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INSTALLERS TRAINING MANUAL

CO-EXTRUDED COMPOSITE DECKING www.eva-last.com



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Infinity





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1. EVA-LAST[®] Infinity[™] CO-EXTRUDED COMPOSITE DECKING

1.1 An introduction to wood-plastic composite

Wood-plastic composites (WPCs) are composite materials made of wood fibre/wood flour and thermoplastic(s). Wood Plastic Composites (WPCs) are produced by thoroughly mixing ground wood particles and heated thermoplastic resin. WPCs may be produced from either virgin or recycled thermoplastics including HDPE, LDPE, PVC, PP, ABS, PS, and PLA. The most common method of production is to extrude the material into the desired shape. These materials can be moulded with or without simulated wood grain details. Extruded WPCs are formed into both solid and hollow profiles. Injection moulding is also used.

Wood-plastic composites are still fairly new materials in the market, relative to the long history of natural timber as a building material. Wood-plastic composites were first introduced into the decking market in the early 1990s. Between 1994 and 2004, wood-composite products gained more than 50% market share making it the fastest growing construction material in US history. 60% of all decks in the United States today are made from wood-plastic composite.

1.2 What is Eva-Last[®] Infinity[™] and what are the benefits?

Over a decade ago Eva-Last[®] discovered there was a need within the South African market for a more robust and superior outdoor composite product. Through extensive research and stringent testing methods in some of the harshest conditions in the world, Eva-Last[®] developed the *Infinity*[™] range of wood-composite products.

Eva-Last[®]'s composite range of outdoor products, Eva-Last[®] *Infinity*[™], is the leading wood-plastic composite (WPC) brand in Africa. *Infinity*[™] is both ultra-low maintenance and environmentally friendly. Eva-Last[®] *Infinity*[™] WPC products are made from 60% reclaimed timber and 40% recycled plastic. The unique combination of wood fibres and plastic minimises the need to seal, varnish or in other ways treat Eva-Last[®] *Infinity*[™] composite.

All Eva-Last[®] *Infinity*[™] profiles are created using High-Density-Polyethylene-Plastics (HDPE). Where this differs from PVC is that PVC has some disadvantages, among them low thermal stability and high brittleness. Though PCV may have a slightly lower flame spread index when compared to HDPE, when PVC burns it releases highly toxic hydrogen-chloride, CHI, hence it is commonly considered as one of the most environmentally damaging thermoplastics. At temperatures above 70°C, PVC if not stabilised, can start to degrade and release HCI. Furthermore, photo degradation (damage caused to the board by sunlight) of PCV has been known to take place naturally in the outer layer of the product when exposed to the elements.

Eva-Last[®] supplies over 21 countries around the world and our global network is expanding exponentially. We provide products for all types of applications, from residential entertainment areas, massive commercial developments, exclusive safari lodges and highly specialised ocean marinas. The application and possibilities of Eva-Last[®] *Infinity*[™] are endless. Some of the biggest and most recognised brands in the world trust Eva-Last[®] *Infinity*[™] for its superior performance, making it the most requested WPC brand in Africa.

Designed and formulated in South Africa, Eva-Last[®] *Infinity*[™] is superior in quality and performance and has become a trusted outdoor building partner. Eva-Last[®] offers the latest in innovation and design and is a superior, eco-friendly, hassle-free alternative to traditional timber products.

1.3 Benefits of Eva-Last[®] Infinity[™] vs. timber

•	Ultra-low maintenance		Slip resistant
•	Environmentally friendly	•	Barefoot friendly
	Mould & moisture resistant		Simple installation

- UV resistant
 Various colour & finish options
- Rot, warp & crack resistant



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Thank you for choosing Eva-Last[®] *Infinity*[™]. You can be assured that you are using and installing a product that is one of the most durable, highest performing and long lasting in its class.

This guide was developed to help installers limit installation faults and workmanship, increase productivity and complete installations that last and conform to warranty specifications. Through support, training and the hands on use of this manual, Eva-Last[®] aims to give you a better understanding of Eva-Last[®] *Infinity*[™] and its capabilities. This in turn will give you the tools to advise clients with confidence and good, sound knowledge.

