported overhang is 50mm, and each cut board must be supported by a minimum of three joists. Boards must be fixed with two Durafix® screws at every joist crossing. Three fixings are recommended at the ends of boards. The second spacing option is the Face Fixing method with a recommended gap of 4mm.

Flexible Edging and Fascia Boards

Millboard edging trims must be supported along their full length with an edge joist.

— The flexible square edging (50×33×2400mm) and fascia trim (146×16×3200mm) will bend to a 1.2m radius.

Fix boards and trims at 300mm intervals along their length while easing the profile around the bend.

Bullnose Edging Boards

The Bullnose board (150 x 32 x 3600mm) is a rigid product used for straight runs on edges of decks, steps and seating. The maximum overhang of the Bullnose board is 40mm from the front of the fascia.

— Both the standard decking boards (126/176/200 x 32 x 3600mm) and the thinner fascia board (146 x 16 x 3600mm) can be used as a fascia under this product.

Bullnose edging boards and trims are available in ten colours, which can be used to match the decking boards, provide contrast for visual interest or assist partially sighted persons, as may be required for public applications. For details on structures for curved deck subframes, refer to Figure 5: Creating Curved Corners.

3.2 QWICKBUILD ALUMINIUM SUBFRAME SYSTEM

Millboard decking can be installed over low-height areas using the QwickBuild aluminium subframe system, offering a versatile solution for complex or constrained sites.

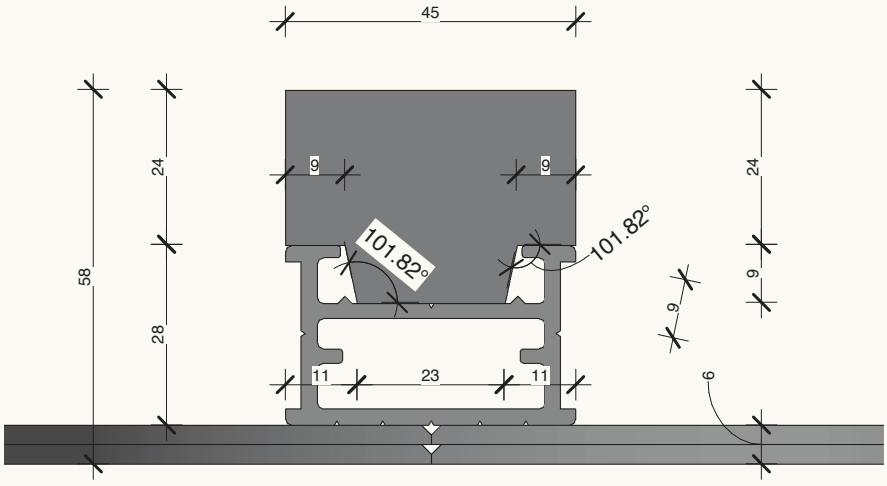
The QwickBuild aluminium subframe allows Millboard decking to be installed over a variety of surfaces, including waterproof membranes, concrete, pavers or natural ground. This makes it ideal for rooftop terraces, balconies or areas where traditional timber subframes are not practical.

