

The image shows a wooden deck with a glass railing. The railing is made of grey metal posts and a clear glass panel. The deck is made of light-colored wooden planks. Below the deck, the metal joist system is visible, including joists and supports. The background shows a stone wall on the left and a grey concrete base for the railing.

millboard

Live. Life. Outside.

Installation Guide for
DuoSpan™ Joists & **DuoLift**™
Joist Supports

Considerations

Considerations should be made prior to starting installation on the design of the deck:

Does it include edging, a board or Bullnose Board around the perimeter?

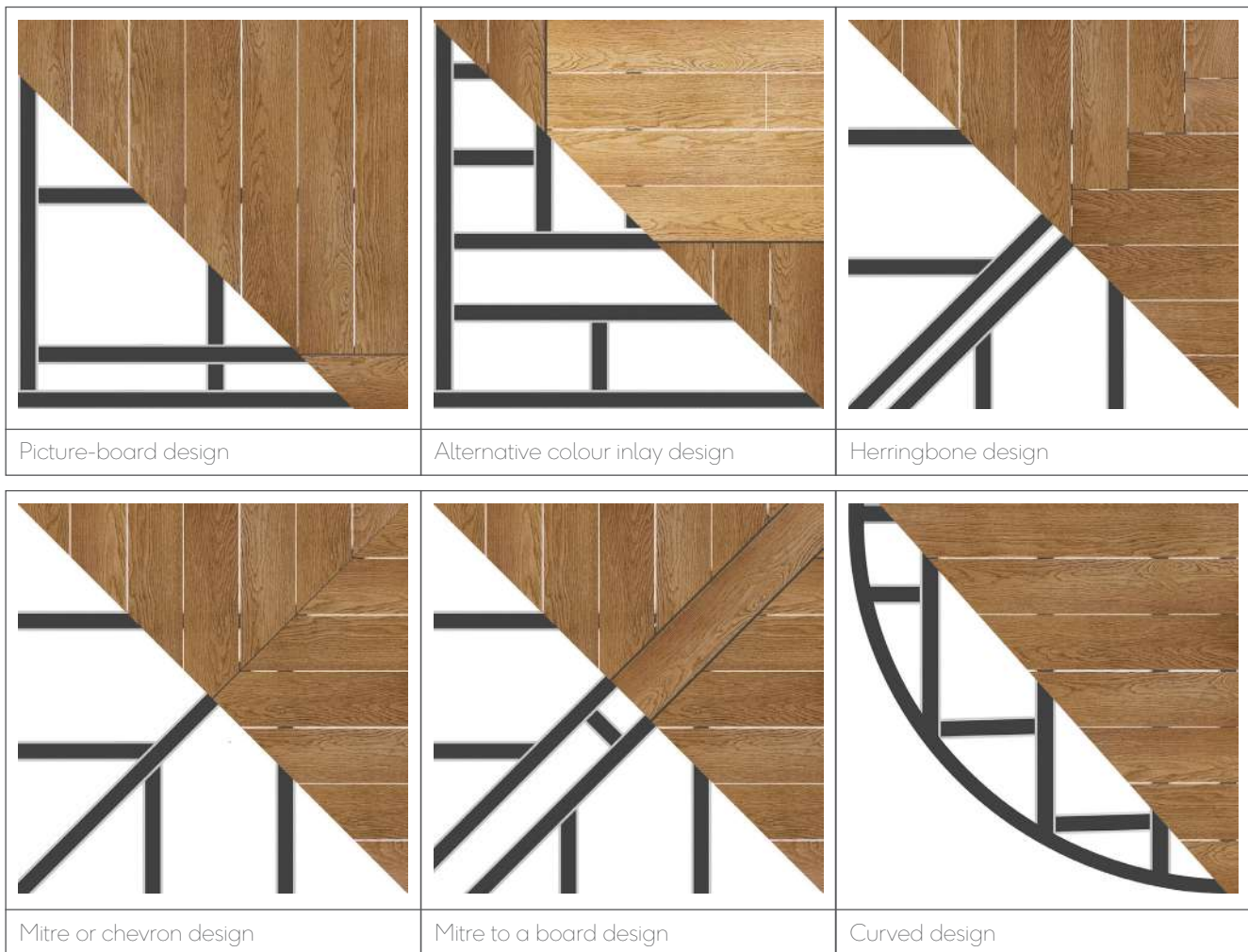
Does the design include area to be split up in different sections?

Are the boards being laid at 90 degrees or 45 degrees?

Are the boards being laid with a herringbone or a mitre?

Does the deck have a curve?

Does it need to have access hatches for drainage outlets etc?