Eva-Last[®] aims to set the standard for composite installers around the world. We aim to lay out good practise guidelines for all installers and manufacturers of composite products so that the industry can be recognised as one that delivers high-quality products through high-quality installations.

1.4 Basic components of a deck





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2. TOOLS & MATERIALS

2.1 Tools

Eva-Last[®] *Infinity*[™] decking products require the same tools as those used for the installation of traditional timber decks. In order to properly install an Eva-Last[®] *Infinity*[™] deck you will need the following tools:



2.2 Materials

In order to properly install an Eva-Last[®] Infinity[™] deck you will need the following materials:

- □ Eva-Last[®] Infinity[™] decking boards
- □ Eva-Last[®] Infinity[™] fascia boards
- Clips
- Clip screws
- I Top fixing screws
- Carriage bolts
- Coach screws
- Beams to support the decking

- Poles
- Cement/concrete
- □ String/line
- I Marker boards
- Bidim
- Gravel
- □ Starter clips
- Locking clips

- Frame screws
- Truss clips
- Truss hangers
- Hurricane/purlin clips
- HULK screws



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3. Joist spacing

Please consult the chart below to ensure sufficient material and proper spacing of substructure joists for your deck before beginning installation.

Table 1: Joist spacing



Table 2: Eva-Last[®] Infinity[™] decking profiles

Please make sure you refer to the below table when fitting your decking boards

EVA-LAST [®] Infinity [™] DECKING PROFILE		Board dimensions	Number of Lm In a m ²	Number of clips / m ²	Plank weight per Lm	Substructure joist spacing
d,	DSG01	20mm x 140mm	6,90	22	3,22kg	300mm
Grooved, Double Side External Deck Board	DSG02	23mm x 140mm	6,90	22	3,76kg	400mm
	DSG03	25mm x 140mm	6,90	22	4,11kg	400mm
	DSG04	20mm x 145mm	6,67	22	3,45kg	300mm
ooved, I Board	DSN01	20mm x 140mm	6,90	22	3,41kg	300mm
Non-gr Externa	DSN02	23mm x 140mm	6,90	22	3,93kg	400mm



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EVA-LAST [®] DECKING PROFILE		Board dimensions	Number of Lm In a m ²	Number of clips / m ²	Plank weight per Lm	Substructure joist spacing
<i>w</i> Deck Board	DHG01	23mm x 140mm	6,90	22	2,83kg	300mm
	DHG02	21,7mm x 210mm	4,65	22	4,00kg	300mm
Hollo	DTG02 (Internal interlocking board)	23mm x 145mm	6,67	22	3,16kg	300mm
Sided, d	DAG01	20mm x 140mm	6,90	22	2,75kg	250mm
Arched, Single Deck Boar	DAG02	23mm x 140mm	6,90	22	3,22kg	300mm
	DTG01 (Internal interlocking board)	22mm x 145mm	6,67	22	2,95kg	300mm

4. General tips & good practices

- 1. Please use this instruction manual as a guide when installing Eva-Last[®] *Infinity*[™], paying close attention to gapping, spacing and fastener requirements.
- 2. Before beginning construction, check all areas local building codes and regulations.
- 3. Eva-Last[®] *Infinity*[™] products require proper ventilation and drainage to ensure longevity. Adequate drainage is needed to prevent water from pooling under the deck.
- 4. The more ventilation provided underneath the deck, the better. Don't close the sides and make sure air moves in all directions. This also allows moisture to evaporate, ensuring your deck has the longest life span possible.



- 5. When water sits inside the profile, it will be absorbed over time. Do not let this occur.
- 6. Always use sharp blades.
- 7. Check your mitre saw, against a steel square at the beginning of each day.
- 8. Recommend that your client not let mulch build up on their deck.
- 9. A deck should be cleaned with a high pressure hose monthly (even in winter).
- 10. Always give good and honest advice to clients. If you are unsure of anything, please request assistance from Eva-Last[®] or contact a specialist in the required field.



