KEKSIÄ®

INSTALLATION GUIDE + TECHNICAL DATA 2023

EVERGREEN

KEKSIA EVERGREEN DECKING
INSTALLATION GUIDE 2023

PLANNING

Make sure you have a clear plan of what you are going to be building. Ensure the plans meet the local council regulations along with any Australian Standards and BCA regulations that may need to be considered. You would also want to make sure you have any construction certificates and/or approvals in please prior to commencement of work. Planning is essential for an exceptional result.

PRODUCT INTENDED PURPOSE

Make sure the product will be used as intended. This is decking and cannot be substituted for other material use without voiding the warranty. I.e. Evergreen decking cannot be used as a joist or bearer. It must be installed correctly as per the guidelines as set out in this installation guide. Boards may not be installed directly over or onto existing decking boards, hard surfaces, dirt or grass. Decking must be installed onto an appropriate joist system.

TOOLS, PPE & SITE SAFETY

Appropriate compliant, undamaged PPE should always be worn when loading, unloading, unpacking, handling, cutting, fixing and cleaning the decking boards. When cutting the decking always use a blade that specifically allows the use of composite decking. These blades are common and easy to find from most hardware stores and specialty blade suppliers. Do not use a coarse timber blade or a metal blade. Use only high-quality drill bits for pre and pilot holes. Always perform test cuts and drill test holes prior to installation to determine the quality of the holes or cut. Holes and cuts performed correctly should not chip or damage the board and should appear visually pleasing and acceptable.

STORAGE & HANDLING

A suitable flat area on site should be allocated to storing the decking. This area should be free of mounds, dips, rocks, rubbish and loose debris that may not allow the packs of decking to sit flat and even on the ground. Uneven surface storage may cause the decking boards to warp or distort.

ACCLIMATISING PRODUCTS PRIOR TO INSTALLATION

It's important that the decking be allowed to acclimatise to the environment in order to reduce post installation movement due to expansion/contraction. We recommend having the boards delivered a minimum of 48hrs prior to installation so they can sit onsite and be at site temperature when installed.

SITE CARE, MAINTENANCE AND CLEANING

Awareness of what is taking place on the jobsite is important. For example, is there a balustrade being installed above that can lead to steel sparks landing on the decking surface and creating rust stains. Is there Gyprock or CFC being installed on the site leading to heavy white dust build up? Be aware of your surrounding and the potential surface implications it can have. Ideally the decking would be installed last or with the use of surface covering protection if being installed on an incomplete building site. A ph neutral cleaner should be used if the surface is to be cleaned. Please contact KEKSIÄ if heavy cleaning is required and always do a test clean on an offcut and wait 48hrs after the test to make sure it has not damaged the surface. Prevention is better than cure.

INSTALLATION USING CLIPS AND SCREWS

Only clips and screws provided by KEKSIÄ should be used for installation. We do not endorse nailing of our decking or fascia boards under any circumstances. Starter clips KDT3 (timber joist) and KDM3 (metal joist) are used to secretly secure the first decking board. KDT1 (timber joist) and KDM1 (metal joist) are used to secretly secure the rest of the deck. Despite self-tapping screws, predrilling the joist may be required for any metal joist with a thickness greater than 2mm that has not been supplied by KEKSIÄ.

For surface fixing, only the colour matched screws provided by KEKSIÄ should be used. A clearance hole should be drilled in the decking to allow for expansion and contraction. A pilot hole should be drilled into metal joists with a surface thickness greater than 2mm. All screws should be fixed into place straight and true, not on angles.

FIRE RISK AND LOW E GLASS

Ensure you are aware of the materials installed in the immediate surroundings. Be aware of potential excessive heat on the surface of KEKSIÄ Decking from external sources such as but not limited to fire or reflection of sunlight from energy efficient window products. Low-impassivity (Low-E) glass can potentially harm decking products. Low-E glass is designed to prevent passive heat gain within a structure and can cause unusual heat build-up on exterior surfaces. This extreme elevation of surface temperatures, which exceeds that of normal exposure, can possibly cause the decking to melt, sag, warp, discolour, increase expansion/contraction, and accelerate weathering. Pay particular attention to small areas and courtyards with large concentration of glass, as this may create a micro-climate causing excessive heat exposure to the decking. Customers that have concerns about possible damage by Low-E glass should contact the manufacturer of the product.

STATIC ELECTRICITY

Depending on outside conditions and what an individual is wearing, it is possible for static electricity to build up on occupants connecting with composite products. This may result in a small shock when touching a grounded item. Anti-static surface liquids are available on the market if you search for them. Some of the products show great results in reducing static build up. Additionally, you can earth the substrate to the ground.