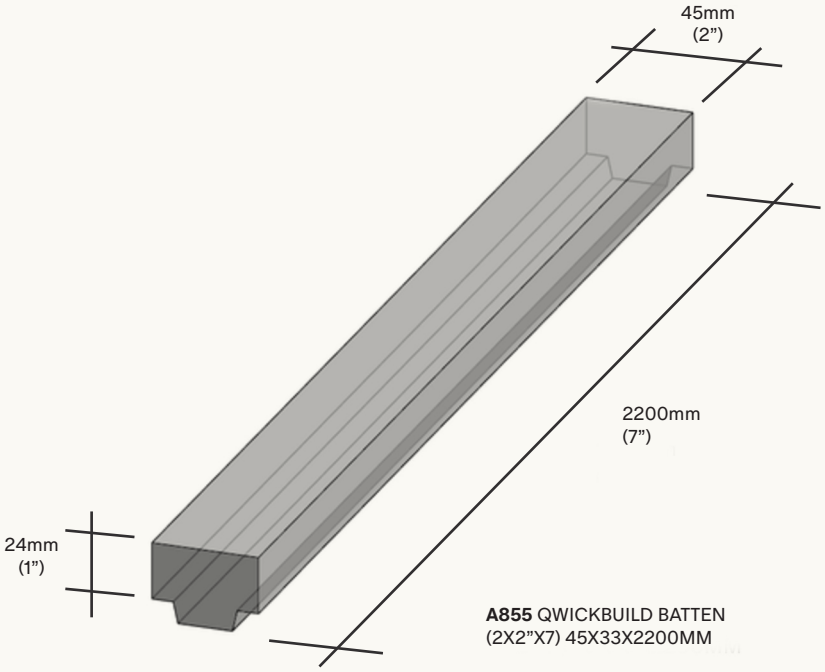
The system's integrated adaptor batten enables Millboard decking to be screw-fixed directly, enabling surface fixing without visible fastners for a discreet finish, while maintaining the mechanical security and aesthetic quality of the installation.

With a build-up as low as 90mm from membrane to finished deck level, QwickBuild offers a low-profile, high-performance solution without compromising appearance or durability.

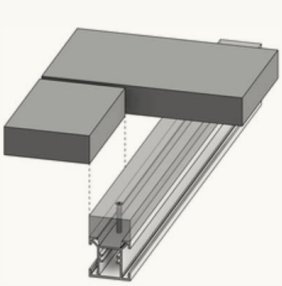
For more information about the Qwickbuild Subframe System, please visit the **Outdure website**

Please note: the Qwickbuild Batten adds 24mm to the overall subframe height.





A855 QWICKBUILD BATTEN
(2X2”X7) 45X33X2200MM



DESIGN CONSIDERATIONS

Successful deck design goes beyond material selection. This section provides guidance on integrating Millboard into architectural projects, including layout, board variation, fixing methods and specific applications such as ramps, stairs, pools, spas and curved features.

4.4 BOARD SETOUT

A well-considered board layout enhances the natural appearance of your deck, creating a more authentic timber look through variation in grain and pattern.

Millboard decking features six to eight unique grain patterns designed to replicate the natural variation found in real timber. To achieve a randomised, natural-looking finish, boards should be sorted into separate piles based on grain pattern before installation.

Installation Tips

During installation, pull boards from different piles to ensure a varied layout. Additionally, alternate the orientation of board end-cuts to reduce repetition and enhance the visual randomness of the surface.

4.2 COLOUR CHARACTERISTICS

Millboard decking is crafted to reflect the tonal depth and natural variation of real timber, giving each board a unique and authentic appearance.

Each board is hand-moulded from selected timber samples, then individually hand-coloured using multiple pigments. This process creates subtle tonal shifts across the surface, ensuring no two boards are exactly the same. The result is a layered, authentic finish that mirrors the way real timber weathers and varies in nature. This deliberate variance in tone and grain pattern is what gives Millboard its natural look.

Colour tone may vary from batch to batch

CUT-END COLOUR MATCHING

When boards are trimmed on-site, exposed ends can be treated with Millboard's matching touch-up coating for a consistent look. This is purely aesthetic—Millboard's unique composition is moisture-resistant and doesn't require end sealing for protection.

4.3 FIXING METHODS

Millboard decking can be installed using two fixing methods, however we recommend using the Side Fixing method as it provides a more refined aesthetic.

Choosing the appropriate fixing method is an important part of the deck design process. While both options provide secure installation and long-term performance, we recommend the Side Fixing method over Face or Surface Fixing as the Side Fixing method ensures the screws are concealed for better visual appeal. The selected method should be considered early to ensure compatibility with the subframe, board type and spacing requirements.

RECOMMENDED METHOD

SIDE FIXING TOOL – HIDDEN FIXING

The Side Fixing Tool method offers a concealed finish by driving screws through the side of each board at an angle. This approach eliminates visible fixings on the surface and creates a uniform 6mm spacing between boards. It is ideal where a clean, uninterrupted appearance is desired, particularly in premium residential or design-focused applications.

