

## Design Guide

### CLICKDECK PROFILES (JOIST / BEARERS)



28 Profile

55 Profile

110 Profile



### CONTENTS:

**Page 1 : Specifications**  
**Page 2 : Span Tables**  
**Page 3: Component Layouts**  
**Page 6: Connection Details**  
**Page 8: Deck Supports**  
**Page 10: Special Layouts / Fixing Guide**  
**Page 11: Paver Installation**

### CLICKDECK SUPPORTS



Pedestal supports



Post supports

**Cutting:**

We recommend an aluminium or multi material blade used in a dropsaw or grinder.

**Safety:**

Please ensure all PPE is worn

**Foundations:**

Ensure appropriate structural foundation is made under each pedestal or post to support deck loading.

**Engineering:**

General span calculations and engineering is available through us to assist with permits ect. Site specific engineering may be required which can be carried out by a licenced structural engineer.

**Fastners:**

All fixings shall be either stainless steel or B8 coated screws.

**Aluminium contact points:**

Aluminium bolted to concrete - Separated with plastic or EPDM packer (Minimum 2mm clearance to concrete).

Aluminium encased in concrete - Concrete shall not be "rapidset" or contain lime and aluminium to be fully separated by corrosion resistance paint or similar.

Aluminium to steel - Steel to be HDG and packer to separate contact point.

Aluminium to natural ground - 5mm clearance.

**Loadings:**

Standard loading for residential decks under 1m = 2kpa Live load and .2kpa dead load have been used. For all additional loading requirements contact us for a tailored design.

**Project Design:**

Installer shall verify all measurements and install as per relevant building code. This information is for guidance only and does not overrule building codes.

**Attention -** \*Do not overtighten hex screws\* recommended torque 39 Nm

**Aluminium Profiles - Joist / Bearers**



Powdercoated Aluminium Sections

Standard Lengths : 2.4m, 3.6m, 4.8m, 6m

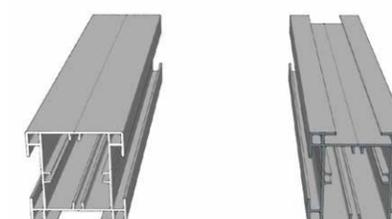
Lowest height achievable = 30mm (Top of frame)

**SURFACE COMPATIBILITY**



- All brands of composite decking
- Natural Timber
- Structural Tiles
- Synthetic Turf
- Yellow Tounge Flooring
- Blueboard and other structural boards
- Many others ...

**JOIST ORIENTATION:**



Flat side UP  
Decking

Flat side DOWN  
Tiling/Paving

**CAN BE BUILT OVER:**

- Natural Ground
- Concrete
- Existing Tiles / Pavers
- Waterproof areas

Site/load specific engineering available on request

Standard Residential deck loading - Class A -  
- 2Kpa Live Load , 0.2Kpa Dead Load , 1.8 KN Point Load\*

Profile	Joist Span (recommended)	Bearer Span (recommended)	Cantilever (max)
28 x 50	600mm	600mm	N/A
55 x 55	1200mm	1400mm	250mm
110 x 45	2100mm	1750mm	500mm

CLICKDECK PROFILE SPAN TABLE (G=0.2 kPa and Q = 2.0 kPa)

Table 1. Joist span table (450mm max. joist spacing  
(L/300 deflection with vibration control)

PROFILE	Max. simply supported Joist span (mm)	Max. continuous Joist span (mm)	Max. Joist cantilever (mm)
55x55	1050	1200	250
110x45	1900	2100	500

Table 2. Joist span table (450mm max. joist spacing  
(L/500 deflection, no vibration control)

PROFILE	Max. simply supported Joist span (mm)	Max. continuous Joist span (mm)	Max. Joist cantilever (mm)
55x55	1400	1600	250
110x45	2400	2500	500

Table 3. Simply-supported bearer span table

PROFILE	Bearer centre-to-centre spacing (mm)			
	1200	1600	2000	2500
55x55	1200	1100	1000	-
110x45	2100	1900	1750	1500

Table 4. Continuous bearer span table

PROFILE	Bearer centre-to-centre spacing (mm)			
	1200	1600	2000	2500
55x55	1400	1200	1100	-
110x45	2200	1900	1750	1500

Table 5. Cantilever bearer span table

PROFILE	Bearer centre-to-centre spacing (mm)			
	1200	1600	2000	2500
55x55	300	300	250	-
110x45	500	500	450	300

Notes:

- All units are in mm
- Joist and bearer is designed to have deflection less than L/300 under UDL load.
- For joist, additional criteria is considered to have deflection no more than 2mm under 1 kN static load for vibration control
- The strength of the profile is analysed in accordance with AS1664.2
- For cantilever span, the backspan of the cantilever must have min. 90% of the span obtained from:  
\* Simply supported span from Table 1 (Joist) or Table 3 (Bearer) if the backspan is not continuous  
\* Continuous span from Table 1 (Joist) or Table 4 (Bearer) if the backspan is continuous
- Table 2 must be used with caution as the vibration control criteria from AS1170.0 Table C1 is not considered hence floor vibration may be apparent.

	Project Span Table for Attached Aluminum Joists and Bearers			Job Ref. 2021618A	
	Section 110x45mm, 55x55mm			Page No/rev. 1	
	Calc. by HW	Date 23/08/2021	Chk'd by AQ	Date 24/06/2021	App'd by AQ

## Design Certificate

Date : 24 August 2021

**ClickDeck Modular Decking system**  
2/5 Kelletts Road, Rowville VIC 3178

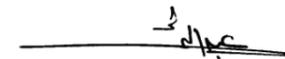
To whom it may concern

### Certificate for Aluminium Joists and Bearers Span Tables

QED Engineers, Practicing Civil and Structural Engineers, hereby certify that we have carried out computations in accordance with proper design principles, and we confirm that that design tables conform to the building code of Australia and the following codes:

AS 1170.1- 2002 Structural design actions – Permanent imposed and other actions  
AS 1170.2 2002 Structural design actions – wind actions  
AS 1664- 1997 Aluminium Structures

Approved by :



**Abdullah Qasemi**

B.Eng(Civil), M.Eng.sc, MIEAust NER, RBP

Tel: +61 468 413 867

Email: [aq@qedengineers.com.au](mailto:aq@qedengineers.com.au)

# COMPONENT LAYOUT

55PROFILE (SHOWN)

## TYPICAL BEARER/JOIST LAYOUT



**JOIST**  
(Supports the deckboard)



**BEARER**  
(Supports the joist)

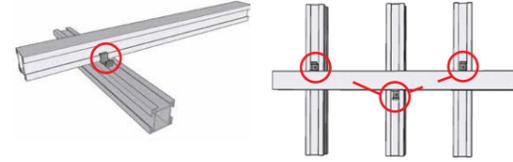


**PERIMETER JOIST**  
(Braces / links the joists together)



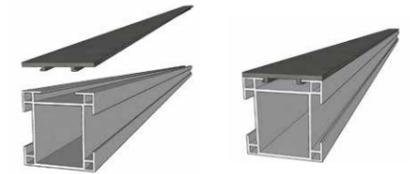
## HOLD DOWN CLIPS

(Holds the Joist to the bearer)  
(1 clip per connection - 25per Pack)



## TILE RUBBER STRIP

Only used when installing pavers on deck.  
(Rubber strip clicks into joist)



Go to Paver installation section  
for more information

## PEDESTAL / POST SUPPORTS

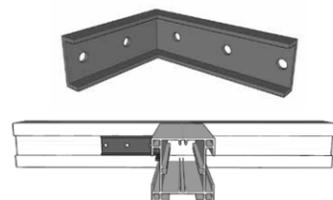
(Height adjustable deck supports)