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5. Before installation: Tips for planning ahead

Important! Please make sure that before you begin construction, you are aware of building requirements, codes and restrictions.

The installation of any Eva-Last[®] product is a big investment and should be viewed as a serious building project. Installation plays a huge role in the longevity and lifetime of the product and will have a direct influence on performance as well as warranty.

If at any stage of the installation you need advice or assistance, please get in touch with Eva-Last[®]. We are here to help make each and every step of the installation process a success.

It is important that you have a solid understanding of the planning and installation process to guarantee that Eva-Last[®] *Infinity*[™] is built correctly. Attention to detail and careful planning are necessary throughout the entire installation process. Make sure you familiarise yourself with the Eva-Last[®] *Infinity*[™] installation guide before beginning construction. Warranty claims will be subject to compliance with specifications outlined in the Eva-Last[®] *Infinity*[™] installation guide.

Decide on which boards to use based on:

- 1. Your client's personal preferences and lifestyle
- 2. Moisture and drainage conditions
- 3. Direct sunlight if the projects site is an area that receives a lot of light you may want to suggest a lighter colour that will absorb less heat

Good time management of your build can ensure you save money and avoid the hassle and stress of a rushed job. If you can, start planning months in advance to avoid any nasty surprises.

Keep in mind the standard length of Eva-Last[®] *Infinity*[™] materials, if the project allows, try work to standard sizes of **2.9 metres, 4.5 meters, 5.0 meters** and **5.8 metres** in order to keep costs down and reduce wastage.

When calculating the amount of Eva-Last[®] *Infinity*[™] product you require, remember to take wastage into account. 10% wastage is a good average to work with for a square deck, and round/curved decks will have approx 15-20% wastage, however please keep in mind that you will still need to calculate this as it can vary massively depending on the shape and design of the deck.

When planning a deck, consider it as an extension to the outdoor living area rather than just an outdoor floor. Decks can incorporate comfort, fun and interesting elements. You may want to suggest a fire pit, barbeque area, shower etc to your client. There are no limits to what is possible.

Combinations of colours, particularly on a border around the deck or on the fascia will highlight and accent a deck. Experiment, explore and try something that will give the project that WOW! factor.

You could suggest adding lighting, either leading to and/or on the deck. Down lights, spotlights, stair lights, anything is possible. Lighting adds life, looks impressive and brings a wonderful ambience to the deck.

6. Before installation: Site inspection

Important! Please make sure that before you begin construction, you are aware of building requirements, codes and restrictions.

Inspect and assess the ground and/or surface below your project site before installing Eva-Last[®] *Infinity*[™]. This should be a dry flat area. For uneven surfaces allow for substructure alterations to create an even base for Eva-Last[®] *Infinity*[™] decking profiles. The ground should be well compacted.

Ensure the building site allows sufficient deck ventilation and drainage. For non-screed surfaces, plan a minimum of 50mm elevation space between the ground and the bottom of your lowest bearer.

For screed surfaces, decking profiles must be elevated a minimum of 30mm above the ground. This guideline is based on the smallest profile (composite batten) – other profiles may vary.



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7. Pre-installation checklist!

- Assessment of the site and area
- Ground conditions
- Soil type
- Drainage
- Flood test/drainage
- Storm water drains

- Where do all the gutters flow to?
 - How is the roof pitched?
 - Has the ground been compacted? (Consult with engineer)
 - Will the ground wash away or subside? (Consult with engineer)
- Exposure to sunlight
- Plants/trees near the site that may spill sap or residue onto the deck

Bring any issues, no matter how big or small, to your client's attention. If you do not discuss issues with them they may not be aware of them. It is your responsibility to let them know what you are not happy with as an installer.

Note: Make sure you discuss with your client whether or not they have had or need to have a civil engineer or architect check the site, especially on new building sites, in order to assess whether the ground has been compacted correctly or not and is suitable for decking or light construction. Have it checked for various elements such as storm water drains etc. If the site is elevated to a height of more than 1.5m, then you need to check the building codes and have an engineer inspect the site.

We highly recommend you insist on your client getting an expert in to check the site before construction begins.