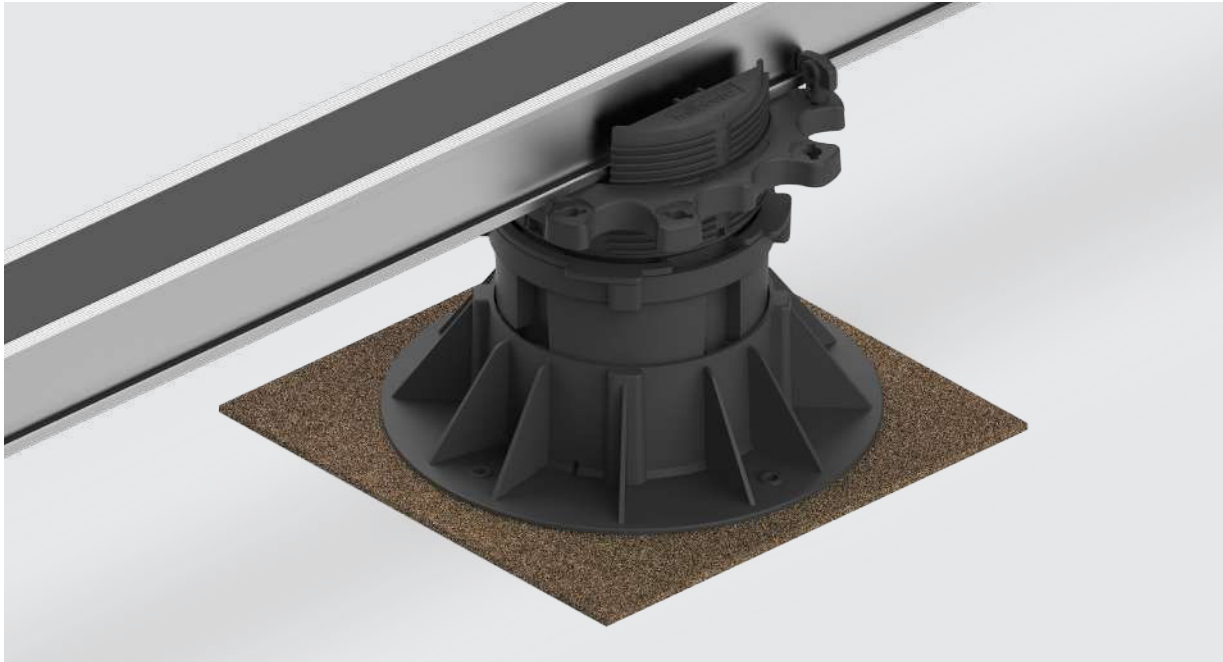




DuoSpan™ Joists & DuoLift™ Joist Supports Installed over solid surfaces

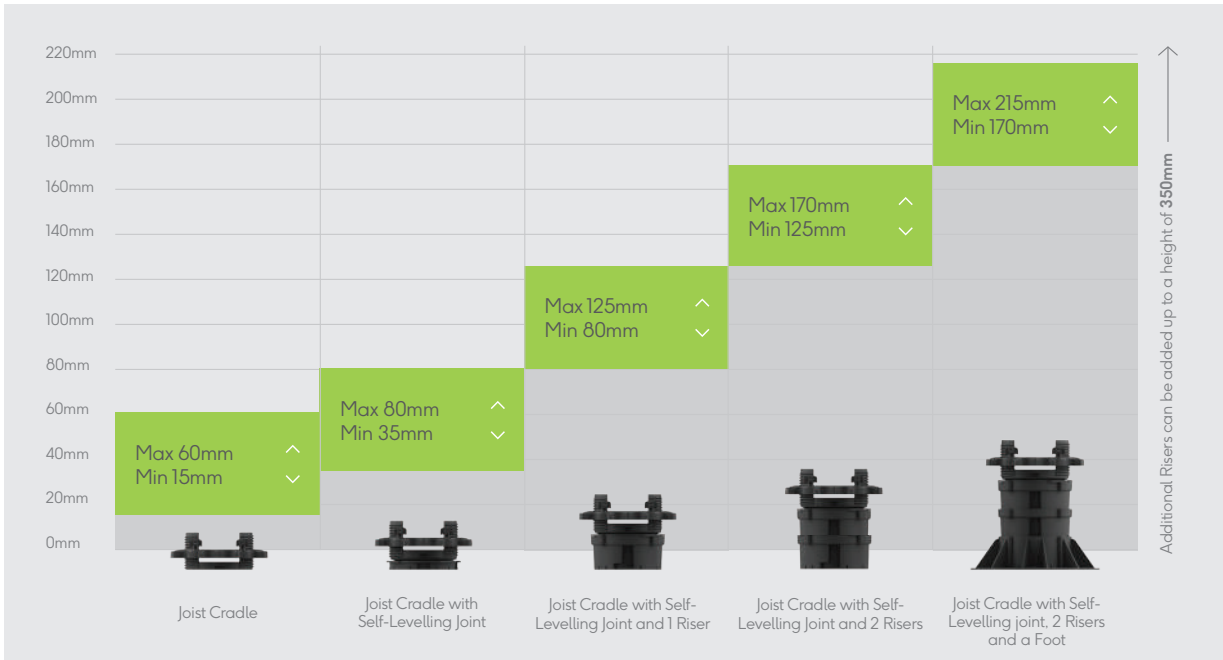
Simple guide for installing DuoSpan Joists with DuoLift Joist Supports, to be read in conjunction with the Millboard Installation Guide when using Millboard decking boards.

1



- DuoLift Joist supports require a substrate that is solid, stable and structural (i.e. suitable roof terrace or concrete base, not directly onto soil).
- If the substructure is a flat roof with a membrane we recommend that a DuoLift Acoustic Separation Pad is laid under the DuoLift support first to protect the membrane.

2



- Firstly decide the correct overall height for the decking from the substrate.
- For an overview of typical heights under the Joist please see the diagram above, the heights stated are from the substrate to the underside of the Joist.
- When using the DuoLift Acoustic Separation Pad, add 3mm onto the height.

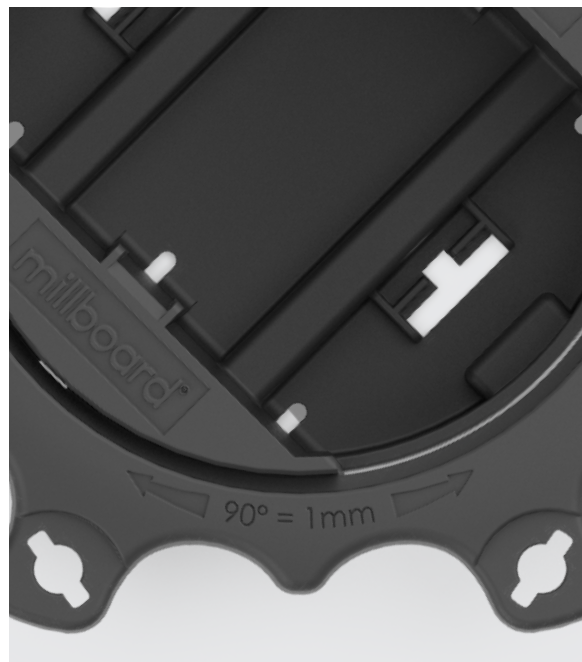
3

15-60mm DuoLift Joist Cradles



- The DuoLift Joist Cradles are assembled by winding the adjustment ring anticlockwise onto the top of the Cradle until it 'clicks', then turn the ring clockwise to the correct desired height. The ring must sit level on the cradle.

4



- Start turning the ring to roughly the correct height, the cradle has 5mm markings on the side to help achieve the correct height **B**.
 - A quarter of a turn is 1mm height adjustment.

5a

20mm DuoLift Self-Levelling Joint



- The DuoLift Joist Cradle is clicked into the dome of the DuoLift Self-Levelling Joint.

5b



- This is then sat into the seat of the DuoLift Self-Levelling Joint.
- This will suit any slope up to 5 degrees or a 1:12 fall in any direction.

6

20mm DuoLift Self-Levelling Joint & one 45mm DuoLift Riser



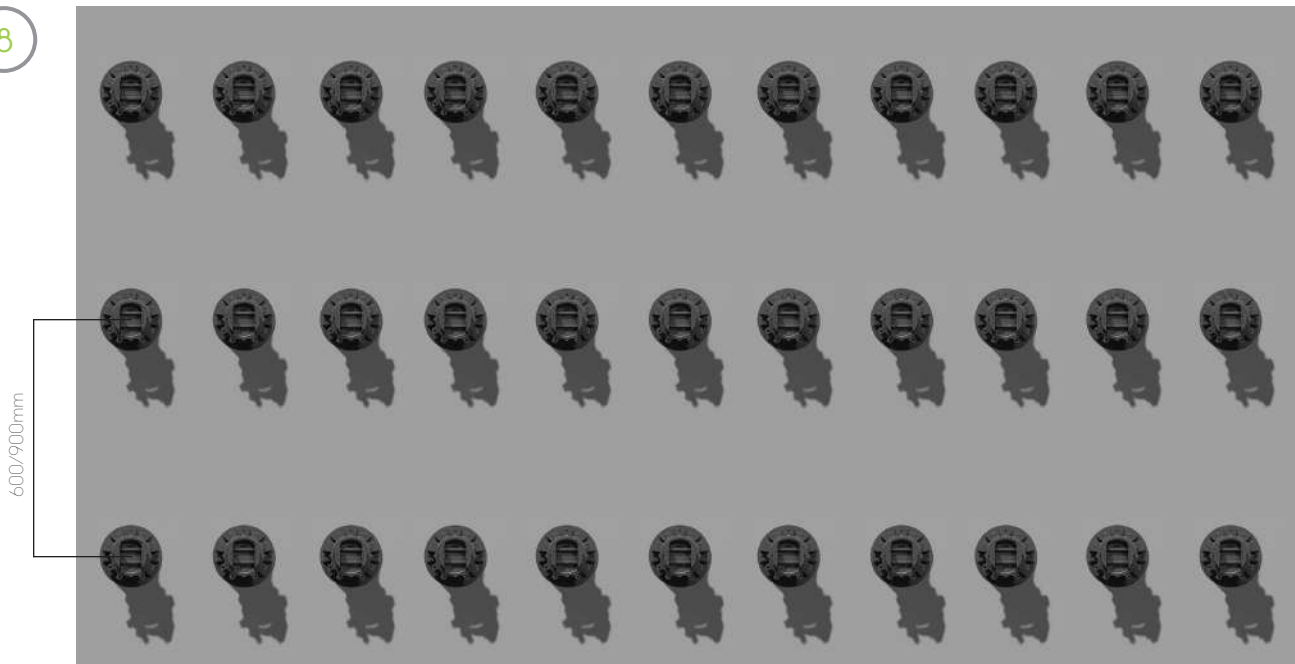
- The DuoLift Self-Levelling Joint has to be used in between the DuoLift Joist Cradle and the DuoLift Riser or Foot, this is lined up with the Riser or the Foot then turned clockwise to click into place.