## CORNER BRACKET

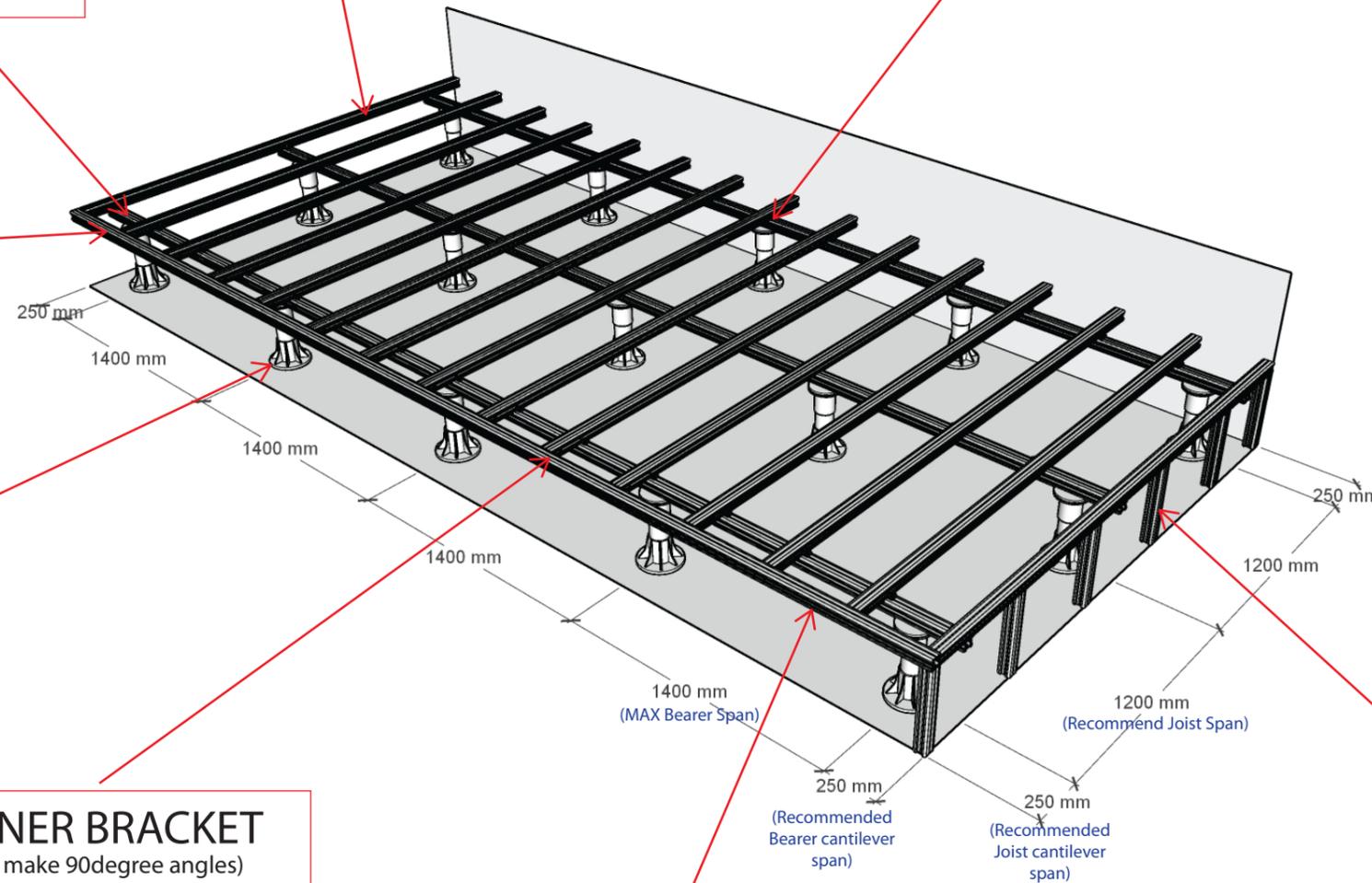
(Used to make 90degree angles)  
(Bent to create any angle)  
(1 per connection - 2 per pack)

Installed at the connection of joist  
to perimeter joist



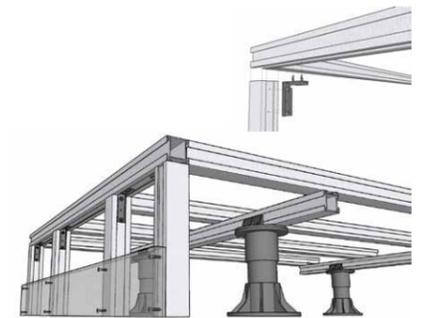
## JOINER

(Used to extend the length of the aluminium)  
(2 per connection - 6 per pack)  
(Only needed if longer than 6m length)



## FASCIA JOIST SUPPORT

(Allows fascia boards to be attached to the deck)  
1. Corner bracket installed under perimeter joist  
2. 55Profile installed in vertical position



# Components



Joiner  
(6 Pack)

Used to join / extend the aluminium profiles  
2 Joiners per Join on 55mm Profile  
4 Joiners per Join of 110mm profile



Hold down Clip  
(25 Pack)

Used to fix down the Joists to the bearers



Corner Bracket  
(2 Pack)

Used to make 90 degree Joins, can be bent to make various angles.  
Also used to make vertical fascia board supports .



Hex Screws  
(250 Pack)

Stainless M10 30mm Hex Screw with washer  
Used to fix all components together



Post Bracket  
( Per bracket )

Post Bracket - Used to support the frame system.  
If concreting post in hole - Only 1 bracket at the top is needed  
If Bolting down to pad - 2 brackets needed, 1 at top and bottom



Tile Rubber Strip  
( Per meter )

Tile Rubber Strip - Used to support structural pavers on our aluminium joist system.



Tile Retaining Clip  
( 25 Pack )

Tile Retaining Clip - Installed around the perimeter of the tile deck to stop Tile/Pavers from moving.

# Pedestals



Adjustable Pedestals

## Pedestal Heights

Model Number	Pedestal Range <small>(All measurements are in millimeters)</small>	Finished Floor Height		
		<small>Including (28profile) (Deckboard/Joist/pedestal)</small>	<small>Including (55profile) (Deckboard/Joist/pedestal)</small>	<small>Including (55Profile) (Deckboard/Joist/Bearer/pedestal)</small>
FX0	10-20	63 - 73	90 - 100	145-155
FX1	25-40	78 - 93	105-120	160-175
FX2	40-70		121-150	175-205
FX3	60-100			195-235
FX4	90-160			225-295
FX5	150-270			296-405
FX4-1	195-280			330-415
FX3-2	275-365			410-500
FX5-1	300-390			435-525
FX4-2	305-415			440-550
FX5-2	410-530			545-665

FX - (\*) Refers to amount of extensions

# TYPICAL 55/110PROFILE ARRANGEMENT LAYOUT



55Profile - (55x55)