VENTILIATION & GROUND CLEARANCE

We recommend no less than 35mm ground clearance to the underside of the decking.

SPANS & CANTILEVER

For KEKSIÄ Evergreen decking 140x24mm, the following spans apply to all joists, composite, timber and metal. Cantilever of any kind should not exceed 30mm.

Degree/Angle to joist	Span Residential (mm)	Span Commercial (mm)	Minimum Ground Clearance (mm)	Minimum Ground Clearance over Concrete (mm)
90° (standard Deck)	450	350	300	35
60°	400	300	300	35
45°	350	300	300	35

EXPANSION AND CONTRACTION

KEKSIÄ decking boards will experience expansion and contraction with changes in temperature. Linear expansion and contraction properties are most significant where extreme temperature changes occur. Fastening the deck planks according to the gapping requirements noted in the following table, accommodates for this movement (assuming that the maximum temperature is 40°C in your region).

4 things you need to know to calculate the expansion and contraction:

1. Coefficient of Linear Expansion (CLE): 0.045 mm/m (°C)
2. Installation Temperature (°C)
3. Maximum Temperature in your region (°C)
4. Length of the Board (m)

Gap=Coefficient of Linear Expansion (CLE,°C) x Length of the Board (m) x (Max. Temp. In your region - Installation Temp. °C)

Breaker boards are advised every 5.4m when installing long decks. The expansion/contraction measurements shown in the table below can be distributed evenly at either length of the board provided there is a screw fastened at the central point in the length of decking to allow the decking to expand and contract evenly at either end.

A minimum gap of 5mm should be left around the perimeter of any decking butting up against a wall or adjoining surfaces.

*NOTE: The table below shows the overall gap required according to the temperature and length of the decking piece to be installed. The expansion value may be halved and distributed to either end of the decking board, provided the board has a fixing clip or screw in the centre of the board to hold it stable in the centre. This will allow it to expand and contract evenly at either end. In addition, if the gap is less than 3mm, then a 3mm minimum gap shall prevail. If the gap is greater than 3mm, it is subject to the data in the table below.

Length (m)

Installation Temperature (°C)	1	2.44	2.8	3	3.66	3.9	4	4.88	5.4	
10	3	3.29	3.78	4.05	4.94	5.27	5.4	6.59	7.29	Gap (mm) to leave between boards
15	3	3	3.15	3.38	4.12	4.39	4.5	5.49	6.08	
20	3	3	3	3	3.29	3.51	3.6	4.39	4.86	
25	3	3	3	3	3	3	3	3.29	3.65	
30	3	3	3	3	3	3	3	3	3	
35	3	3	3	3	3	3	3	3	3	
40	3	3	3	3	3	3	3	3	3	

INSTALLATION USING ALUMINIUM JOIST

Please consult the aluminium joist manufacturer for best installation practices. If using the KEKSIÄ aluminium joist system please contact your sales representative for the latest version of our installation guide.