ALTERNATIVE METHOD

SURFACE FIXING – LOST HEAD SCREW

Durafix® screws provide a discreet surface-fixing solution. Designed specifically for Millboard, these 4.5mm head screws pass through the face of the board, with the Lastane surface layer gently closing over the fixing point. The result is a secure hold with only a minimal surface mark, making it a practical and efficient option for a wide range of applications.

Screw aligned above board surface prior to installation using Durafix® screw and driver bit.

Screw driven below surface with drill; Lastane layer begins to compress around the fixing.

Completed installation with no visible fixing point; the Lastane surface self-heals for a clean finish.


GIVENCHY

4.4 LIGHTING

Thoughtfully integrated lighting can elevate outdoor spaces, adding warmth, safety and ambiance that extends the use of your deck well into the evening.

Incorporating LED lighting into your decking design is an effective way to create atmosphere and improve visibility, particularly around steps and transitions. When planned early, lighting can be seamlessly integrated without compromising the finish or durability of the deck.

Application

LED strip lights can be recessed into Bullnose edging boards, casting a subtle downward glow beneath stair treads. This highlights architectural details while improving safety in low light.

LED spotlights or uplights can also be used to illuminate vertical surfaces or feature areas, adding drama and depth to the space.

A considered lighting plan brings both functional and aesthetic benefits, helping your deck feel like a natural extension of the home at any time of day.

Please note: the maximum allowable overhang from the front face of the fascia board is 40mm. Exceeding this may compromise structural integrity or create an uneven appearance.

LED SPOT OR UPLIGHTS

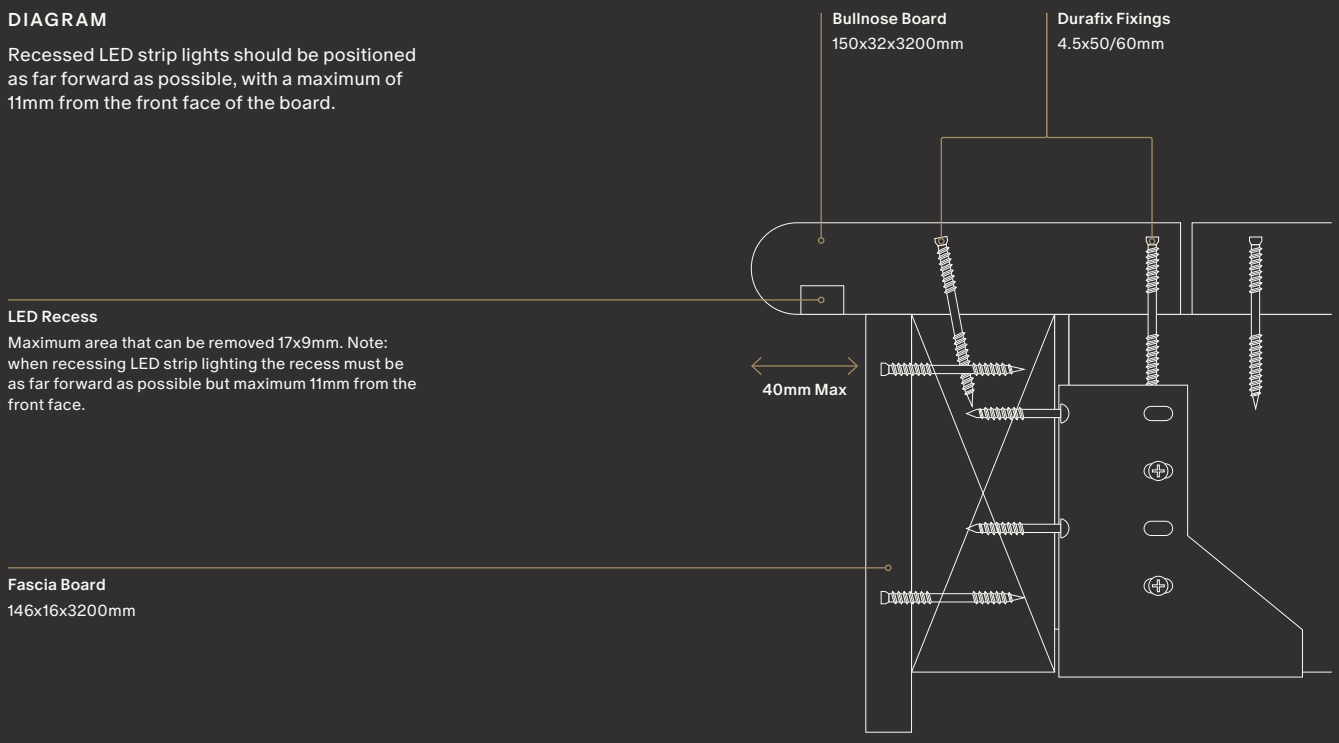
LED spotlights or uplights can be used to define spaces and illuminate walkways and stairs, or purely for aesthetic purposes.

