Infinity IS

DIY INSTALLATION POINTS

Please ensure you have downloaded the latest version of this Infinity Installation Guide.

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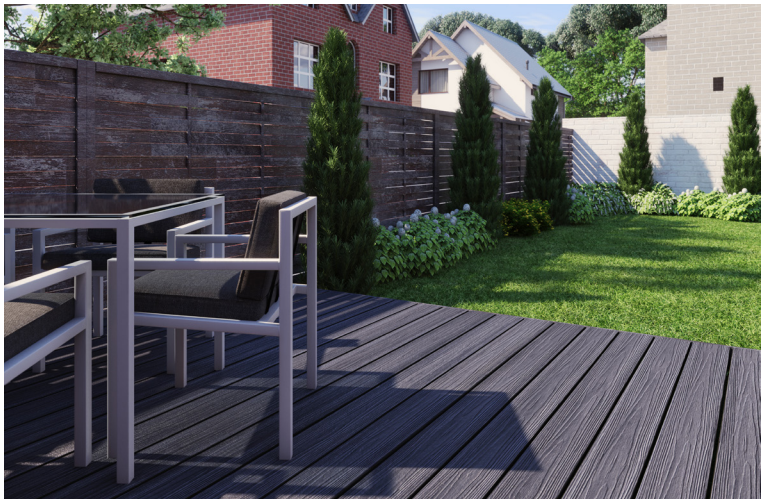
INSPIRED BY NATURE, DESIGNED FOR LIFE.

Contents



1. Introduction

This is a quick Infinity I-Series installation guide, but in no way replaces the full Infinity Installation Guide which is available for download on **www.eva-last.com**. It is recommended that you download and familiarise yourself with the full installation guide.

2. Pre-Installation

2.1 Standards

Ensure compliance with local regulations, building codes, and manufacturer specifications before installing any Eva-Last® product. Consult a qualified professional if necessary and verify the product's suitability for its intended application.

2.2 Safety

- Always comply with local occupational health and safety legislation and wear appropriate Personal Protective Equipment (PPE), such as safety glasses, helmets, gloves, boots, masks, and harness systems.
- Cutting Infinity can produce fine particulate matter; be mindful of sharp edges on cut boards.
- Ensure all parties managing or installing the material have access to Safety data sheets and Safe works procedures.

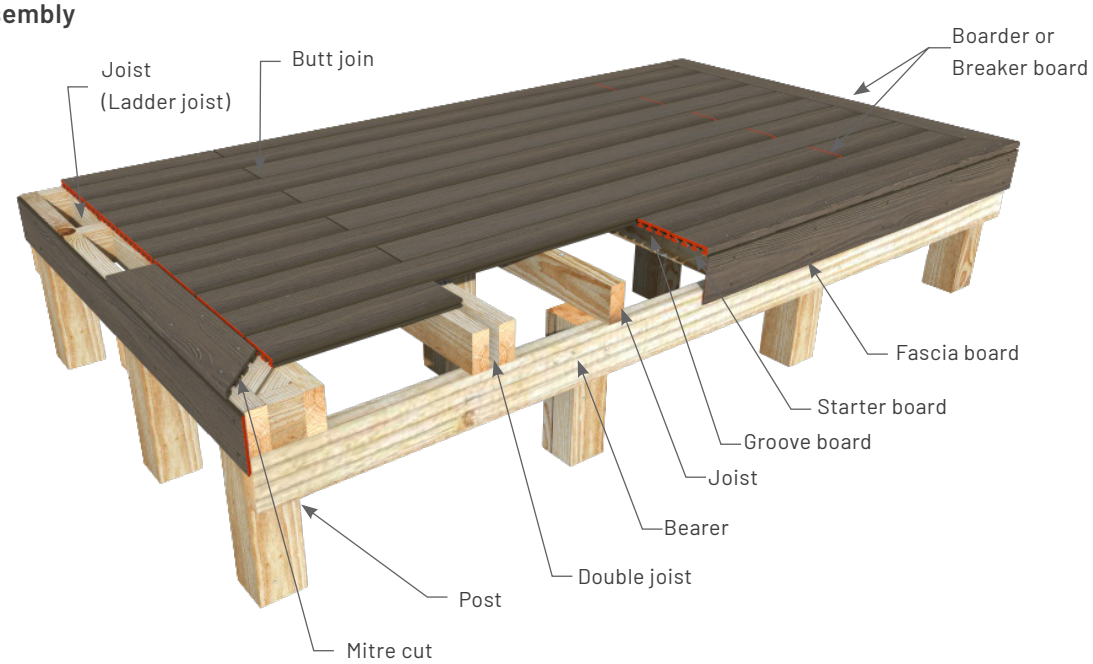
2.3 Storage and Handling

- Lift boards evenly, use corner protectors during transportation.
- Keep boards strapped and avoid cutting until needed for installation.
- Store components under cover on flat surfaces, securely, and avoid exposure to the elements.
- Ensure safe lifting practices, lifting boards may require multiple people.