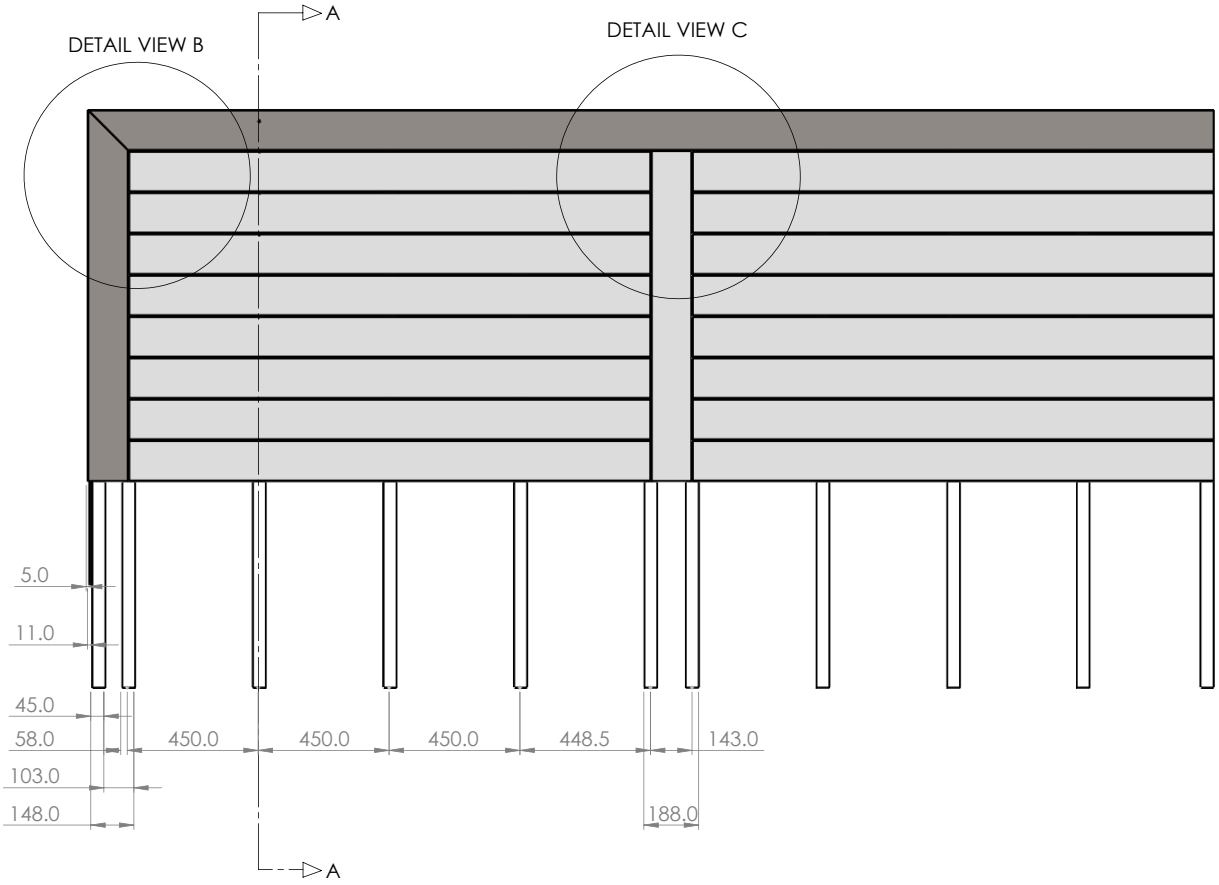
INSTALLATION USING STEEL JOIST

Please consult the steel joist manufacturer for best installation practices. Please note KEKSIÄ does not provide a steel joist system. It is the responsibility of the installer/purchaser to ensure the steel joist system will interact with the decking correctly.

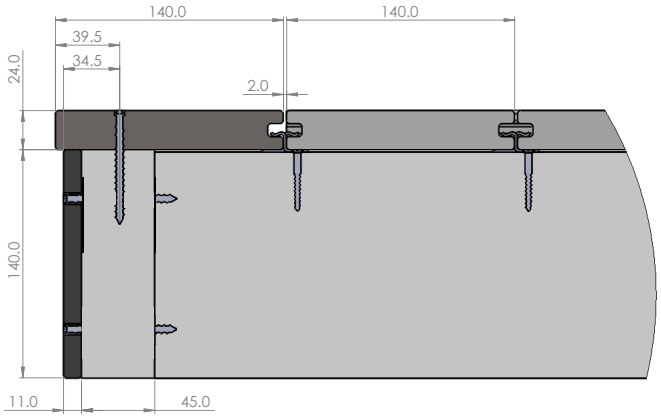
INSTALLATION USING TIMBER JOIST

Please consult your builder/carpenter for best installation practices. Please note KEKSIÄ does not provide a timber joist system. It is the responsibility of the installer/purchaser to ensure the timber joist system will interact with the decking appropriately.

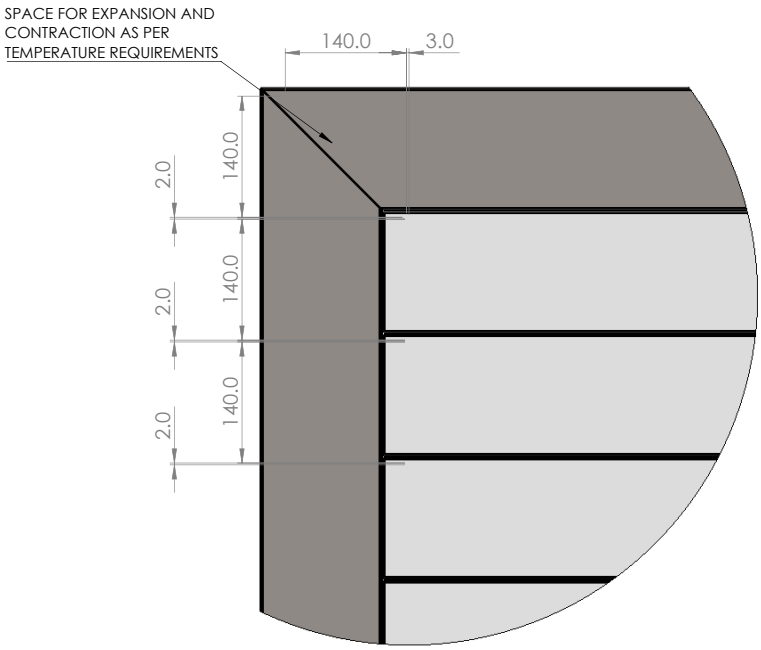
Plan View showing typical timber joist layout, decking board and edge board detail:



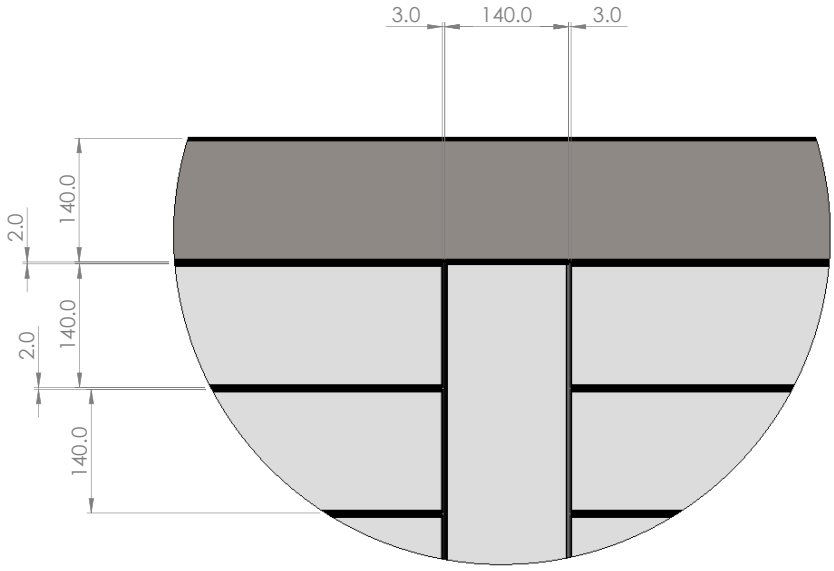
Section View A:



Detail View B:



Detail View C:



TEST RESULTS

No.	Property	Test Method	Test Result							Conclusion
1	Abrasion Resistance	ASTM D7031-11(2019) Section 5.17 & ASTM D4060-19	Weight loss: 24.7mg/1000r							Pass
2	Antimicrobial Activity Test	ASTM G 21-15 Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi	Test organism(s)	Concentration of spores (spores/mL)	Rating observed growth onspecimens (after 28 days)					Pass
			*Test organism	1.0x 10^6	0 Grade					
3	Boiling Test	EN 15534-1:2014 + A1:2017 Section 8.3.3	Mass change rate: 0.18%							Pass
4	Coefficient of Linear Thermal Expansion	EN 15534-1:2014+A1:2017 Section 9.2 & ISO 11359-1-2014 & ISO 11359-2-1999 Method A	43×10^{-6} K^{-1}							Pass
5	Creep Behaviour - Unknown Span in Use	With reference to EN 15534-1:2014+A1:2017 Section 7.4.2 and client's requirement	Creep factor (C_f): 1.12 Creep recovery (E_{rc}): 46%							Pass
6	Modulus of Elasticity in Bending and Bending Strength	EN 15534-1:2014+A1:2017 Annex A	Bending strength	36MPa						Pass
			Modulus of elasticity	3730MPa						
7	Resistance to Indentation	EN 15534-1:2014+A1:2017 Section 7.5	Brinell hardness	64MPa						Pass
			Rate of elastic recovery	53%						
8	Rockwell Hardness	ASTM D785-08(2015) Procedure A	72 R							Pass
9	Single Flame Source Test	EN 15534-1:2014 Section 9.6.1 & EN ISO 11925-2:2020	Exposure Conditions	Edge Exposure			Surface Exposure			Pass
			Specimen no.	1	2	3	1	2	3	
			Whether ignition occurs	Yes	Yes	Yes	Yes	Yes	Yes	
			Whether the flame tip reaches 150 mm above the flame application point	No	No	No	No	No	No	
			The time when flame tip reaches 150mm	/	/	/	/	/	/	
			Whether ignition occurs	Yes	Yes	Yes	Yes	Yes	Yes	
10	Striker Impacted by a Falling Weight	With reference to ASTM D4226-191 Procedure A and client's requirement	Mean failure energy: 13.9J							Pass
11	Swelling and Water Absorption	EN 15534-1:2014 Section 8.3.1& EN 317:1993	Test item	Test item thickness	Width	Length				Pass
			Mean swelling	0.17%	0.01%	0.02%				
			Mean indivudal swelling	0.21%	0.02%	0.03%				
			Mean water absorption	0.05%						
			Max individual water absorption	0.06%						