Please note: There are many ways to build and install substructures and decks. For the purpose of demonstrating good practise, procedures and skills we are going to use a single type of material in this guide. These guidelines are not applicable to all applications. Each and every application needs to be assessed accordingly before beginning any installation. Building codes need to be adhered to and all Eva-Last[®] *Infinity*[™] installation guidelines need to be followed.

If you have any questions at any stage of your installation, please get in touch with us.

8. Eva-Last[®] specialised systems

Eva-Last[®] has developed a range of complete and durable specialised systems that work together to ensure the longevity and stability of the deck.

8.1 HULK screws





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HULK screws

HULK screws were developed by Eva-Last[®] using state of the art technology and manufacturing methods. They work in perfect synergy with Eva-Last[®] *Infinity*[™] boards and systems and were designed to do just that. We would like to insist that, as a recommended Eva-Last[®] *Infinity*[™] installer, you only use HULK for all Eva-Last[®] *Infinity*[™] installations.

HULK screws are an extremely durable and hard wearing choice for outdoor, corrosion-risk, or long term applications. HULK screws use an advanced bit lock system which maximises torque transfer and extends the life of bits and screws. It also quickens assembly time.





Fastening bits * Every HULK box contains a fastening bit.

* Remember it is good practise to pre-drill with HULK

boards with ease. With a built in roller,

each screw automatically cleans out the drilled hole, ensuring that the screw doesn't have any loose bits between itself and the board.



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HULK screws

HULK screws can be used for: deck construction, outdoor furniture assembly, garden applications, cladding, outdoor frames and pergolas.

Please refer to the table below for more information on HULK screws and how they should be used.

Table 3: HULK screws



* Remember it is good practise to pre-drill with HULK and counter sink with trim screws



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8.2 TITAN support pads

TITAN support pads offer fast, simple, durable and specialised support solutions for semi-permanent or permanent decking, paving and surfaces that have been water proofed. TITAN support pads are also ideal for installations on balconies and roof decks.



Applications where TITAN support pads are the ideal solution:

Roofs and roof decks

- Paved surfaces
- Balconies
 Waterproofed surfaces
- Terraces

Surfaces where high clearance is required

Benefits of TITAN support pads

- Height adjustable.
- No mechanical fixing required.
- Allows for good drainage, therefore preventing localised flooding.
- Creates the highest level finish.
- Manufactured from injection moulded polypropylene.
- Can tolerate loads of 400kg per unit.
- Manufactured from virgin material, ensuring the weight tolerance and strength is consistent.
- Suspended system means that there is no risk of the waterproofing membrane beneath being pierced or damaged.
- Creates a completely flat upper surface on roof's built-to-falls in the safest, most efficient way.
- Should the deck ever need to be inspected, the system can be easily lifted.
- The cavity allows for opportunities to hide unsightly objects, such as water pipes, electricity cables etc.
- The weight of the slab holds the whole system in place.
- Slope correction.



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9. Preparation: Designing a deck

Important! Please make sure that before you begin construction, you are aware of building requirements, codes and restrictions.

- Begin with the location of your deck and decide whether it will be a free standing deck, in between structures, joining 2 structures or if it is adjoined to an existing structure (fixed deck).
- Think about how the deck will be accessed. Will it be accessed through a doorway or is there a path leading you to the deck? Wherever you plan to build the deck, make sure it's easily accessible.
- With clear access to the deck, consider how you can use the natural landscape to add interest and function to your design.
- When you have a general idea of where you will build the deck, you will then need to determine the size and function. If
 your client enjoys entertaining a lot, a larger deck may be suitable to fit chairs, tables a braai and other outdoor furniture.
 Think about the style best suited to the project and the client.

Note: Remember to avoid a layout that places a railing in the middle of a window, if you have doors or windows that swing outward, make sure they will clear the railing.

10. Preparation: Deck layouts & plans

Important! Please make sure that before you begin construction, you are aware of building requirements, codes and restrictions.

Note: For the example of this training manual we are going to build a square, single level deck. Please always bear in mind that other decks may require different calculations and techniques.