2.4 Planning and Site Preparation

- Consult a professional for compliance with legislation.
- When planning and installing a deck, consider environmental factors that may impact durability, such as component corrosion, pools and chemicals, water quality, drainage, deck clearances, vegetation, reflective surfaces like Low-E glass, loading class, spans, extreme temperature ranges, and local building codes. Ensure proper ventilation and maintenance access and consult the Eva-Last Warranty and guides to ensure compliance before installation.
- Develop a maintenance plan based on the cleaning requirements, durability, and lifespan of the various components.

2.5 Typical assembly



3. Product summary

3.1 Composite profiles

Profile ID	Application type	Board width. (mm)	Thickness (mm)	Mass per meter (kg/m)	Cover width (1)(mm)	Coverage (2) (m/m^2)	Coverage mass (3) (kg/m^2)
STGJ02AE	I-Series - Grooved deck board	136.0	25.4	3.0	142.0	7.0	20.8
STGJ04AE	I-Series – starter board	136.0	25.4	2.8	142.0	7.0	19.4
STGJ14	Fascia board	150.0	12.0	2.3	156.0	6.4	14.7

(1) Coverage width = Board width + an assumed typical gap of 6 mm.
(2) Coverage = 1000/Coverage width
(3) Coverage mass = Coverage x mass per meter.

3.2 Fasteners

Appropriate fasteners and components must be employed relative to applicable legislation, the intended application, and the conditions present. Particular attention should be paid to the corrosion conditions of the site and the state of the substrate available. Use Hulk halo (s-series) or Chain Collated Clips must be when installing Infinity profiles. The manufacturer cannot guarantee a successful install using other decking clip brands which could then affect your warranty.

Hidden deck clips			
Fastener type	**Size (mm)**	**Length (mm)**	**Material**
S-Series Clip screw for timber substructure	M 4.2	40	SS 316

Top fixing deck screws			
Fastener type	**Size (mm)**	**Length (mm)**	**Material**
Top fixing deck screw for timber	M 5.0	58	SS 316

Top fixing Trim screws			
Fastener type	**Size (mm)**	**Length (mm)**	**Material**
Top fixing trim screw for timber	M 5.5	48	SS 316

4. Substructure

4.1 Spans

Ensure the structural members are the appropriate size for the requisite spans. Ensure the installation thereof is sound and level. Ensure suitable connections are used between members and between the substructure and the applicable substrate. Consult an appropriately qualified professional wherever necessary.

Use appropriate spans. This will depend on regional legislative requirements. Most regions require the satisfaction of both ultimate and serviceability conditions.

The table below summarises the achievable span of various profiles for the conditions outlined above and in Section 4.1 of the full Install guide. For additional information please refer to the Infinity TDS.

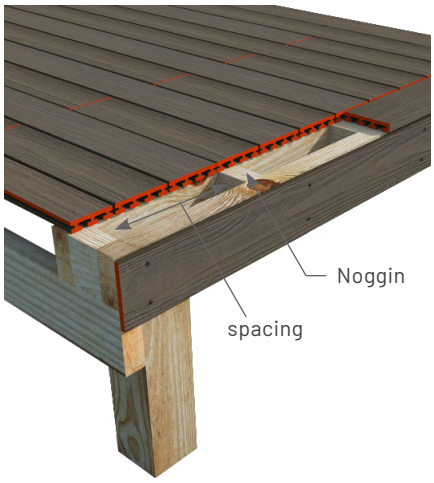
Profile details	Maximum span (mm)				
	Eurocode (and similar) approach				EN 15334
	Residential (2 kPa)		Commercial (4 kPa)		
	Ultimate	Serviceability	Ultimate	Serviceability	
STGJ02AE Grooved I-Series 136 x 24	500	500	450	450	400

The information provided herein is purely indicative and all applications should be assessed and/or designed by a competent professional irrespective.