7



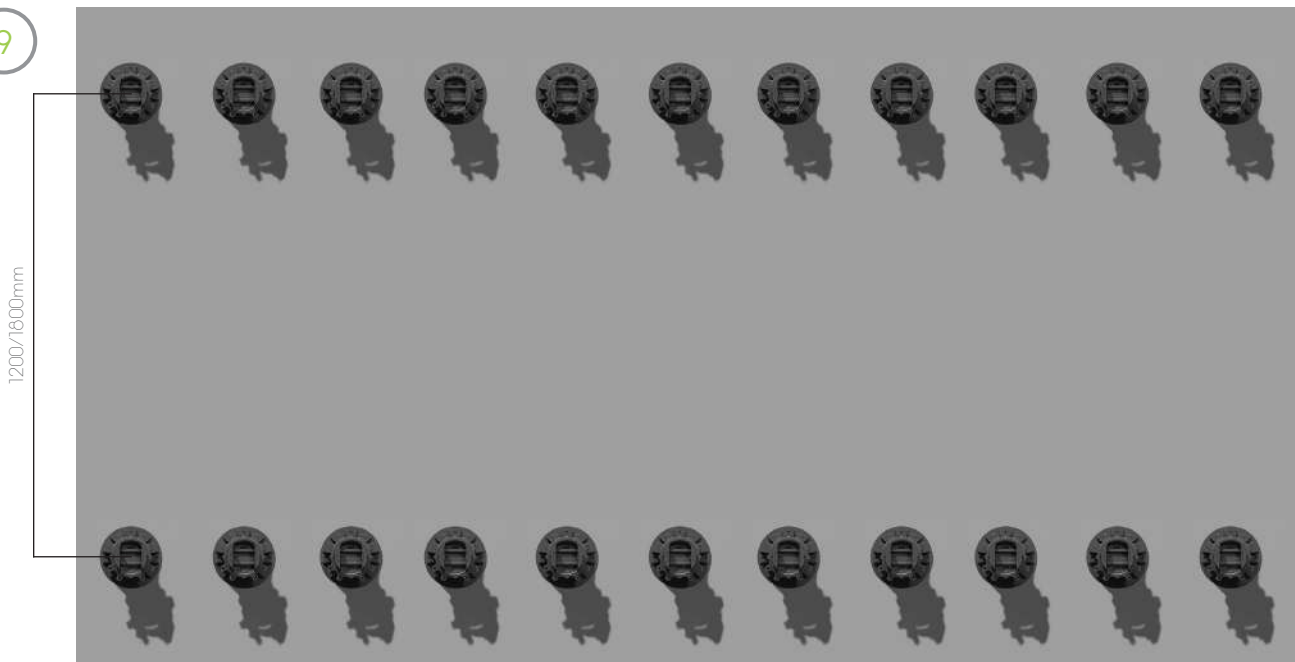
- The DuoLift Risers can be used directly on top of each other to a maximum overall height of 350mm.
- For added stability the DuoLift Foot must be used after two Risers are used.
- Once all of the risers are in place the lugs on the outside should be in line C.

8



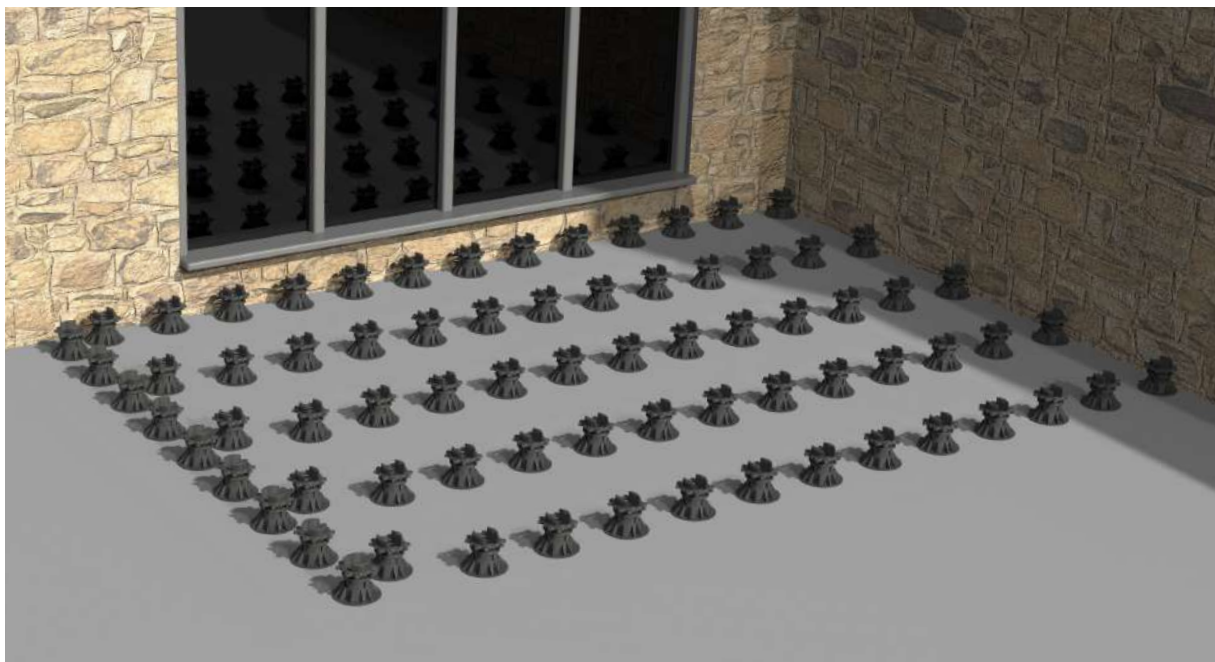
- For the DuoSpan 51mm Joist the DuoLift supports need to be set at 900mm centres along the Joist for residential applications, 600mm centres for commercial applications.