- No application is ever the same. Develop your plan based on the most suitable application and deck boards used for the job and according to the specific conditions.
- Before you begin your layout, make sure you are clear of any utility lines, and irrigation. Ask your client to clearly indicate and mark where all utility and power lines are.
- Place your marker boards beyond the corners of your deck area.
- Tie the string to the marker boards, marking the outside edges of your deck plan.
- If there is no room for a marker board, use a single stake and drive a nail into the top.
- Tie the string to the nail. (Spray paint is a good alternative to string and also works well).
- Check that the string is level and square.
- Take measurements of the site and make sure you triangulate from corner to corner. (Measure the diagonals of the layout.) You will layout a square when the diagonals are equal.
- Make any adjustments and attach the strings in their final positions with screws.
- To mark the holes for the foundation posts, determine the foundation spacing. This spacing depends on:
 - 1. The size of your beams
 - 2. Local building codes and
 - 3. The design of your deck



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- Use another set of strings to line up the posts. Once you know the spacing, measure in from the side strings and use a
 plumb bob to mark the holes.
- Place a stake at each spot or spray paint the position.
- If the deck is fixed, you need to mark the height of the beams along the building as a reference. First, determine where the deck will sit in relation to the door. It should be below the threshold to keep the water from entering.
- Measure down the thickness of the decking combined with the height of the joists. This will give you the height of the top of the bearer beams. Then mark a level line along this point on the building.
- Remember the double joist if your boards join end to end. (Butt joins).

11. Preparation: Setting the deck poles

Important! Please make sure that before you begin construction, you are aware of building requirements, codes and restrictions.

- Before constructing the frame/setting the poles, look at your drawing and plan the whole deck with your laying pattern.
- There are various methods for constructing footings. We recommend the footing (concrete) and post (pole) combination.
- Using an auger, spade or pick to dig a deep narrow hole. Make sure you get to solid ground, if the ground is soft, your footing size will need to increase. If the ground is hard rock, you will not need to go as big with the footing. You will need to calculate this based on the conditions for load bearing and codes. (For hard ground 400mm x 400mm x 400mm OR 400mm x 400mm x a third of the height of the post more than 1200mm)
- Once you get to the required depth, move onto the next hole. When all the holes have been dug, check that they are all correct according to local building code.
- Remove any grass and roll out the bidim over the site. The bidim holds the soil, allows water to flow through and prevents grass and weeds growing through the deck.
- Cut openings for the poles.

Set the poles – there are two options for doing this!

Option 1

- Pour concrete into the hole.
- Check that the concrete is level.
- When the concrete is set, place the pole on the footing. Plant the smallest side of the pole into the ground at the bottom.
- Use the layout strings to keep the posts in line. You can attach temporary braces if needed.
- Check that it is plumb with a level.
- Fill the hole with gravel/concrete mix.

Option 2

- Place the pole in the hole.
- Secure it with nails so that it grips onto the concrete.
- Check that it is plumb with a level.
- Use the layout strings to keep the posts in line. You can attach temporary braces if needed.
- Fill the hole with concrete mix.
- Slope concrete away from pole. There should be no soil on top of the concrete.



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Preparation: setting the deck poles

- Make sure the poles reach the required height once they are set in the ground.
- For a large deck with many poles, you may want to have the premixed concrete delivered, alternatively mix your own. Scoop the concrete into the hole to code level. Then use a board to work the concrete, eliminating air pockets.
- Once the posts are set, cover the bidim with gravel.
- Leave the concrete to set for at least 24 hours to ensure that the footings are solid and strong, taking the moisture content of the air and soil into consideration.
- The level of the bottom of the joist will be at the same level as the beam. Set the end of the chalk line at the mark of the bottom of the joist mark, while holding it against the post.
- When it's level, snap the chalk line. This is where the top of the beam should line up.
- Mark all of the poles this way.
- If the deck is fixed, the next step is to attach the beams that will support the decking. You will need to use carriage bolts through the beams and poles.