4.2 Align Your Structure with Your Deck Laying Pattern

Plan your substructure to align with the intended deck layout, as it significantly impacts the structure design. Modify the deck size where possible to match board lengths and reduce wastage. Staggering patterns can capitalize on offcuts, and using borders and breaker boards can minimize the overall length boards need to cover. Ensure the structure supports the deck layout with appropriate spans and supports all board ends with noggins and double joists.

When planning the layout and structure of the deck insure that all board ends are supported by joist and noggins



Use noggins between joists where breaker boards and boarders are used. The spacing between the noggins must not be greater then the maximum centre-to-centre span.

Use double joists at all butt joins so that both boards are fully supported.

Each board end must have its own fastener

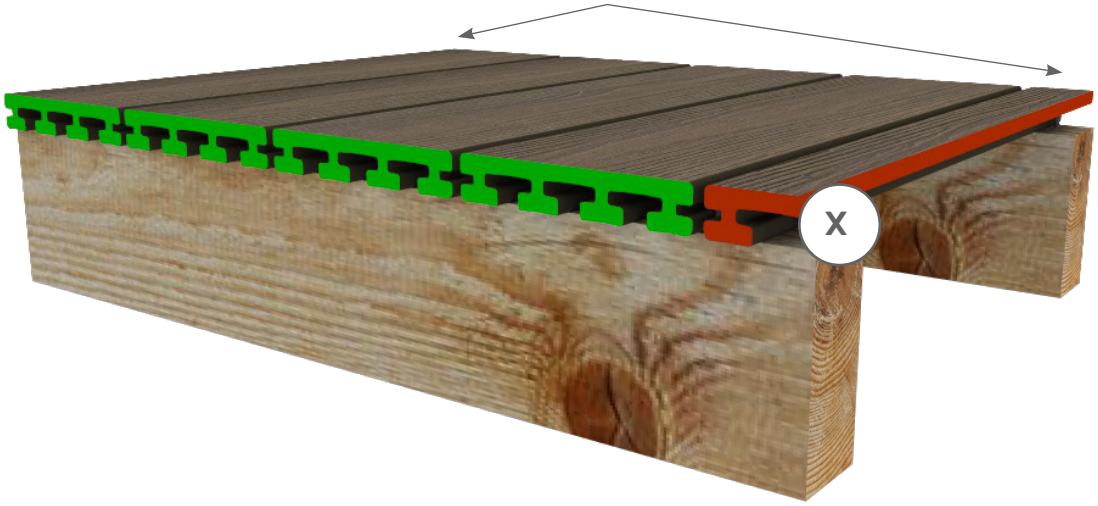
4.3 Joist spacing adjustments

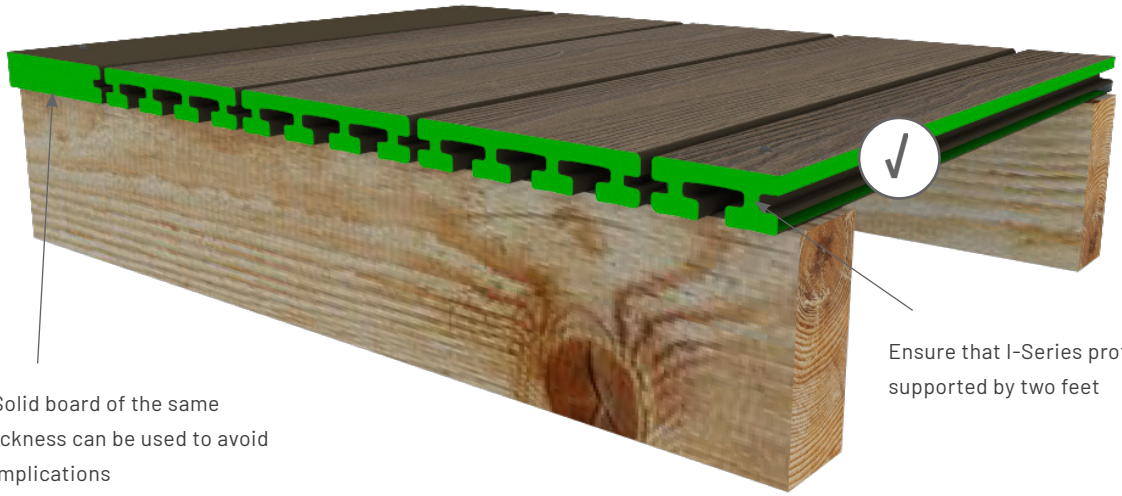
If the boards are not installed perpendicular to the joists, adjust the joist spacing to ensure the boards do not exceed the recommended span. Refer to the full installation guide for joist spacing adjustments