9



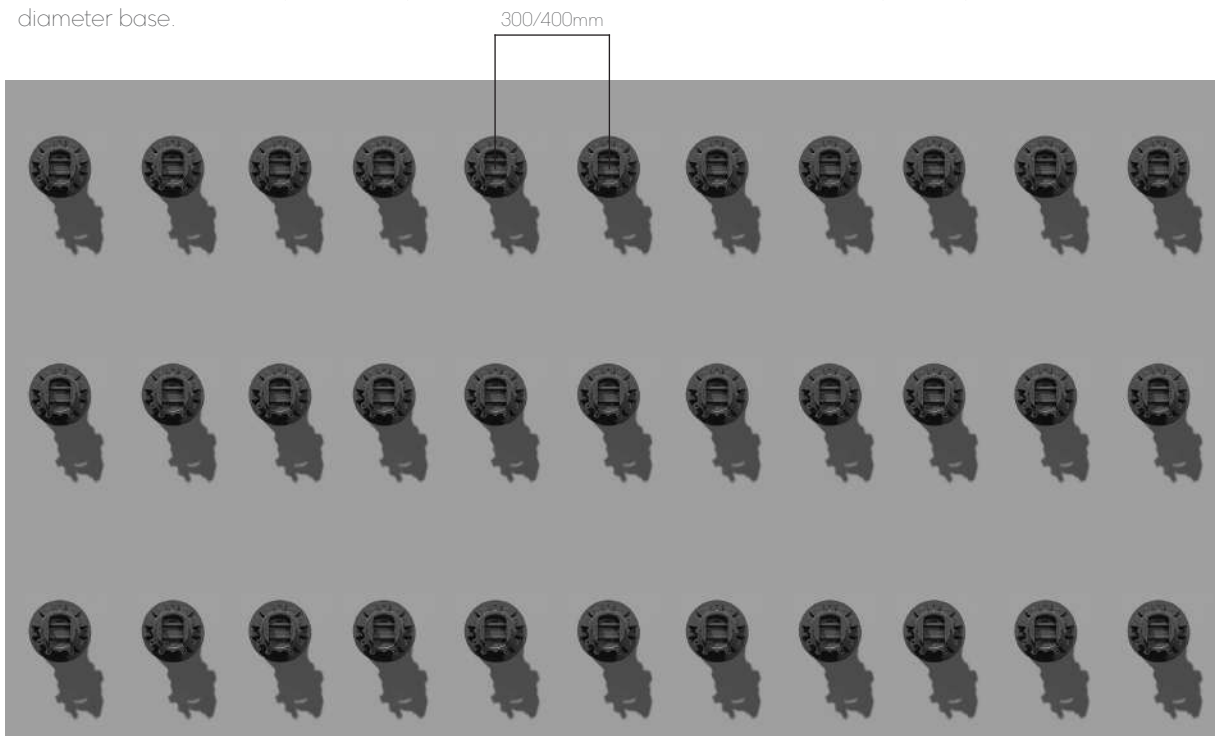
- For the DuoSpan 99mm Joist the DuoLift supports need to be set at 1800mm centres along the Joist for residential applications.
- The maximum recommended span for commercial applications is 1350mm, however as the Joists are 3600mm long it is more efficient to set the DuoLift supports at 1200mm centres.
- Whilst these are our recommended spans full loading tables can be found on - www.millboard.co.uk/duospan

10



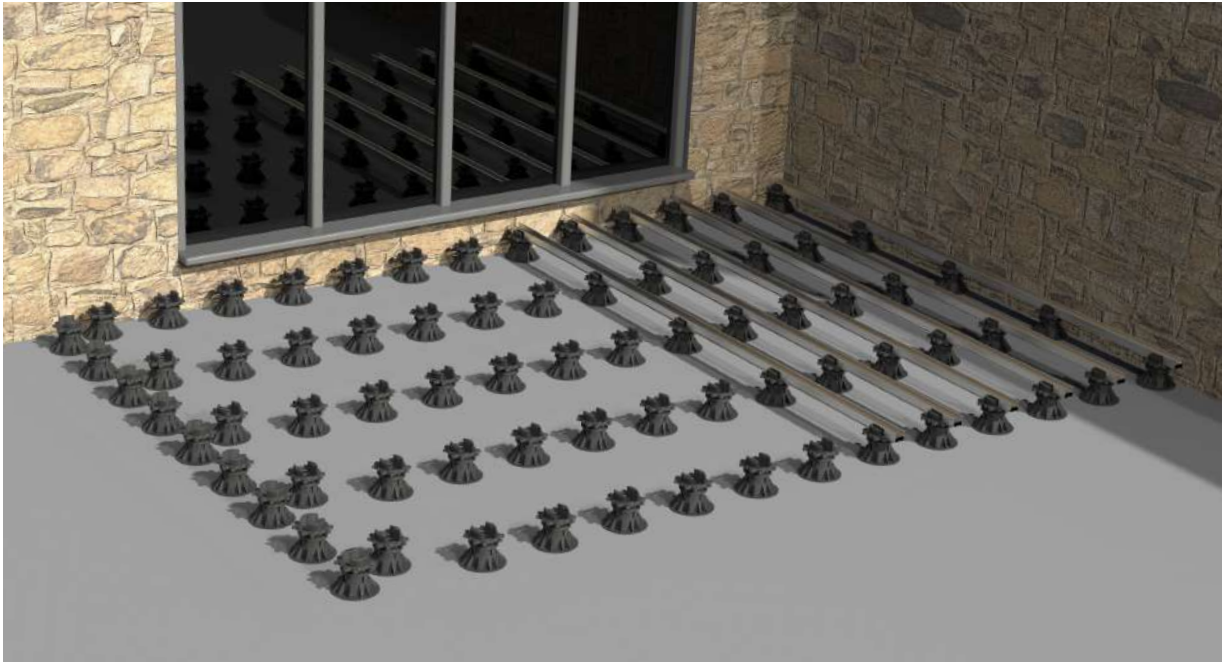
- When installing on a roof terrace/balcony, point loading on the membrane/insulation should be taken in to consideration when using the DuoSpan 99mm Joist.
- As the DuoLift Joist Cradle, Self-Levelling Joint and Riser all have a 114mm diameter base, we would suggest the spans are reduced to 900mm for residential and 600mm commercial.
- If the DuoLift Foot is being used the spans can be increased to 1800 & 1350mm respectively due to its 220mm diameter base.

11



- For a residential application we recommend the Joists are set at 400mm centres, for a commercial application we recommend the Joist centres are reduced to 300mm.
- This is based on the boards being set at 90° to the Joists, if they are at 45° to the Joists the Joist centres need to be reduced to 300mm and 240mm respectively.
- Please note these are the recommendations for if Millboard decking is being used, if an alternative decking product is being used the Joists spacing may be different according to their specifications.

12



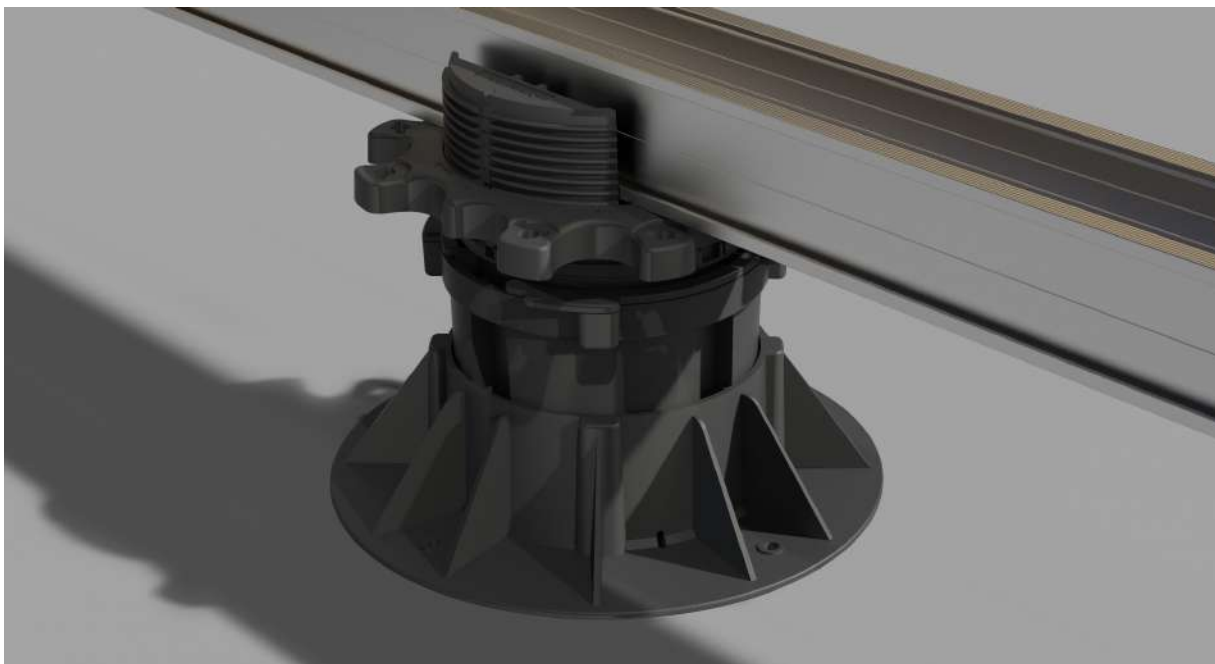
- The DuoSpan Joists can then be laid into the DuoLift supports, with the channel part of the Joist at the top.
- The DuoSpan Joists can be cut using a mitre saw with an aluminium cutting blade.
- Alternatively they can be cut in situ with a cut off saw with an aluminium cutting disks, do not use the same disk that has been used to cut steel as this could shatter the disk.
- When cutting the Joists we recommend that FFP3 dust masks, gloves, goggles, and noise-reducing ear pieces are worn.