TIMBER POLES	STEEL POLES		
Cheaper	Potentially more expensive		
Burn resistance is pretty much non existent compared to steel	Fire resistant		
Insect problems such as termites (without treatment)	Properly galv. and treated can ensure a frame that will last		
Rotting due to damp (without treatment)	No rotting or warping		
Treatments used are usually poisonous, making it hazardous to burn	Extremely precise		
Warps as it dries out	If not properly treated can rust but there are ways to treat rusted steel aswell, where as with pine you would need to replace or cut away and brace any rotting parts		
Not as precise as steel	Because it is engineered there are far more options regarding shapes and sizes of steel		
Wood tends to dry out over time, causing bolts and nuts to shift	Slightly more difficult to work with, pre-drilled holes can help		
Not nearly as strong as steel	Much stronger than timber		

Table 4: Timber poles vs steel poles



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12. Preparation: The substructure

Important! Please make sure that before you begin construction, you are aware of building requirements, codes and restrictions.

The substructure and installation of Eva-Last[®] *Infinity*[™] must be done properly and all installation guidelines need to be adhered to in order to ensure the lifespan and warranty of the product.

Asses and select the most suitable sub-structure after and based on your site inspection.

Composite battens

- High moisture resistance.
- Ideal for low lying, level surfaces and self supporting structures.

Composite battens are good for use on self-supporting surfaces like tiles, concrete and screeded surfaces. They have high moisture resistance qualities and are perfect for low lying, level surfaces and spaces where you don't have a lot of height to work with. They are well suited to cladding applications due to their highly durable properties.

CCA treated pine frame

- Made from natural material that requires maintenance.
- It stretches and shrinks with moisture.
- It has intricate workings.
- If you can't access it, it will dry out.

Galvanised steel system

- Extremely stable.
- Ideal for elevated structures.
- Highly durable.
- Doesn't dry out.
- Pre-galvanised.
- No need for metal working skills.
- Smart fixing solution.
- Galvanised coatings may corrode.
- No need for welding.



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Aluminium

- Ultra durable.
- Great for cladding and furniture.
- Not ideal for framing as it is expensive and not as stiff as steel or pine.

Stainless steel

- Durable.
- Not ideal for all applications.
- Difficult to work with.
- Not easy to weld.
- Very expensive

Please refer to Table 2: Eva-Last[®] Infinity[™] decking to assess and select the most suitable deck boards for your site and application.

General: Substructure

- Composite as a substructure
 Eva-Last[®] Infinity[™] products are for decking and accessory use only and should not be used as substructure material.
- Consider what is under your deck
 The footing of the structure will sink if water accumulates on the deck especially in one centralised area. Remember to check that the soil is compacted correctly and has a gradient/slope so that water can drain away sufficiently.
- Leave a maximum of 50mm overhang of Eva-Last[®] Infinity[™] decking from substructure joists

13. Preparation: Framing your deck

- 90% of the deck is the frame. If the frame is installed correctly, everything else should fall into place.
- If the poles are set, the next step is to attach the bearer beams that will support the decking. You will need to use carriage bolts through the beams and poles.
- From the chalk line, measure down the width of the beam to make a mark where you will attach cleats.
- Use a cleat, the same width as your pole and attach with HULK screws.
- Cut your beams to length. If they have a slight arc (crown), make sure the crown is always facing up and place them on the cleats. Use a clamp if you need to then drill the bolt holes. The beams could also be pre-cut then mounted.
- Insert the bolts and tighten.
- If the structure is adjoined to an existing structure (fixed) install truss hangers with coach screws/chemical anchors/shield anchors against the structure to support the bearers - level with line on building.
- Place truss hangers in place and screw bearers to truss hangers with HULK screws (pine) or Tek screws (steel).



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- Cut the poles to the top of the bearer beam.
- Check the spacing of the joists and that they are correct. (Please refer to Table 1: Joist Spacing)
- Starting at the beginning of a bearer (parallel or square line), roll out your tape measure and mark the required joist spacing on top of the two end bearers.
- Once you have all your marks, extend the lines down the face of the planks using a combination square. Place an X to the right of this line, indicating that the joist will sit to the right.