110 Profile - (110x50)

## JOIST ORIENTATION:



Flat side  
UP  
Decking



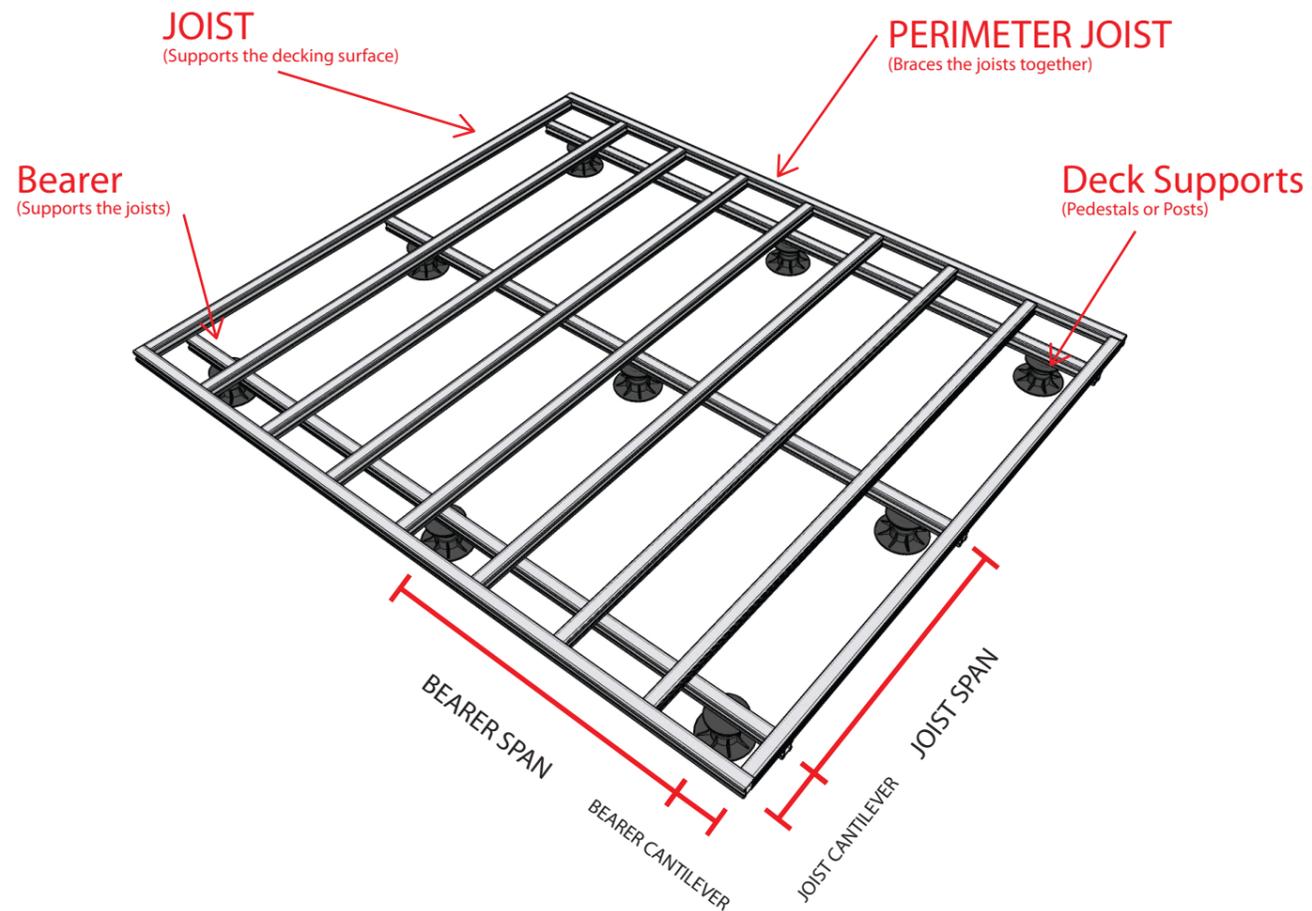
Flat side  
DOWN  
Tiling/Paving

## BEARER ORIENTATION:

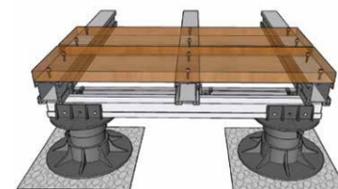
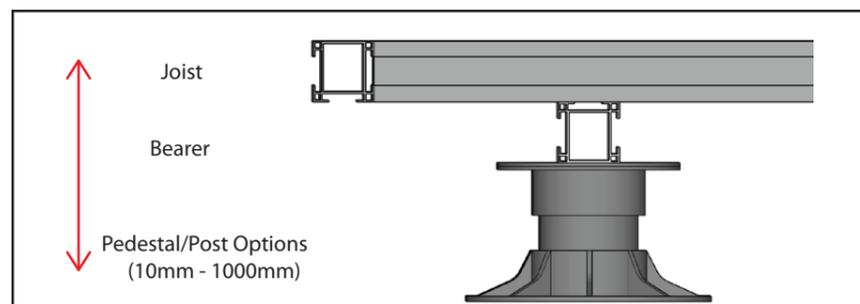


Flat side  
UP

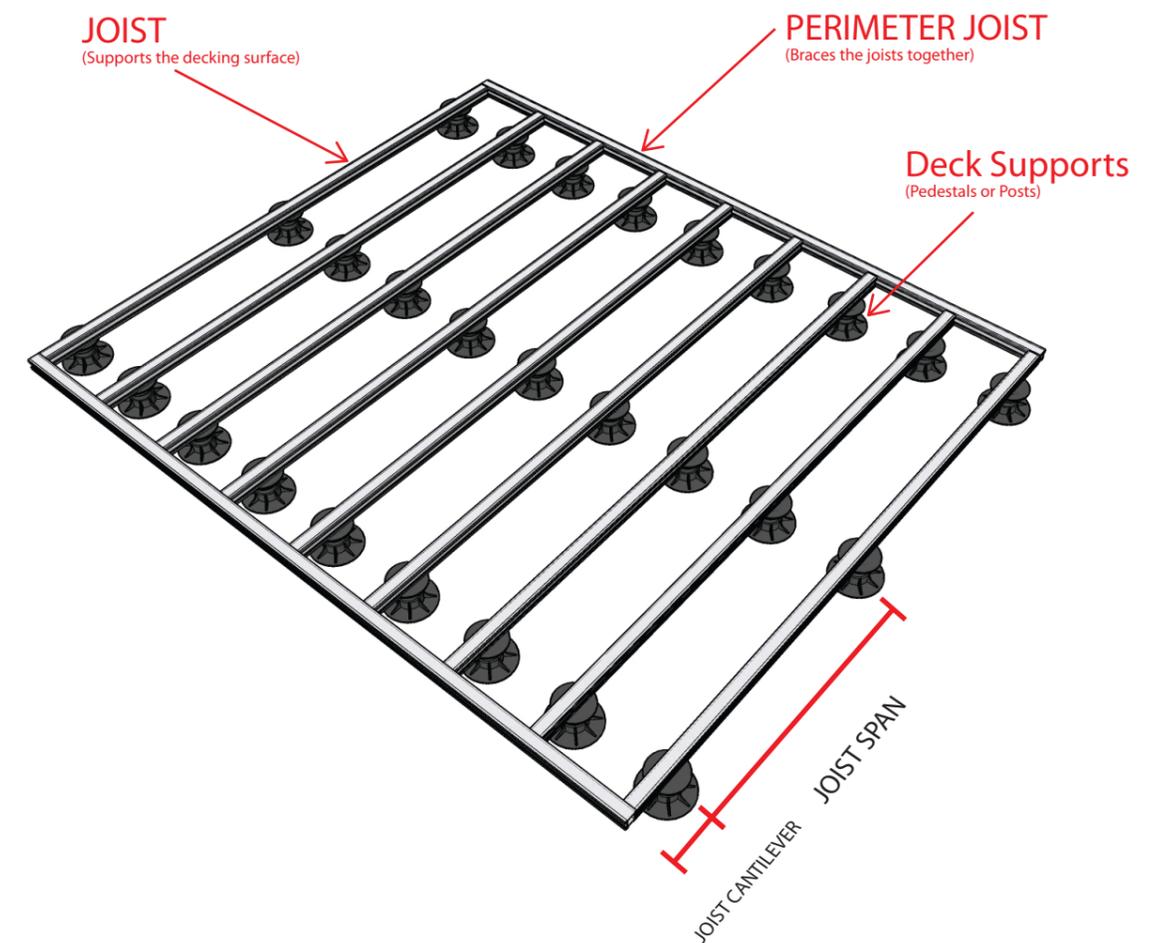
## JOIST / BEARER LAYOUT (>150mm Height)



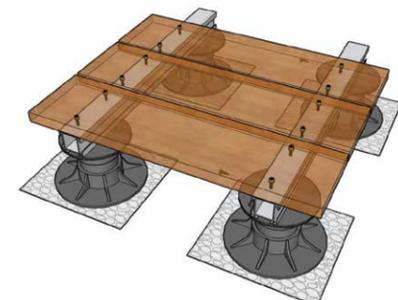
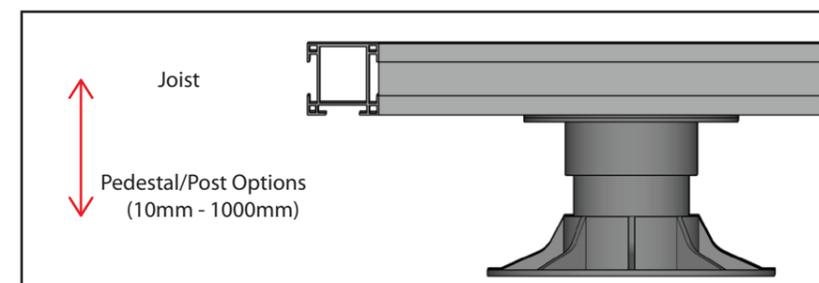
### Height Layout