5. Ripping and cutting

- Support the profile properly when cutting, and use a table saw or ripping jig for best results.
- Use an 80-tooth or finer, 260 mm (10”) diameter blade.
- Allow the boards to acclimatise to site before cutting.
- Ensure that the cut boards will allow for space for expansion in line with the site’s expansion requirements.
- Ensure that ripped profiles will allow for the minimum fastening distances of 30mm from any edge.
    - Do not rip boards narrower than 60 mm when using a single top fixer and hidden fastener.
    - Do not rip boards narrower than 90mm when using two top fixing screws.

To avoid making the last board in the row too narrow, adjust the widths of both the first and last boards as needed.



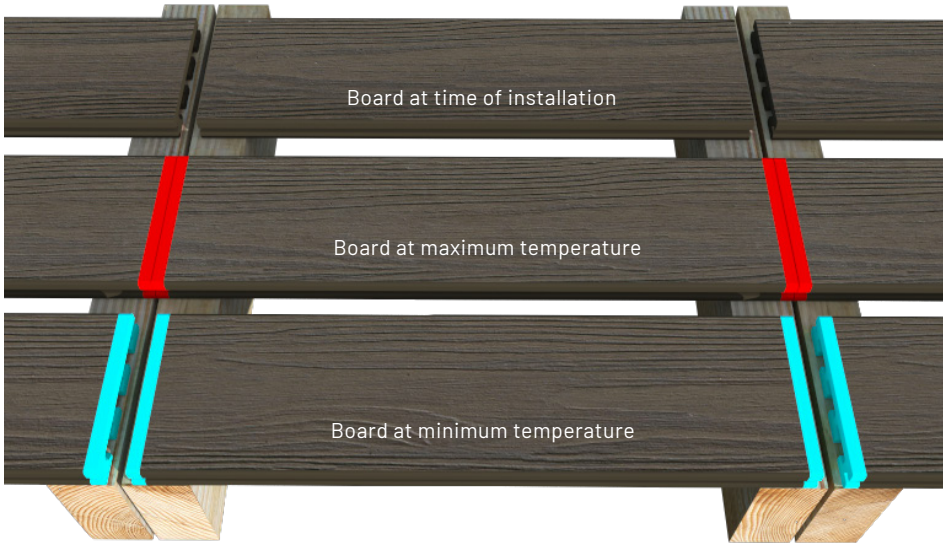


A Solid board of the same thickness can be used to avoid complications

Ensure that I-Series profiles are supported by two feet

6. Expansion gaps

Provide expansion gaps between boards that align with the expected record high and low temperatures of the environment. This allows the boards to manage the full range of temperature fluctuations without causing damage. Improper management of expansion and contraction can affect the warranty. Factors influencing expansion gaps include different board materials and colours, board length, and temperature. The following diagram shows typical board behavior under the effects of different temperatures.



At the time of installation, provide a gap between the boards that allows for their maximum potential expansion

If the gap is too small during installation, the boards won't have enough room to expand and may get damaged

The gap will widen as the temperature decreases from its original length. If the gap size is not aesthetically acceptable at the lowest temperature when the deck is in use, consider using shorter board lengths.

6.1 Steps to determining site temperatures and expansion gap

If the boards are not installed perpendicular to the joists, adjust the joist spacing to ensure the boards do not exceed the recommended span. Refer to the full installation guide for joist spacing adjustments.

1. Research the site temperature extremes.
    - Find the record high and low temperatures for the site. Weather forecast websites usually provide historical data for specific areas, which helps indicate the most extreme temperatures the deck will experience.
2. Account for sunlight exposure.
    - Boards exposed to direct sunlight can often be 25 to 30°C hotter than the air temperature.
    - Add a buffer. A good rule of thumb is to use the difference between the installation temperature and the maximum site temperature as a **Temperature buffer = (Maximum site temperature – Ambient temperature)**
    - Adjust the buffer for excessive exposure to reflective surfaces or extreme UV conditions.
3. Determine Change in temperature.
    - Expansion gap temperature = Maximum site temperature – Ambient temperature + Buffer
    - Contraction gap temperature = Ambient temperature – Minimum site temperature
4. Calculate the Expansion and contraction.
    - Use a linear coefficient of expansion to estimate board movement. For Infinity, this coefficient is 0.04 mm/m/°C. The formula to calculate the **Required gap size = Length of the board in meters x 0.04 x change in temperature**

Alternatively use this table to find the expected gap size based on temperature change. Multiply the gap size per meter by the length of your board in meters to get the required gap size. Remember to add the buffer.