Note: You will need to check the different spanning capabilities of the selected deck board you are using to determine the joist spacing for your job. (Please refer to Table 1: Joist Spacing) When laying the surface, different patterns require different joist spacings. Please refer to the table when prepping the joists to ensure you have sufficient support everywhere.

- Now you can attach the joists. First cut the joists to length. Always apply a sealer to the cut ends and edges for pine and steel. If you are cutting galvanised steel, please be sure to seal the ends with cold galvanised spray.
- Attach the joist to bearers with hurricane clips, fix with HULK screws (pine) or Tek screws (steel)
- Now attach the rim joist against the end joist and attach them with HULK frame screws (pine). For steel, use corner truss clip with Tek screws to attach the rim joist with the end joist.
- The frame should now be locked in place.

14. Installation: Laying the deck

Important! Please make sure that before you begin construction, you are aware of building requirements, codes and restrictions.

If you have any questions or uncertainties, please contact Eva-Last® before beginning installation.

- Always wear safety equipment.
- Make sure you pre-drill holes for trim screws and ensure all screws are secure, but not over tightened during installation. This will help prevent pressure cracks.
- Eva-Last[®] Infinity[™] profiles contain plastic and will expand and contract more so than natural timber. The expansion and contraction of these profiles must be considered when installing. Sufficient expansion gaps must be left at butt joins as well as where the profiles meet fixed objects. Consider temperatures at time of installation for contraction/expansion purposes. The rate of expansion of Eva-Last[®] Infinity[™] profiles is calculated at 3mm per running metre.
- Place Eva-Last[®] Infinity[™] profiles on the decking site 72 hours before installation to allow acclimation to environment.
- Avoid pre-cutting Eva-Last[®] Infinity[™] boards, as not every construction wall is straight.
- The first board is key in the laying process! If it is a fixed deck, place the first plank flush with the rim joist make sure it is square or parallel with the existing structure or with your frame.
- Make sure your starting profile is square on the frame and laid perfectly straight, as all subsequent planks will follow its line. Make sure of this by measuring edges and diagonals.



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- Top fix the board to the rim joist with the preferred overhang. Depending on the design, you can have a bigger overhang, but remember you cannot ever overhang by more than 50mm. Aesthetically, it often looks better when you overhang about 10mm-15mm over the fascia.
- A starting clip can be used when you end flush with the pine and there is no overhang.

Table 5: Expansion



How to use Eva-Last[®] clips to control expansion:





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1. Straight board laying pattern clip position example

Expansion of profiles in one direction, profiles being secured on one end.



2. Alternate straight board laying pattern clip position example.

Expansion of profiles in two directions, profiles being secured in the middle.



3. Staggered board laying pattern clip position example.

Expansion of profiles in one directions, profiles secured in the middle.



Sufficient gap must be left for expansion



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Fixing your first profile can be done in 2 ways:

- 1. Using starter clips recommended when installing profiles 3m and longer, as this will allow the boards to slide freely when expanding & contracting no overhang.
- 2. Top fixing with HULK screw profiles 3m long or less, for expansion & contraction reasons with overhang.

Installation: Laying the deck

- Lay planks perpendicular to joists or at a preferred angle.
- Attach subsequent profiles to joists with decking Halo clips.
- Pre-load clips with HULK screw.
- Hold clip over joist and tighten to 75% to hold the boards in place.
- Move the next profile into position then sufficiently tighten clips. Do not over tighten as this may deform the clip.
- Continue to next board.
- If you are pre-loading clips, try to have someone assist you in placing the clips in position on each board.
- Install a clip on every joist and fasten with HULK screw. You cannot miss one!
- Push the next board into place, do not force or push too hard. The clips will keep a gap naturally if installed correctly.
 If you over tighten, the clip will deform and increase the gap.
- When fastening with a screw, don't over tighten either.
- It is always a good idea to use a cordless drill with a clutch. Set the clutch relatively light to ensure you don't over tighten.
- Fix last/end profile with the starter clip or top fix as shown below. Please remember to always pre-drill holes and counter sink to avoid cracking.
- Top fixing screws should be no closer than 30mm from the edge of the profile.