## JOIST ONLY LAYOUT (<150mm Height)



### Height Layout

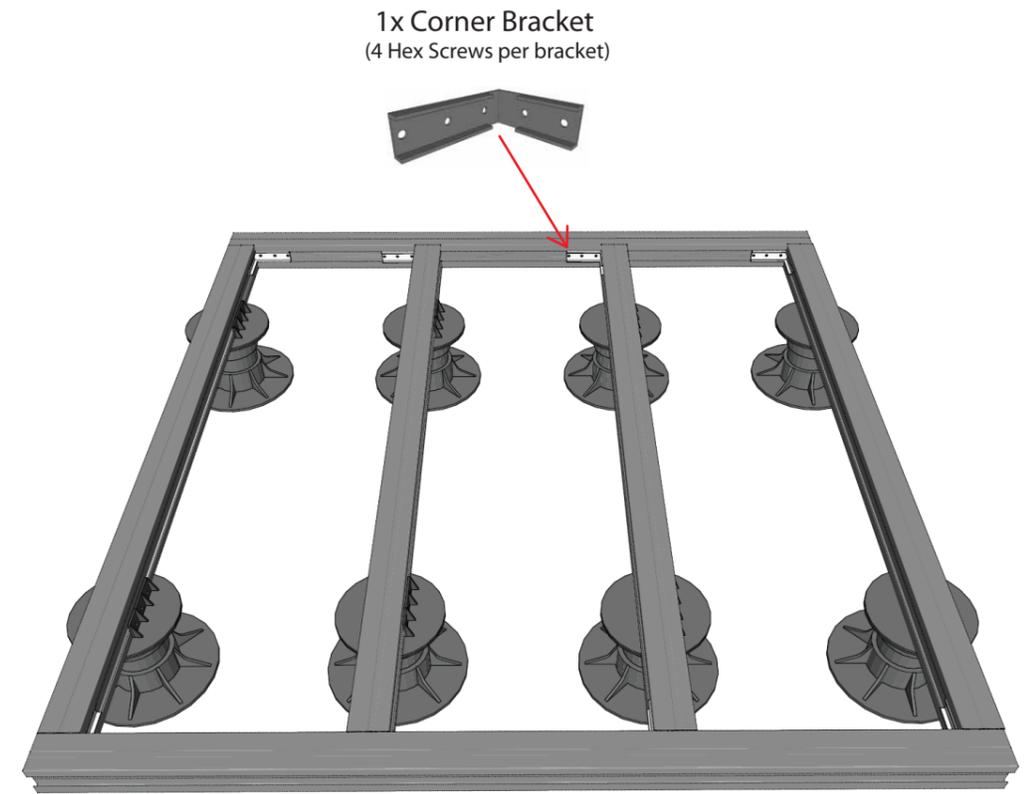
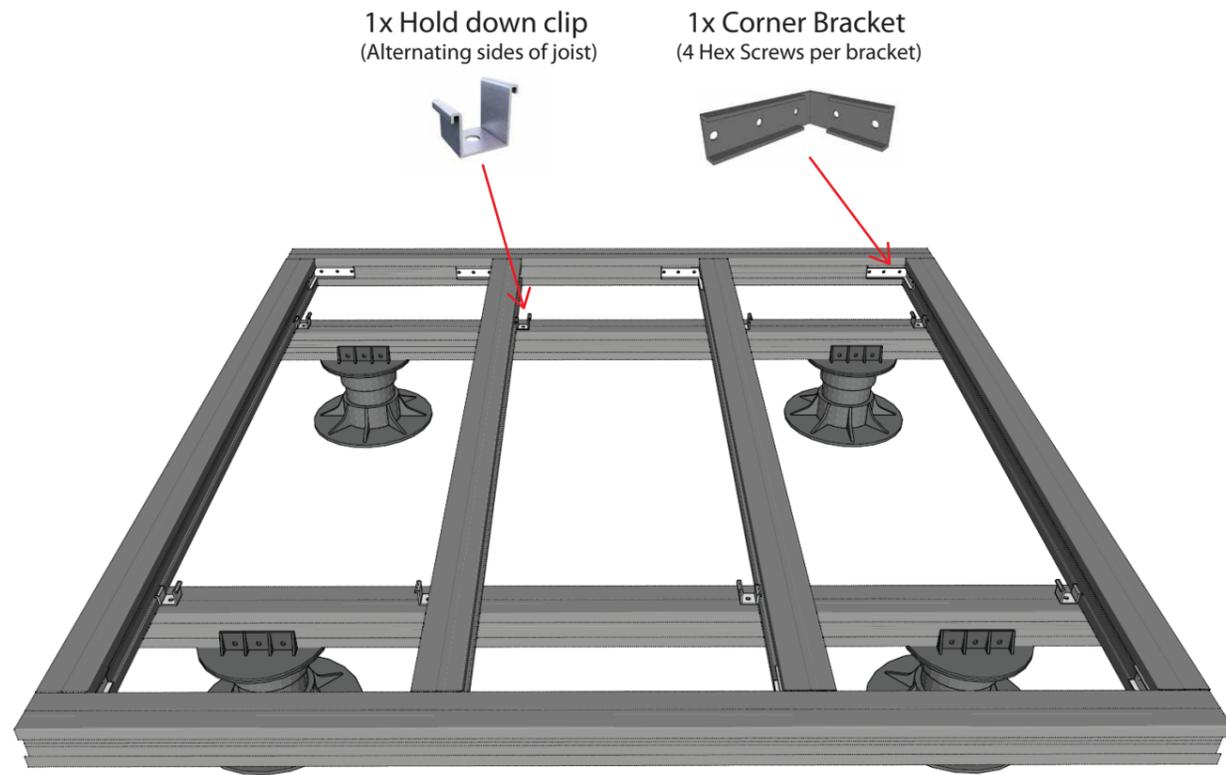


# TYPICAL 55PROFILE ARRANGEMENT LAYOUT

## JOIST OVER BEARER TYPICAL LAYOUT

## FREESTANDING CONNECTION

## JOIST ONLY TYPICAL LAYOUT

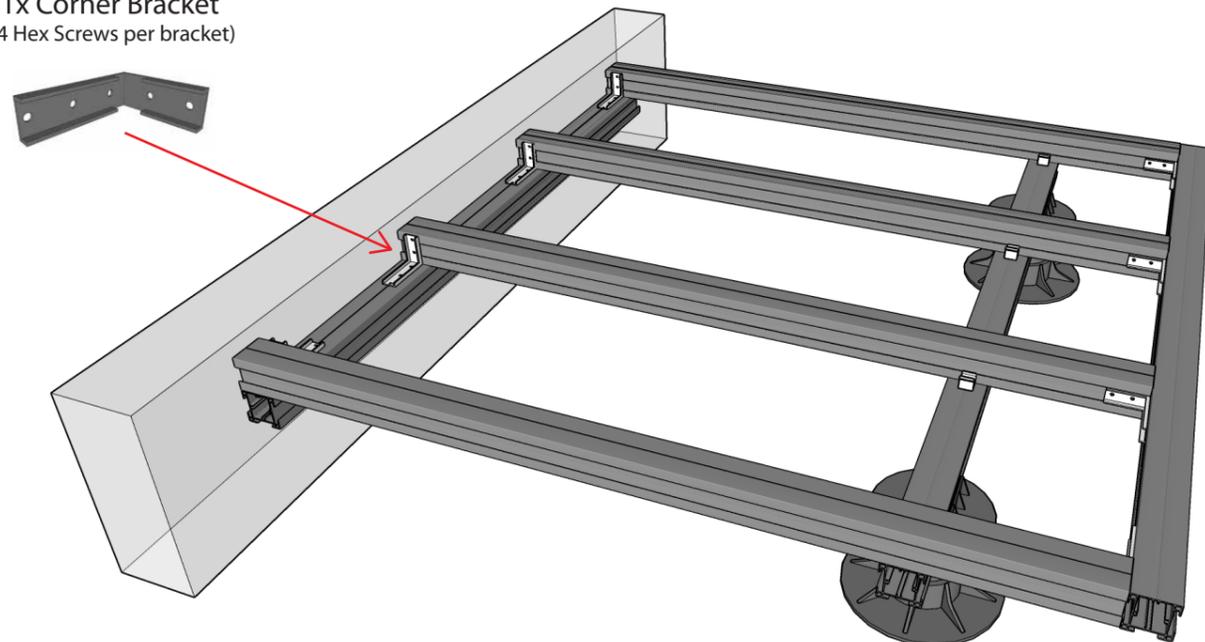


## ATTACHING TO A STRUCTURAL WALL

### LEDGER BOARD/ WAILING PLATE UNDER JOIST LAYOUT

Beam to be fastened to wall at 450mm intervals

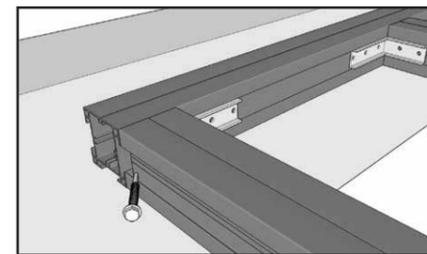
1x Corner Bracket  
(4 Hex Screws per bracket)