13



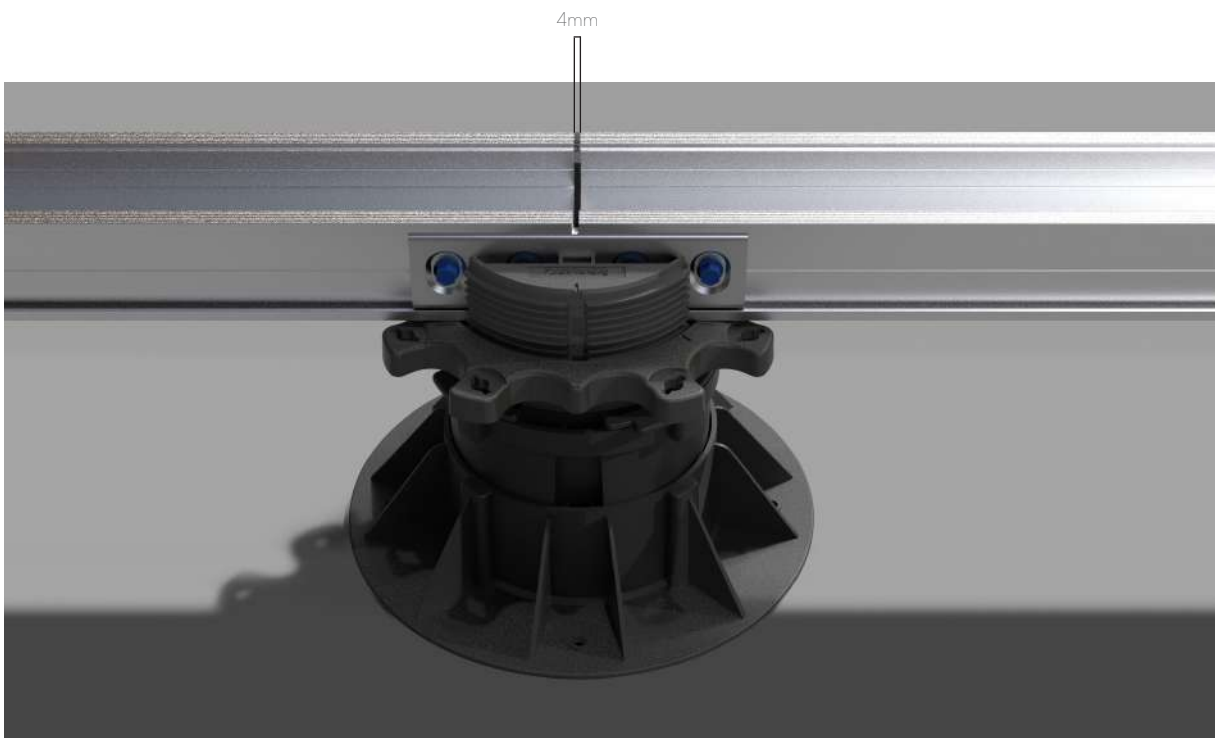
- The DuoSpan Joists need to be spaced 10mm from any fixed item (walls, door sills).
- The Joist can be fixed into a wall for stability if required using stainless steel frame fixings (maintaining the 10mm gap).

14



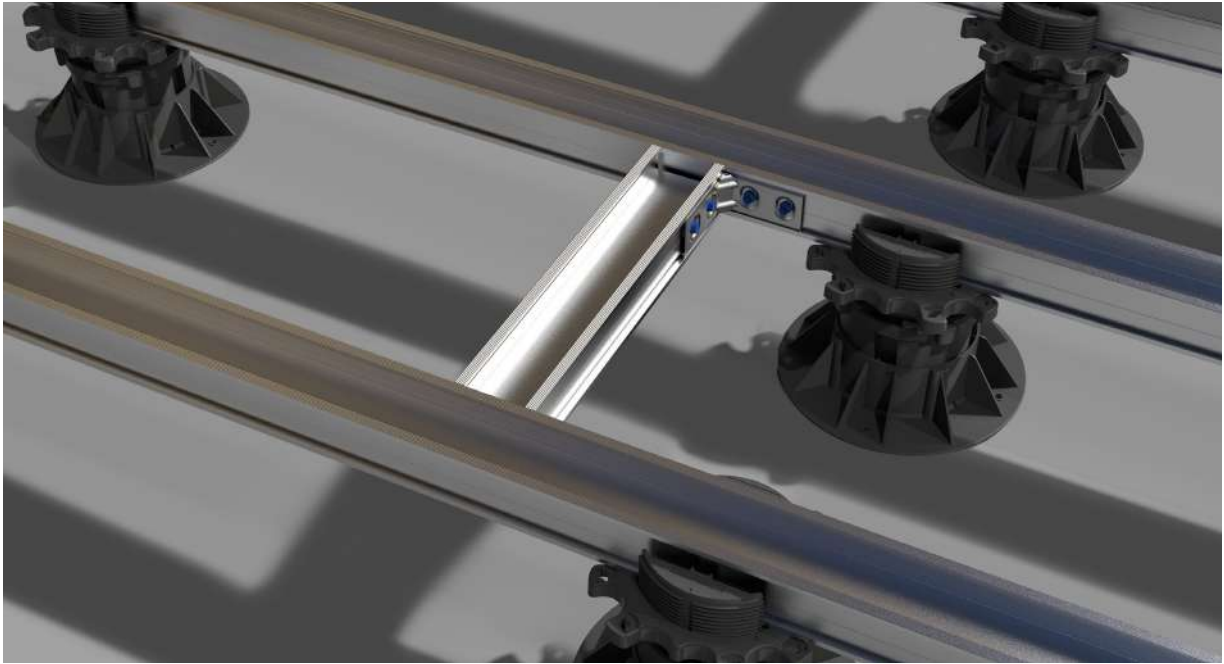
- As the Joists are laid out check the heights of the DuoLift supports – if necessary turning the adjustment ring up or down.