RECESSED LED LIGHTING

With a maximum cantilever of 40mm, LED strip lighting can be neatly recessed into the underside of the board for a clean, subtle finish.

DIAGRAM

Recessed LED strip lights should be positioned as far forward as possible, with a maximum of 11mm from the front face of the board.



4.5 POOL EDGE DETAILING

Careful planning around pool edges ensures a durable, safe and cohesive finish that complements both residential and commercial outdoor spaces.

When designing a deck around a pool, it's important to consider how the decking will finish at the pool edge. This detail influences both the visual outcome and the long-term durability of the installation.

Millboard decking can be installed flush to the pool edge and continued down the vertical face, offering a clean and modern look ideal for residential applications. However, it is not intended for submerged use and should not sit below the waterline.

Commercial & High-Use Areas

In high-use settings such as hotel or public pools, a coping stone is recommended to form the pool edge. Coping creates a durable transition between the pool and deck, protecting both surfaces from constant exposure to water and foot traffic while maintaining a refined appearance.

Choosing the right edge detail enhances both the function and finish of your poolside environment.

4.6 SPA POOL DETAILING

Spa pools add luxury and relaxation to outdoor spaces, but must be factored into your deck design early to ensure structural integrity and safety.

Spas and hot tubs are heavy—especially when filled with water and in use—so it's essential to account for their weight from the outset. This includes calculating correct joist spacing, reinforcing the substructure, and potentially integrating concrete support pads or slabs. Proper planning ensures the deck can safely carry the load and provides lasting performance over time.

DECK MOUNTED

The spa sits fully on top of the finished deck surface. Subframe reinforcement is essential beneath the spa to support its weight.

FLUSH (LEVEL WITH DECKING)

The spa is installed at the same level as the deck. Where possible, a concrete pad should be used to support the spa, with the deck constructed around it.

RECESSED

The spa is set into the deck and supported by a concrete slab beneath, offering a seamless look and easier step-in access.

4.7 RAMP DETAILING

When designing ramps with decking for access or accessibility, selecting the right board is critical to ensure safety, usability and compliance with slip resistance standards.

The slope of the ramp has a direct impact on the slip resistance required of the decking material. As the gradient increases, so too does the need for a surface that provides adequate grip underfoot. To ensure suitability, decking boards should be tested using the shod foot wet pendulum test, in line with AS 4586, which measures slip resistance in wet conditions with footwear.

For user comfort and accessibility:

— The recommended gradient is as gentle as possible — 1 in 14 is considered ideal.

— The maximum allowable slope is 1 in 12, which requires higher slip resistance.

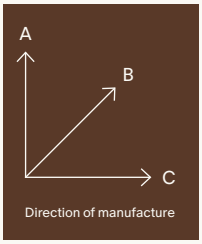
— Ramps must also provide a minimum clear width of 1200mm, unobstructed by fixtures or landscaping elements, to allow safe and easy passage for all users.