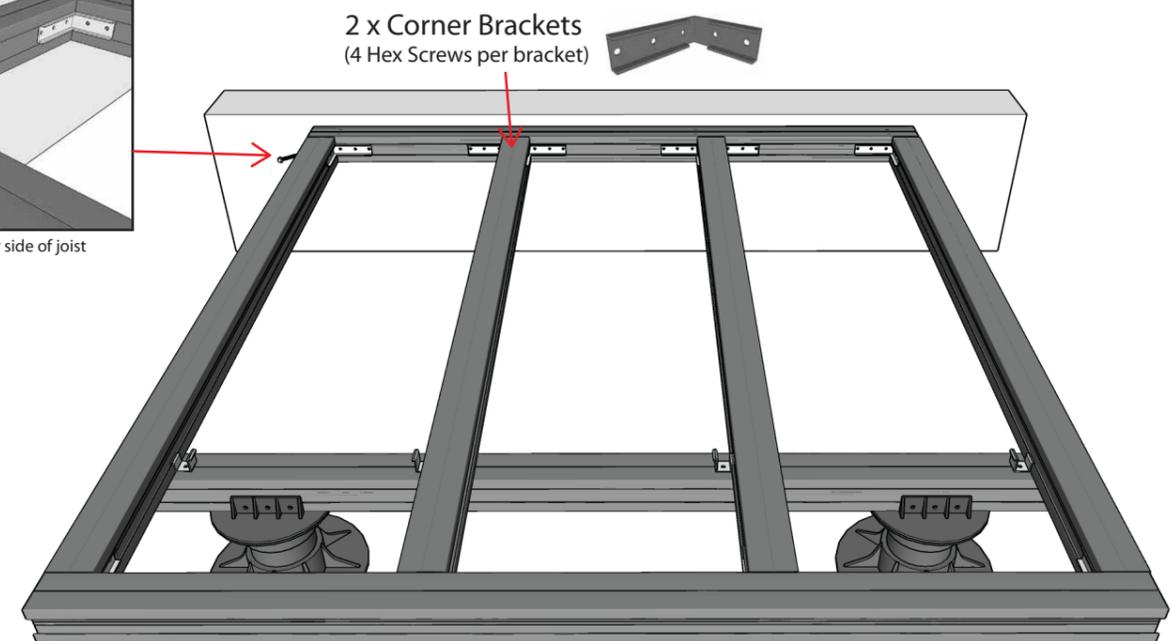
### LEDGER BOARD/ WAILING PLATE INLINE WITH JOIST LAYOUT

Beam to be fastened to wall at 450mm intervals

2 x Corner Brackets  
(4 Hex Screws per bracket)



On end joist, use hex screw on outer side of joist



# TYPICAL 28PROFILE ARRANGEMENT LAYOUT

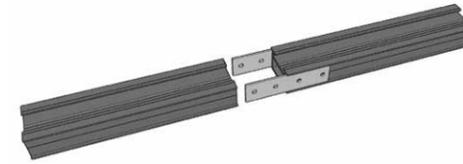


28mm Profile

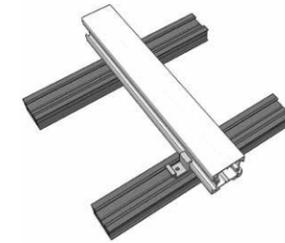
This profile can be used either flat side UP or DOWN



Corner bracket to make angled connections



28Profile Joiner to used to join the profile.

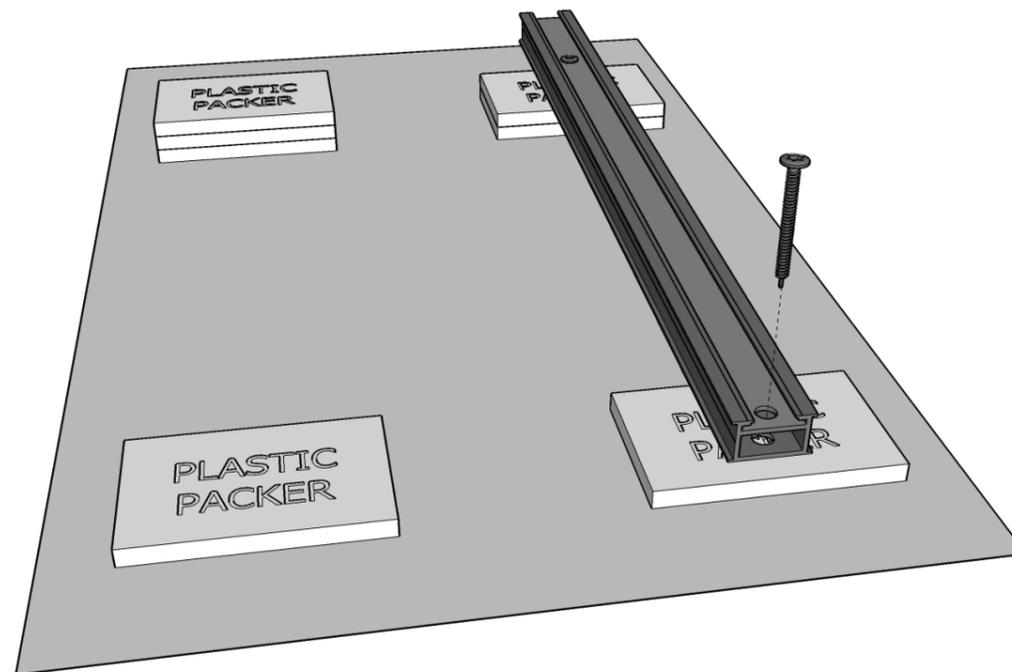


Can be used as a bearer for larger profiles.

## Supporting the 28Profile - Packers



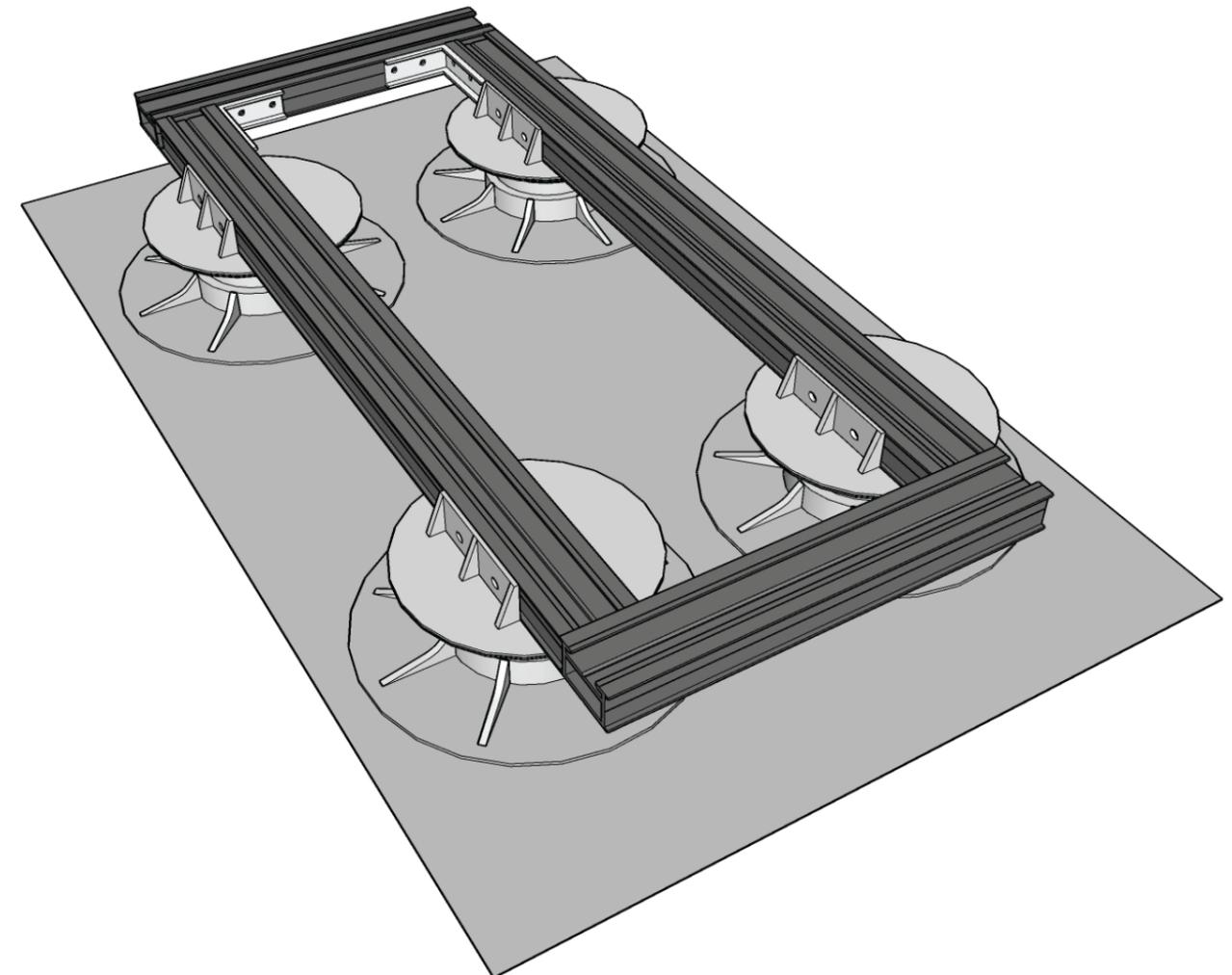
Predrill 28Profile  
(Max 8mm diameter hole)