15



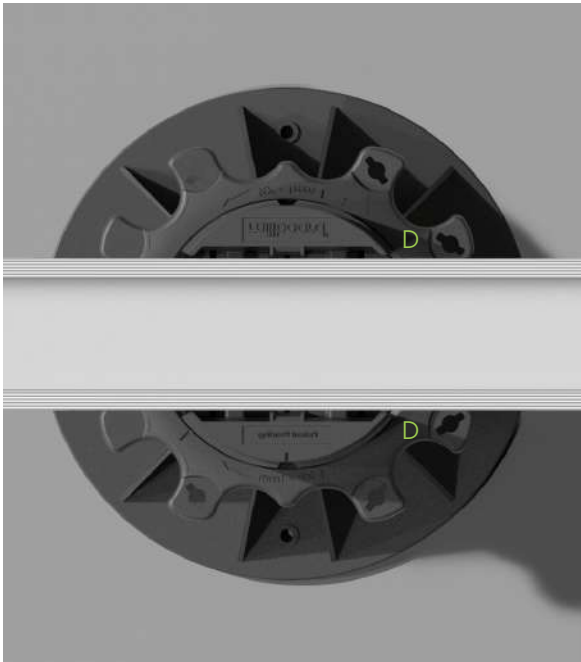
- When joining two lengths of DuoSpan Joists together a DuoSpan Straight Connector is needed, with a 4mm gap between butt ends.
 - These joins must be supported underneath by the DuoLift support unless used around the perimeter.

16



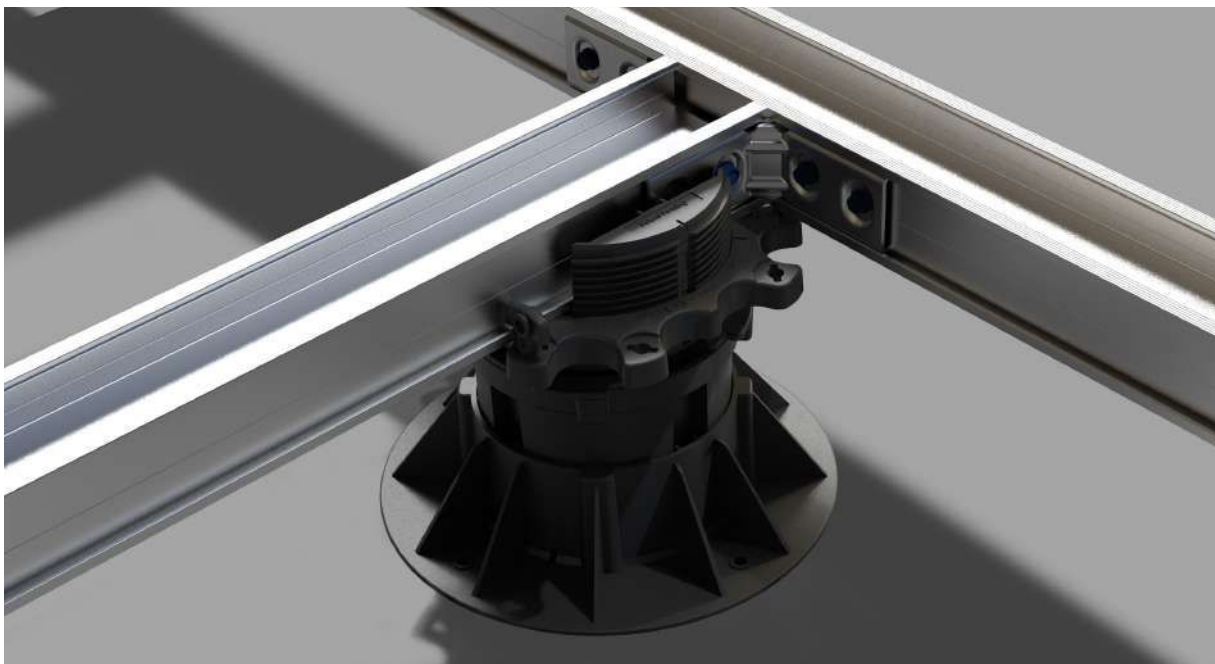
- Noggins are recommended for joist lengths over 3.6m not attached to an outer frame, used in areas where there may be the potential risk of imposed loads causing buckling or twisting of the Joists.
- The noggins are installed with a DuoSpan 90° Angle Bracket either side of the noggin.

17



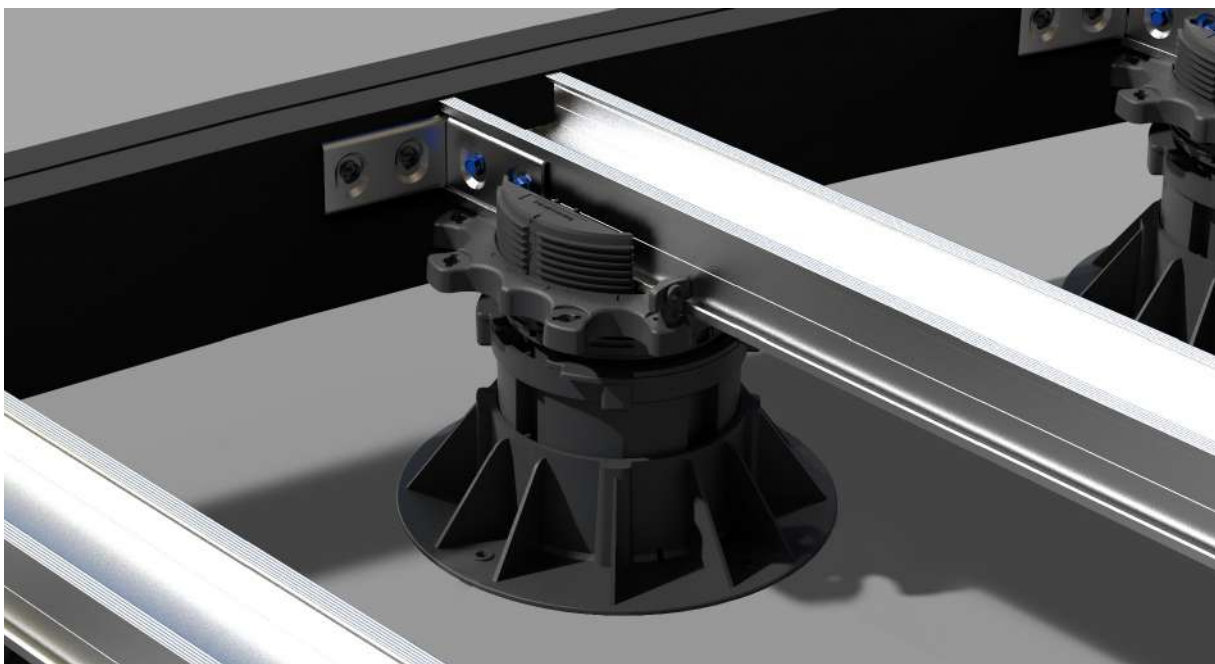
- Once the DuoSpan Joist is fully supported and in-between the shaded areas on the ring **D**, the locking tabs should be inserted into the adjustment ring with one either side of the joist.