Gap size per meter of board per temperature change (gap size (mm) /m/°C) *												
Temperature change (°C)	5	10	15	20	25	30	35	40	45	50	55	60
Gap size per meter (mm)	0.2	0.4	0.6	0.8	1.0	1.2	1.4	1.6	1.8	2.0	2.2	2.4

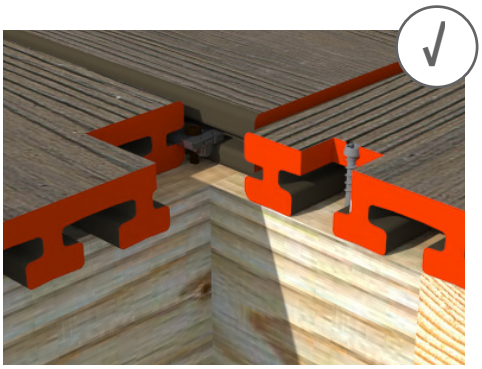
6.2 Implementing expansion gaps on site.

- Allow boards to acclimatise on site before installation to ensure uniform expansion.
- If the calculated maximum potential gap is gap sizes are larger than desired, the boards can be cut to shorter lengths to reduce the expansion gap. You may need to adjust the structural layout, accordingly, as detailed in section 4.0.
- Use boarders and breaker boards to create line breaks between boards, allowing them to be cut to the same length. This approach ensures that the expansion of acclimatized boards is more uniform and manageable than in a staggered pattern of different lengths.
    - If the boards are laid in an accessible straight line, the board edges can be cut after laying, though this is considered an advanced technique and care must be taken not to damage the structure.
- When cutting the boards to length, remember to account for the final length needed to allow for expansion gaps based on the temperature at time of installation.
- When laying the boards, leave the expansion gap between the boards as calculated. You may need to adjust the gap size if the temperatures vary over the course of the installation.
    - Shims and spacers matching the required gap size can be used to automatically create the gaps.
    - Remember to leave a gap between the building and the deck.

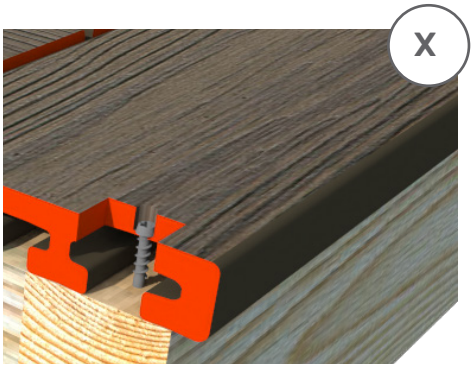
7. Fastening

Provide expansion gaps between boards that align with the expected record high and low temperatures of the environment. This allows the boards to manage the full range of temperature fluctuations without causing damage. Improper management of expansion and contraction can affect the warranty. Factors influencing expansion gaps include different board materials and colours, board length, and temperature. The following diagram shows typical board behaviour under the effects of different temperatures.

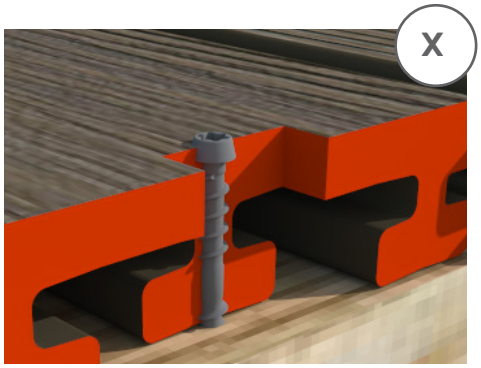
#	Description	Measurement
A	Distance from edge	30mm or between board feet
B	Board overhangs	10 to 20 mm
C	Hidden fastener edge distance	10 to 20 mm
D	Distance between fasteners	Minimum of 30 mm



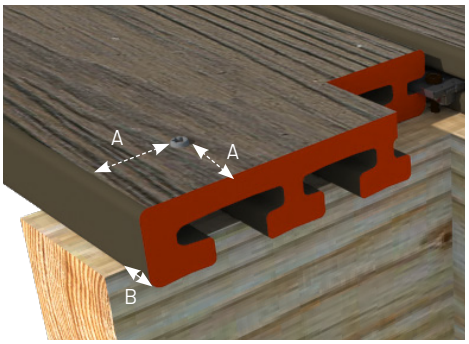
When top fixing, only use approved screws and I-Series profiles (STGJ02AE and STGJ03AE) and fasten between the feet of the boards



Do not overdrive top fixing screws. A depth setting bit can be used to avoid overdriving.