Use appropriate concrete fixings to secure the 28profile through the packer and into the concrete slab.

**Please note: - Minimum 2mm clearance is required under 28profile**

## Supporting the 28Profile - Pedestals



Clickdeck pedestal system can be used to support the 28profile, its recommended to use perimeter joists to brace the frame.

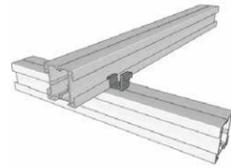
## Hold down Clip

Used to hold down the Joist to the bearer.

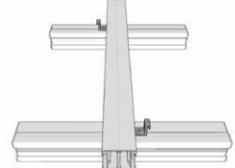


1 Hex screw per clip

55 Profile

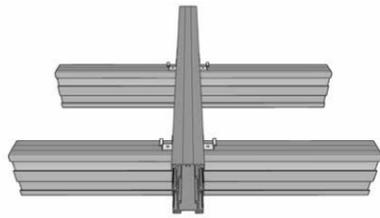


Insert hook into side of profile



Install in alternating sides of joist

110 Profile

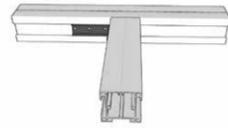


Install on both sides of joist

## Corner Bracket

4 Hex screws per 90° Join  
5 Hex screws per bent Join

55 Profile



Joist to perimeter joist  
(Non direct load bearing)



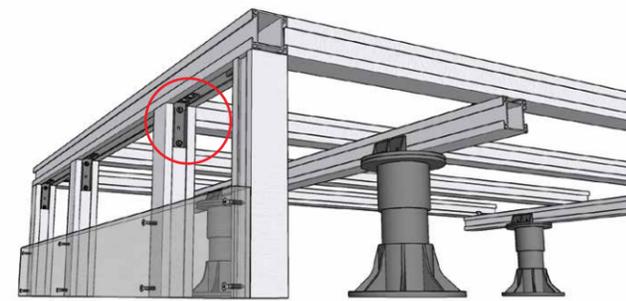
Bent to create angles



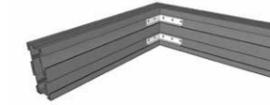
Joist to intergrated bearer  
(2 Corner brackets)  
Used when bearer is inline with Joist



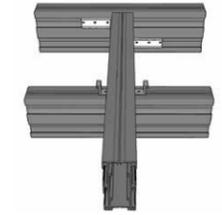
Vertical Joins  
(Allows fascia joists supports to be attached)



110 Profile

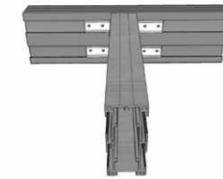


Joist to perimeter joist



Joist to perimeter joist  
Non direct load bearing  
(2 per joist)

This connection is used  
when a bearer is under the joist.



Joist to intergrated bearer  
Load bearing connection  
(4 per joist)

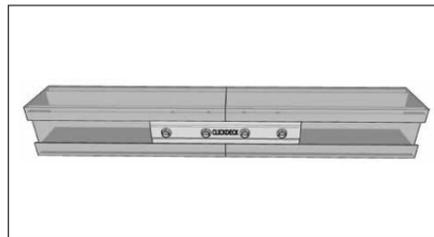
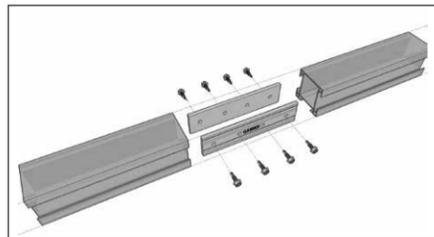
This connection is used  
when a bearer is inline with the joist.

## Joiner

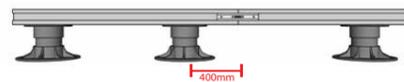
2 Joiners per Join  
4x Hex screw per Joiner



55 Profile



Recommended to have joiners within 400mm of supports

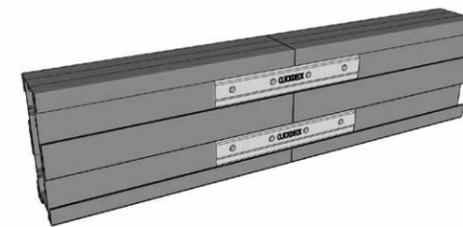
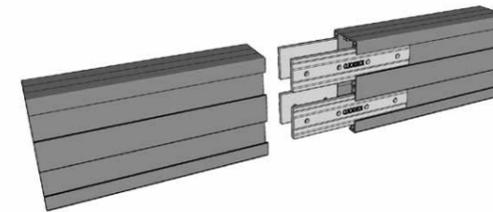


Joiners should **not** be placed on a load bearing cantilever

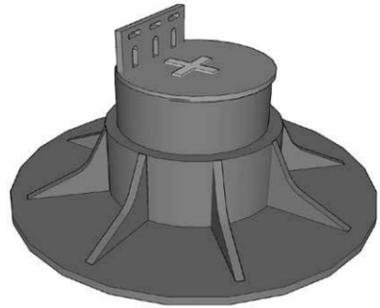


110 Profile

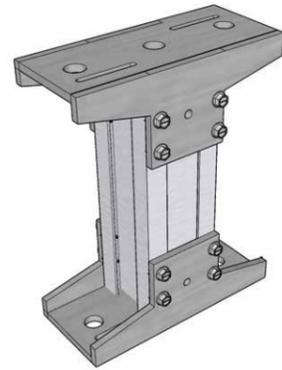
4 Joiners per Join  
4x Hex screw per Joiner



Clickdeck supplies the following options:

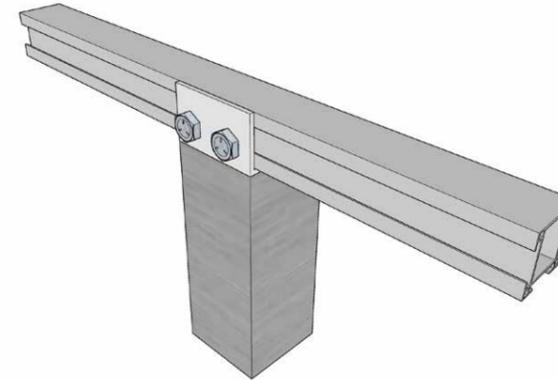


Clickdeck Pedestal

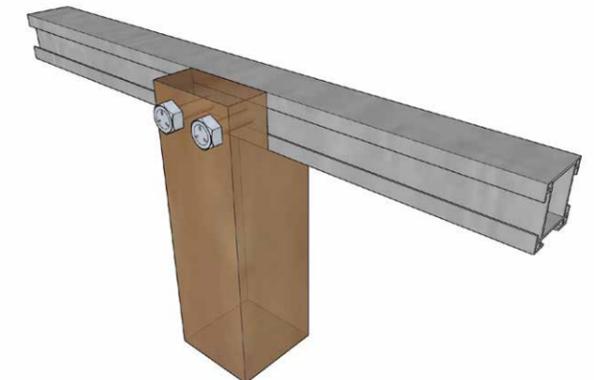


Clickdeck Aluminum Post kit

Clickdeck can also be supported by:

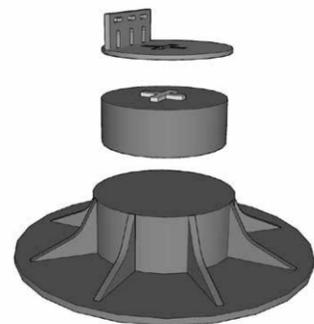
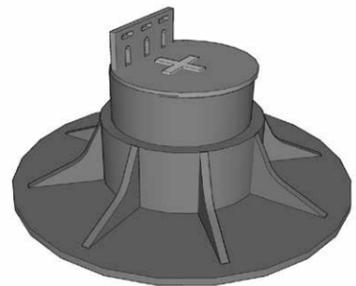


Steel Post



Timber Post

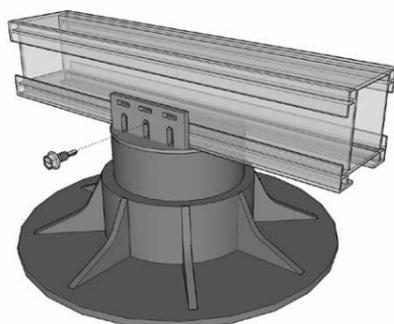
## Adjustable Pedestals



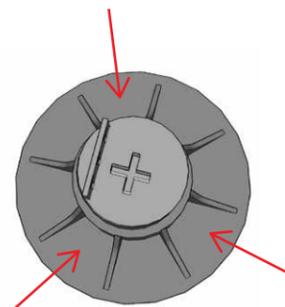
Pedestal Joist Head

Internal thread

Pedestal Base



Fix joist head to aluminium profile (1 Hex screw)



Pedestals can be fixed to ground by using masonry fixings eg, Nylon Anchors / Concrete Screws

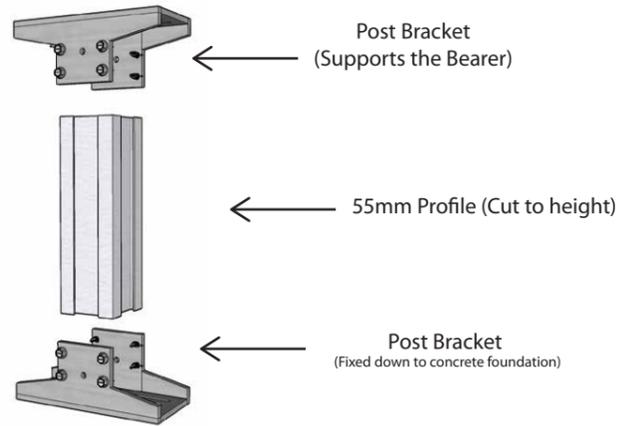
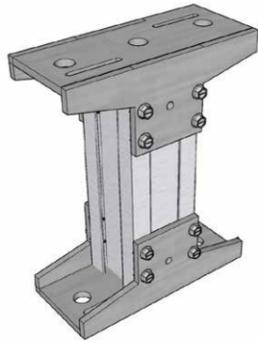
## Pedestal Selection table

Model Number	Pedestal Range <small>(All measurements are in millimeters)</small>	Finished Floor Height	
		<small>Including (Deckboard/Joist/Bearer/pedestal)</small>	<small>Including (Deckboard/Joist/pedestal)</small>
FX0	10-15	145-155	90 - 95
FX1	25-40	160-175	105-120
FX2	41-70	176-205	121-150
FX3	71-100	206-235	
FX4	101-160	236-295	
FX4-1	161-280	296-415	
FX5-1	281-390	416-525	
FX5-2	391-530	526-665	
FX5-3	631-634	666-769	
FX4-5	635-860	770-955	

FX - (\*) Refers to amount of extensions

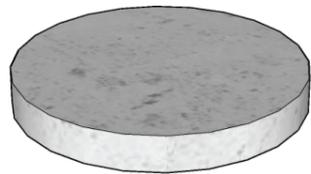
## Aluminium Post

8 Hex Screws per post bracket  
**Max height of post - 600mm**

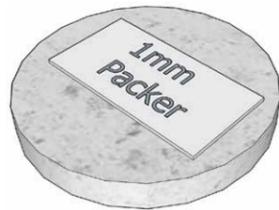


## Note:

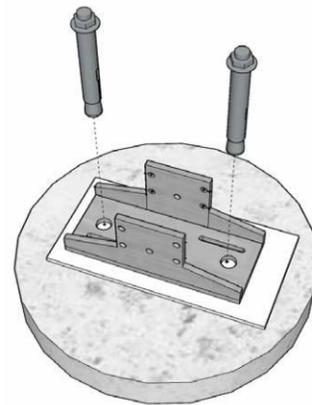
- All deck supports shall have a suitable structural foundation designed by a qualified professional.
- Rapid-set concrete or similar containing lime shall not be used when direct burying aluminium.
- Aluminium must be fully coated by barrier paint or similar and not be in direct contact with in-ground concrete.
- Maximum height for Aluminium post (55mm Profile) is 600mm from Ground level.
- Above 600mm height, a suitable timber or steel post maybe used.
- When attaching post bracket to concrete, an insulating packer or similar must be used to provide barrier between concrete and aluminium.
- It is recommended for the frame system to be attached to a perimeter wall or similar if possible.



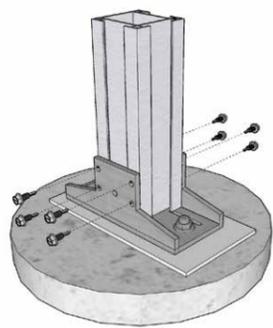
Suitable structural concrete foundation



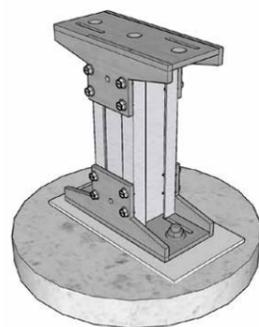
Insulating packer or similar provide barrier between concrete and aluminium bracket



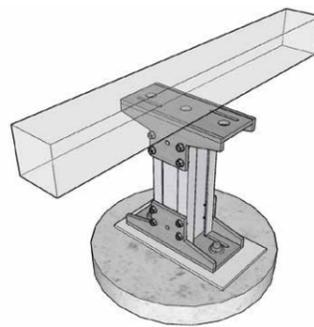
Using suitable masonry fixings attach post bracket to concrete foundation.



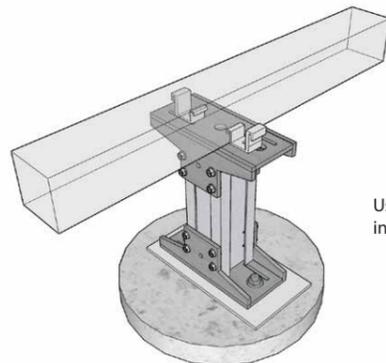
Insert 55mm Profile in bracket (Cut to desired height) secure profile with 8 hex screws



Secure top bracket with 8x hex screws



Place bearer onto post bracket

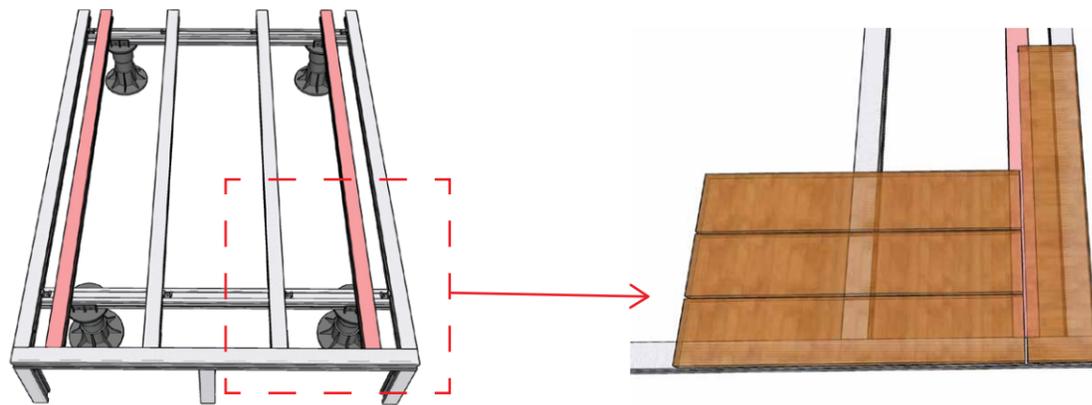


Using 2x Hold down clips, fasten hex screws into post bracket.