18



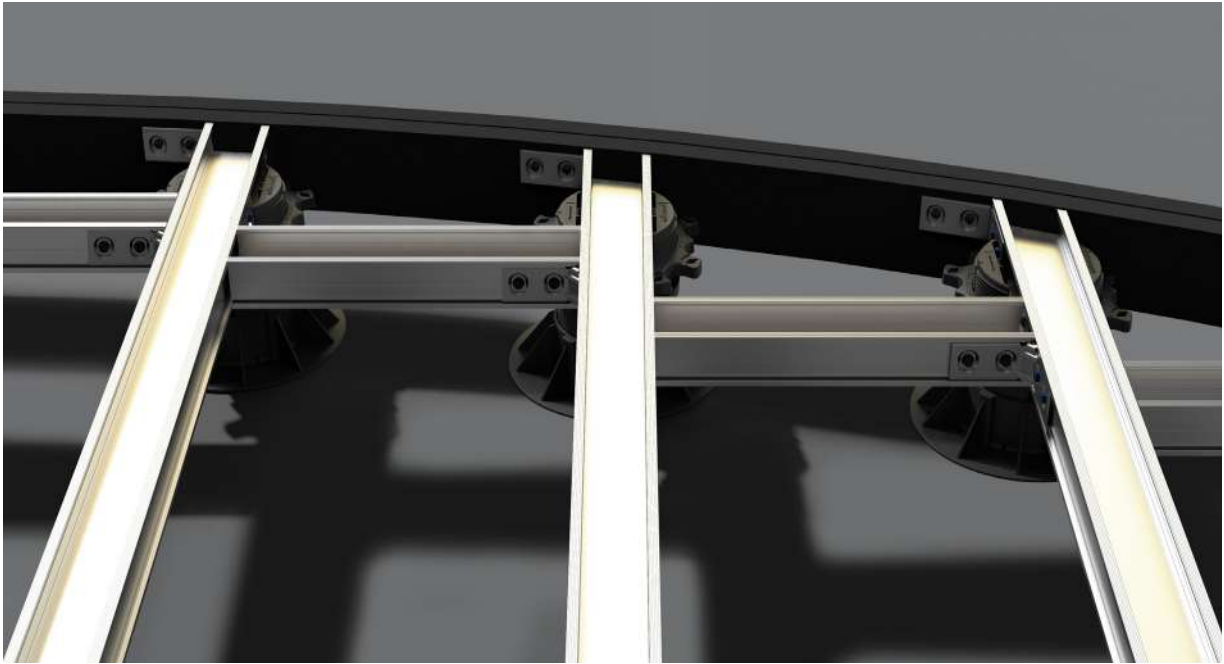
- The Joists can be attached to an outer frame using the DuoSpan 90° Angle Brackets.

19



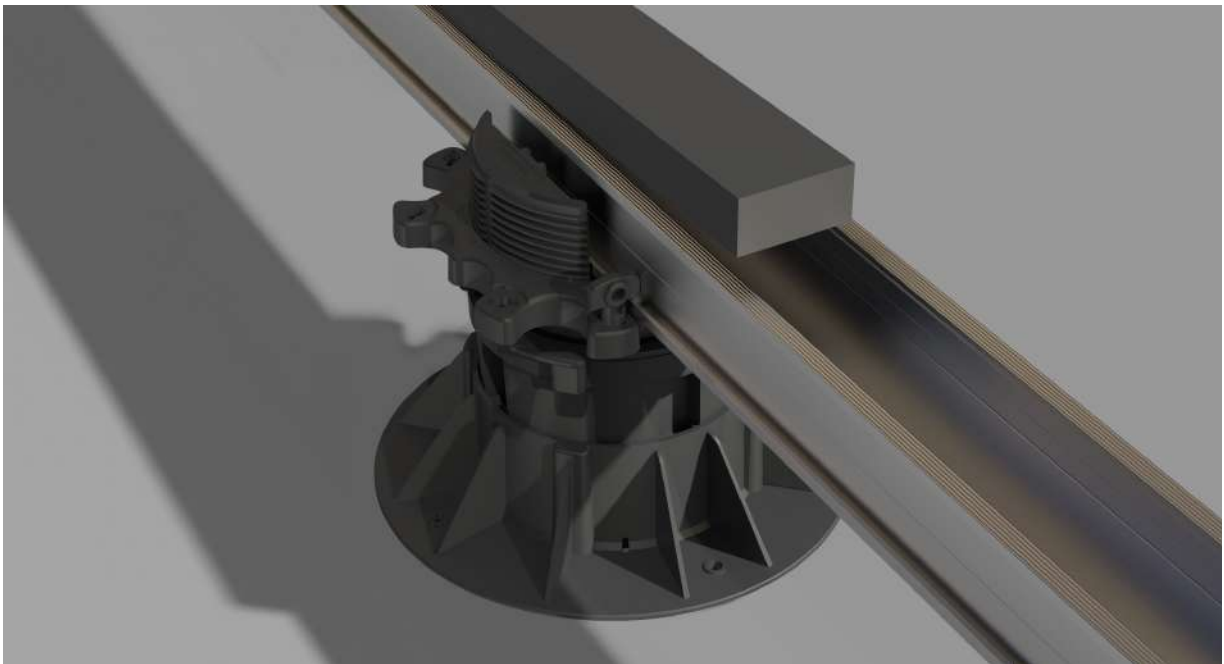
- If the DuoSpan Joists are joining at a different angle to 90° the DuoSpan Flexible Brackets can be used to fix to the outer frame.

20



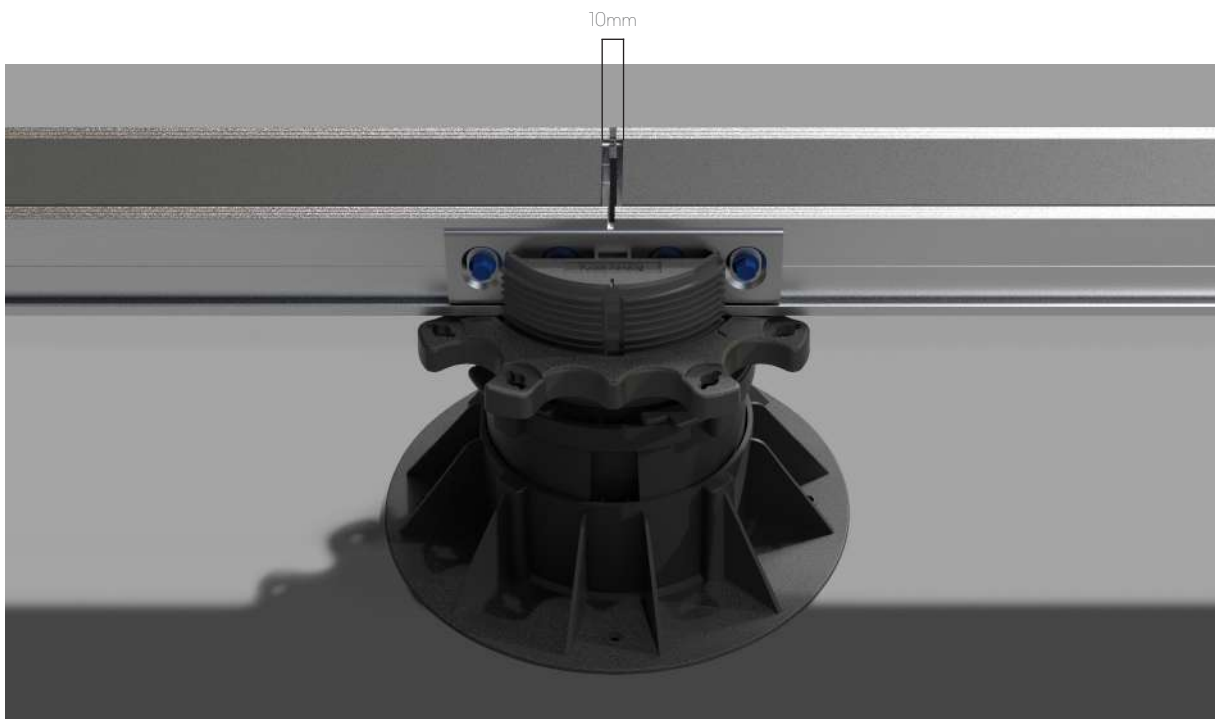
- If the design incorporates a curve the Plas-Pro Fascia Support can be used to create the curve, the Joists can be fixed into this using the DuoSpan Flexible Brackets.
- Noggins may be needed at the furthest point of this curve to hold it in place.
- To aid the installation of curves, pieces of Plas-Pro can be fixed into the cavity of the DuoSpan Joist for the Plas-Pro Fascia Support to be fixed to.
- The DuoSpan Flexible Brackets must also be used in conjunction with this.