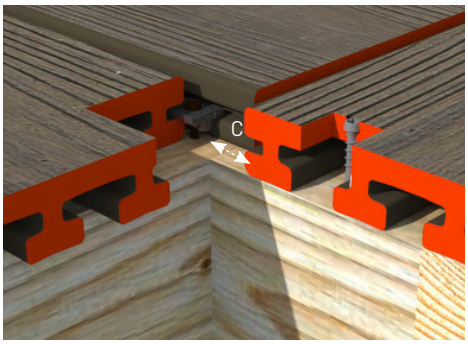


Do not fasten through the web or foot



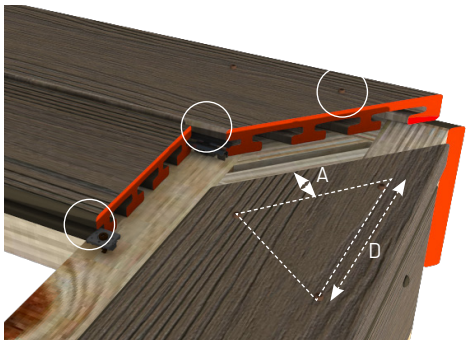
A - Maintain a minimum edge distance of 30mm from any edge

B - Limit boards overhaning joints to 10 to 20mm



C - Maintain clip edge distance between 10 and 20mm from the board edge.

Use Chain Collated deck clips or Hulk Halo clips when installing Infinity profiles

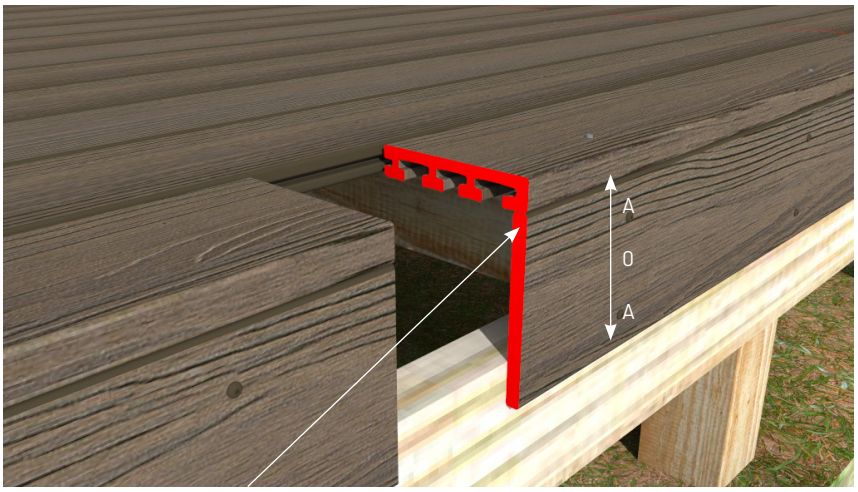


A - Always provide a minimum of two fasteners (Hidden clip or top fixed) per board joist connection.

B - Use additional fasteners where boards are mitred

8. Trim or Fascia

- Install your trim or fascia beneath the lip of the boarder board.
- Provide a minimum of two fasteners at every joist connection.
- Use a minimum edge distance of 30mm from any edge.
- Leave a small gap between the Trim and deck board for Expansion and contraction.



Expansion Gap

9. Disclaimer and copyright

9.1 Document disclaimer

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While most data have been compiled from research, case histories, experience and testing, small changes in the environment can produce marked differences in performance. The decision to use a material, and in what manner, is made at your own risk. The use of a material and method may therefore need to be modified to its intended end use and environment.

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9.3 Utilisation disclaimer

Legislation may differ between jurisdictions. Before installing any Eva-Last product, ensure that the application is rational and complies with the local regulations and building codes. Wherever necessary, consult a suitably qualified professional. Be sure to comply with material manufacturer specifications. Where manufacturers and building codes differ, revert to the building code requirements. Check that your choice of product is suitable for its intended application. For further product specification and information visit www.eva-last.com.

9.4 Copyright

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