**Standard**

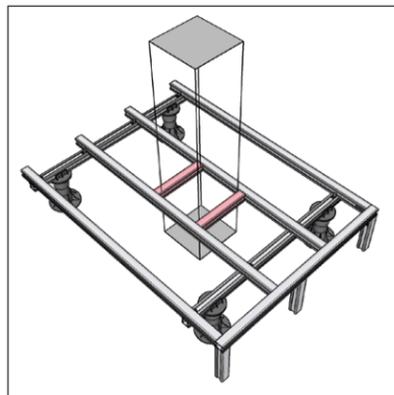


**Breakerboard / Picture frame**

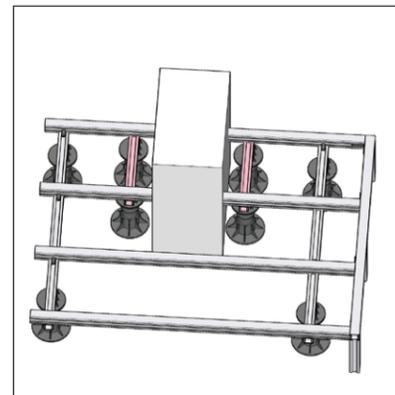
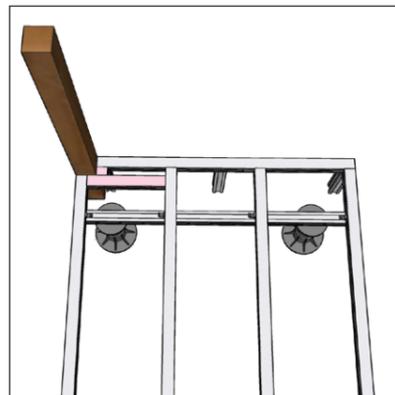


Add additional joists for picture frame

**Obstructions - eg Pillars , pergola posts, downpipes ect.**



Add additional joists for supports around obstructions



Add additional bearers and deck supports

**Composite Decking**

All fixings/screws are supplied by deckboard manufacturer, fixing instructions should be followed. Please consult manufacturer for recommended method.

Clickdeck is universally compatible with all brands of composite decking including:

EKODECK, TREX , AZEK (Timbertech) , MODWOOD, WOODEVO, BRITE DECK , POLIWOOD DECKORATORS, NEWTECHWOOD, FIBERON and many others.

**Typical fixing methods:**

**STANDARD UNIVERSAL HIDDEN T-CLIPS**



**KLEVAKLIP STRIP**



**CAMO X EDGE METAL CLIP**



**COBRA CLIPS**



**Natural Timber Decking**

Eg. Merbau, Spotted Gum ect.

**Recommended:**  
Stainless steel metal drilling screws

**Clickdeck stocks:**



**Anchormark Timber-to-Aluminium screws**



**Also compatible with all:**  
All universal type self drilling screw



Do not use screws with steel wings.

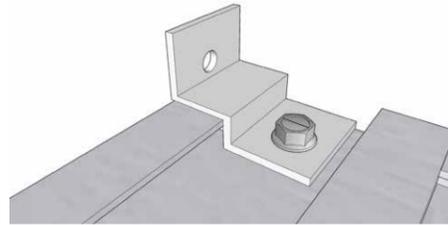
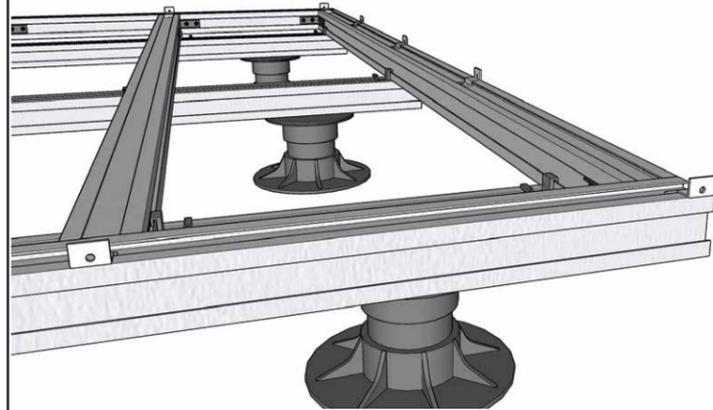
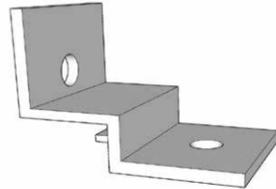
Clickdeck's raised paver solution is a fast easy way to raise floor levels whilst still allowing for a paved finish.

Pavers are typically 20mm or 30mm thick porcelain and are designed for raised applications, please consult paver manufacturer for suitability.

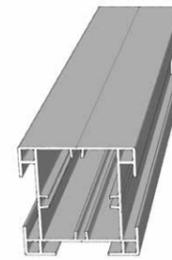
## TILE RETAINER CLIP

Tile retainer clips are used to ensure tiles/pavers are firmly kept from sliding and moving off the frame.

These are used typically at each intersection of pavers along the perimeter of the frame, they can also be used internally to further reduce any movement.



## JOIST ORIENTATION:



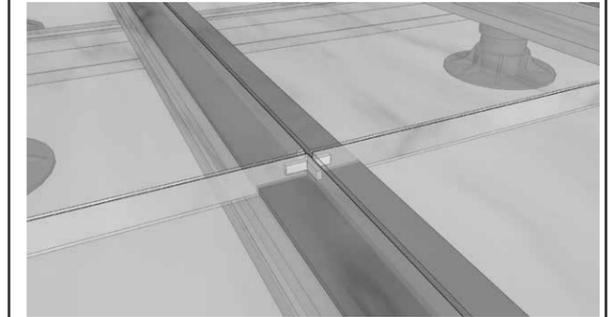
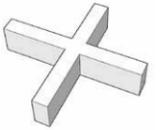
Flat side  
UP  
Decking



Flat side  
DOWN  
Tiling/Paving

## TILE SPACERS

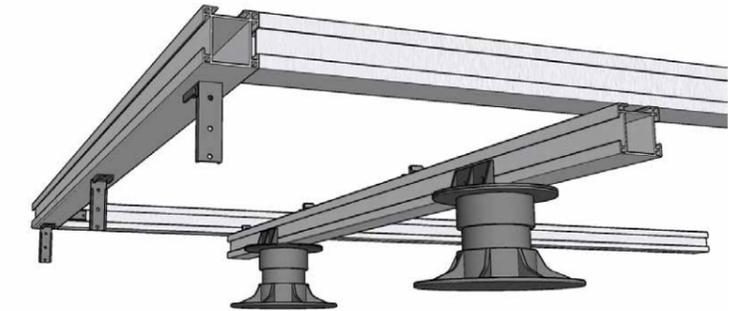
Tile spacers are used at the intersections of the pavers to keep a uniform spacing.



## Fascia support for tiles/pavers

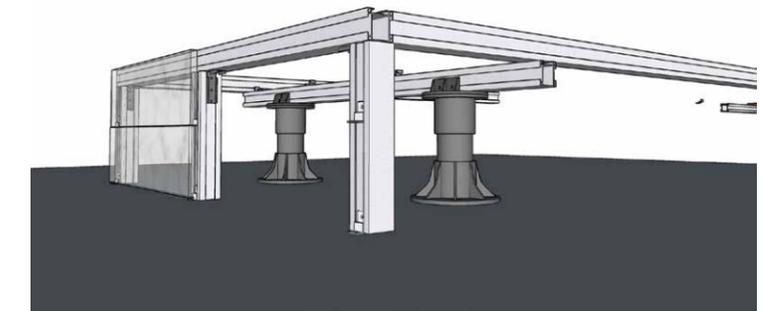
Attach corner brackets to underside of perimeter joists and external joists.

Tip: If building a low height deck, attach your brackets before assembling frame system.



Cut a short length of the 55mm profile to create the fascia support, you can then attach tile retaining clips to assist the weight of the tile.

These tiles must be glued using tile glue.



## RUBBER TILE STRIP

For all installations where tiles/pavers are laid on the clickdeck system, our rubber tile strip is used to provide a non slip surface and noise barrier between the aluminium and pavers.

This simply press fits into the recessed channel as show below.

This is inserted for all joists and perimeter joists .