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Installation: Laying the deck

Install a second support joist as shown below for proper attachment of the hidden clip. Locking clips can be used on butt joins. Once the support joist is in place, the clips can be secured next to one another.



- Eva-Last® decking clips fit easily, do not force them into the plank grooves (for expansion & contraction reasons).
- Use a clip and screw on every joist. Boards must not ever share clips or joist! Screw clip into joist, taking care that the screw goes down straight and into the centre of the joist.
- Screws must go in at 90 degrees so as not to damage the next board.

15. General tips: Joists

- Rim joists mark spacing and lay out your joists with rim joist in mind. For complex designs you may need to curve the rim joist.
- You will always need perimeter joists (rim joists) for fastening fascias.
- Always remember to leave 25mm 38mm gaps between double joists.

16. General tips: Deck build & detail

- If you are working between set lines, check that they are parallel. This will help with wastage and help disguise lines that are not straight.
- Use a one or two board perimeter around a deck and then lay the boards perpendicularly inside. Make sure there is an area for water and leaves to fall through.
- Think about giving a deck an overhang, rather than a trim.
- Always crossover. Use the length of the profiles in the direction of the shorter side of the deck.



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- Build in boxes. Building a border of two profiles (breaker board) around each profile length area will prevent profiles impacting each other head to toe and will control expansion.
- If you want to keep your gaps perfectly in line, use the Eva-Last[®] locking clip where you are making your joins. This way thermal expansion will be equal in all directions and profiles will not move over time.

Important! Always make sure you are working with the correct joist spacing for your profile. Please refer to Table 1: Joist spacing for the correct spacings for your profile and application.

17. General tips: Pre-drilling & fixing

- Locking clips help prevent boards from moving around.
- Don't fix more than 30mm from the edge (critical edge).
- When pre-drilling holes, drill holes that are slightly bigger than the screws.
- Cut the boards shorter fit them in thirds. This will assist the screws and stop them from cracking.
- Top fix to the same specs as the joist using 2 screws.
- Top fix on every joist.
- Force of fasteners can exceed the force of expansion and contraction.

18. General tips: Locking clips

- Use 2 rows of locking clips at butt joins, especially when you have two long lengths of board next to one another.
- Use locking clips to control expansion. You can't lock both ends boards will expand in direction of least resistance.

19. General tips: Fascias

- Fascia boards should be screwed to the frame (end joist or rim joist) and not to the decking boards.
- Use two screws fixed rigidly every 300mm along the profile, and no more than 40mm from the start/finish edge.
- Allow a ventilation gap of 40mm between the bottom of the fascia board and the ground.
- Be cautious with fascias, especially with high decks sometimes rather use frames with a weave.
- Fascias should sit underneath the deck boards.
- Depending on the application, think about rather using overhang vs. fascia trims.
- Cut fascias at an angle of 30° 45° at joins.



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20. General tips: Lighting

• When fitting lights, the diameter of the light should exceed the size of the hole, making it sit on the surface slightly. Please consult an electrician.

21. After installation

- Do not burn the left over composite material. Dispose of it mindfully and correctly.
- Minor spills and stains on your deck can be dealt with by cleaning.
- Please read the Eva-Last[®] Infinity[™] Cleaning & Care guide for more information, insist your client does too.

Important! Do not sand Eva-Last[®] Infinity[™] boards

● Please insist that your client reads through the Eva-Last[®] Infinity[™] Installation Guide and Cleaning & Care Guide, available at www.eva-last.com. Once a month, the Eva-Last[®] Infinity[™] deck should be cleaned with soapy water and a hard bristle broom to remove stains and dirt stuck in the grooves and ridges. For optimum cleaning and longevity, a high pressure hose should be used.

22. Don'ts:

- Do not span over a bearers loading capacity when building a deck, it is unsafe.
- Do not rush a job.
- Do not use inferior products.
- Shiplap swells, rots and changes shape.
- Do not trap moisture.
- Do not ever use cracked boards.



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Notes