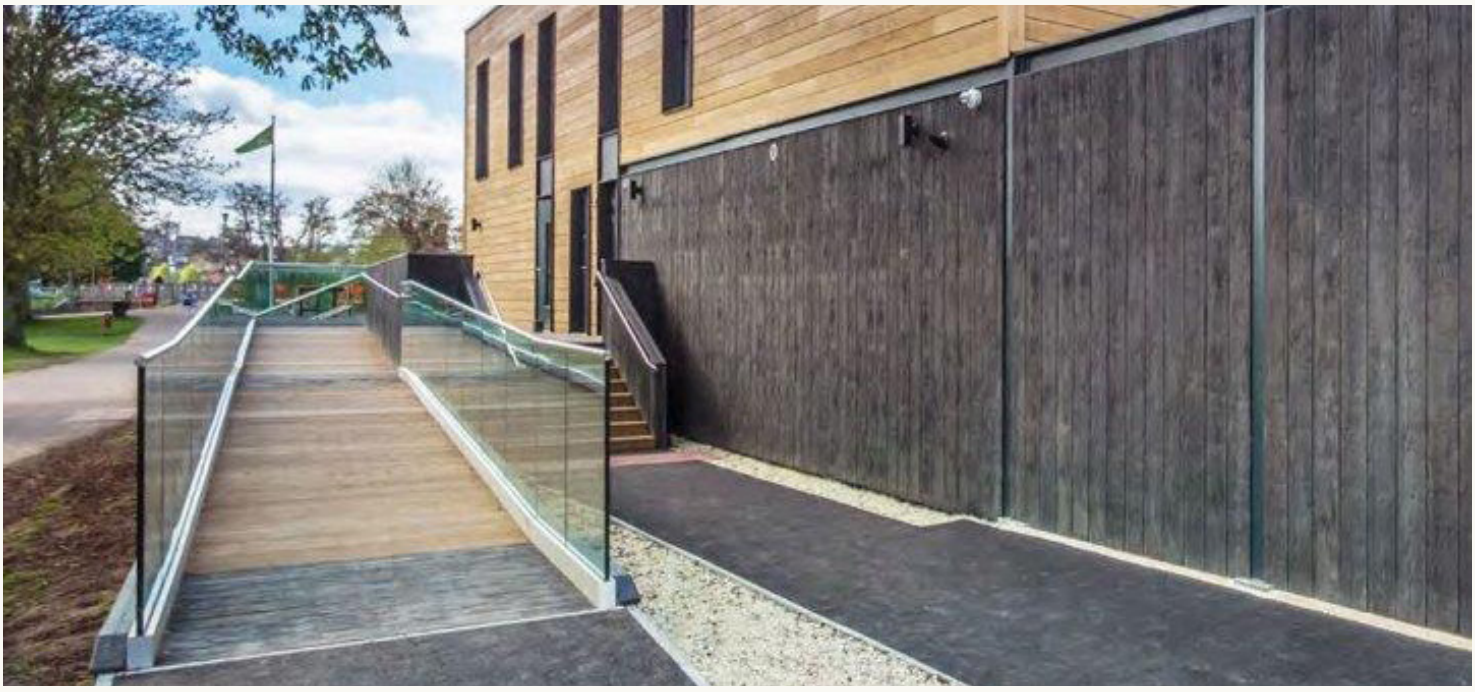
MILLBOARD ENHANCED GRAIN

With a refined timber grain and subtle surface texture, Millboard Enhanced Grain offers a natural timber aesthetic with dependable slip resistance. Ideal for ramp designs where both visual appeal and performance matter, it allows for a seamless continuation across outdoor surfaces.

SHOD FOOT — WET PENDULUM TEST

	PTV			
WEIGHT	A	B	C	NZ RATING
Dry	49	59	60	P4
Wet	42	37	36	P3





4.8 STAIR DETAILING

Stair design requires careful consideration of both safety and aesthetic detail—particularly when it comes to how the tread edges and risers are finished.

The tread edge can be finished with Bullnose boards, featuring a radiused edge. This profile can be used with a maximum cantilever of 40mm, allowing flexibility in achieving the desired aesthetic while maintaining structural performance.

Millboard Fascia boards are used to complete the riser detail, providing a seamless finish on the vertical face and tying the overall look together.

Accurate calculation of tread and riser dimensions during the design phase is essential to determine which board best suits your application—ensuring a safe, durable and visually refined stair installation.

BULLNOSE BOARD

32 x 150 x 3600mm

Suitable for use as an edging board.

FASCIA BOARD

16 x 146 x 3600mm

Suitable for use as an edging board.

4.9 CREATING CURVES

Curves can be achieved with Millboard using the specifically designed Flexible Square Edge profile.

This flexible edging profile can bend to a 1.2m radius at 20° angle, allowing curves or circles to be created.

Decking boards can then be cut to the desired radius to suit the application.

Using curves to define spaces, levels or texture, creates flow between spaces and gives you the freedom and flexibility with your design.

FLEXIBLE SQUARE EDGE

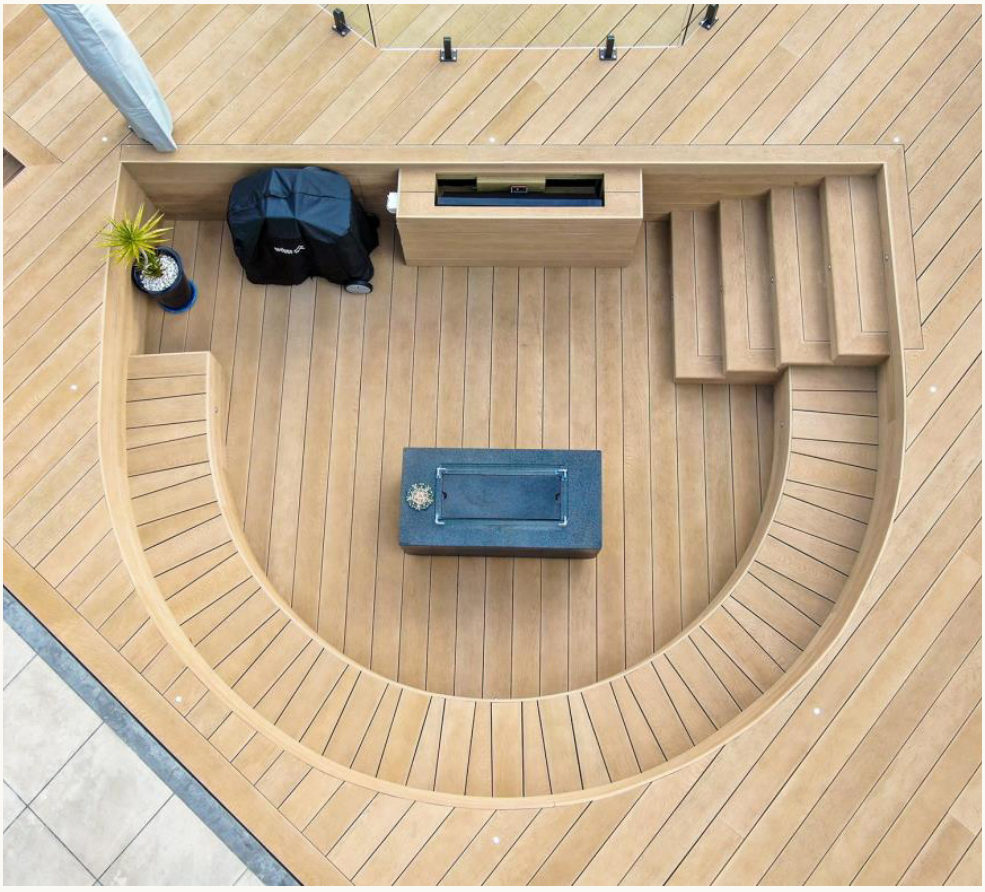
50 x 32 x 2400mm

EXTERNAL CURVE

An example of the Flexible Square Edge profile used around an external radius.

INTERNAL CURVE

An internal radius finished with the Flexible Square Edge profile in situ.



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