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- Once all of the DuoSpan Joists are laid out, the DuoSpan Joist Inserts can be laid inside the channel.
- The channels may need to be cleared to prevent any dirt lifting the insert.
- The DuoSpan Joist Insert is tapered, it is important that these Joist Inserts are put into the Joist with the tapered part at the bottom.
- If the project is exposed to high wind loads we recommend screwing the Joist Inserts in to the Joist using the Plas-Pro to DuoSpan Screws.

22



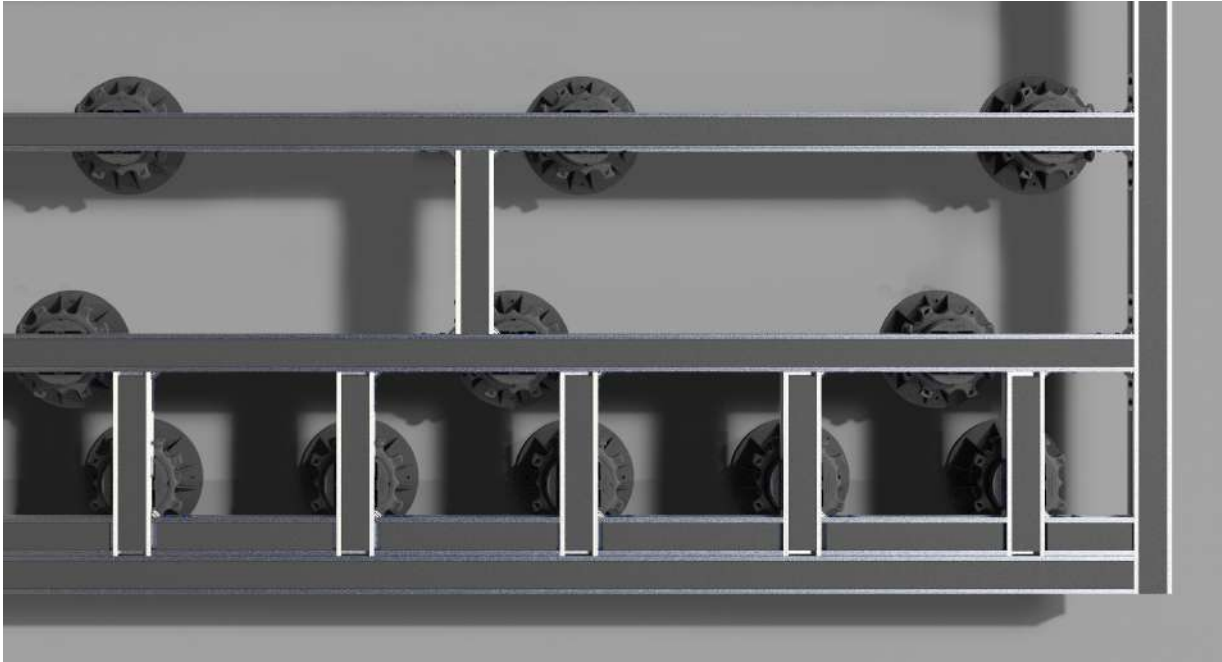
- When joining two lengths of DuoSpan Joist Inserts together a 10mm expansion gap must be left at butt ends.

23



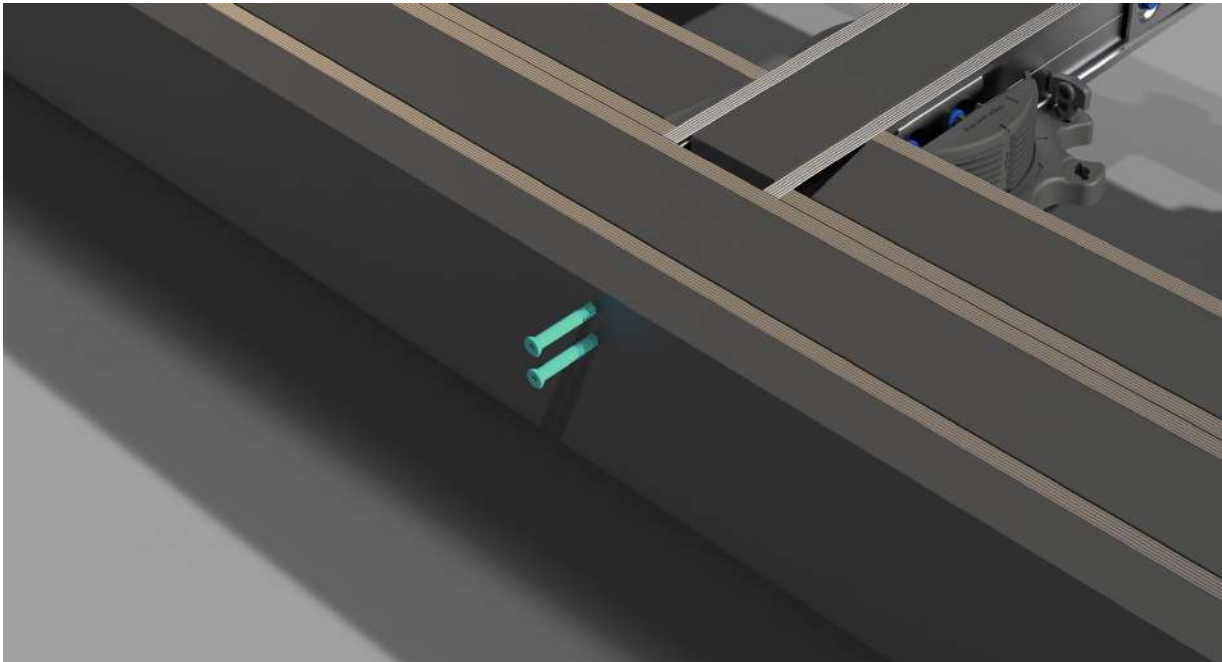
- The DuoLift support is **not** to be screwed into a membrane on a roof terrace or balcony as this will cause leaks.
- The system can be screwed to a concrete base using suitable concrete fixings.

24



- If fascia boards are used the DuoLift supports need to be set in from the outside edge, either to the DuoSpan Joists or to the noggins.

25



- Where fascia boards or 50mm edging profiles are to be used on the front face, Plas-Pro Fascia Support needs to be fixed to the face of the DuoSpan Joists using the Plas-Pro to DuoSpan Screws.
- The holes should be pre drilled through the Fascia Support with a 6.5mm HSS bit.
- Two fixings should be used every 600mm along the Fascia Support.



- Now you have installed the subframe you can begin to install the boards.
- When fixing Millboard to the DuoSpan framework Durafix 4.5x45mm fixings must be used to fix the boards down. Durafix 4.5x35mm fixings must be used to fix the fascia to the Plas-Pro Fascia Support.
- As the DuoSpan profiles are made from aluminium this may be visible in the gaps between the boards, over time these will become less visible. 100mm DPC can be applied to the top of the Joists so the Joists can't be seen in the gaps between the boards.

Other Considerations:

- Where lighting is needed on the deck, any access holes in the Joist need to be done where the Joist is supported by the DuoLift.
- Where the framework will be touching or near to electricity cables, the framework will need to be earthed suitably.

DuoLift

DuoLift unpacked

Contents	Box Quantity	Heights	Material	Box code
A DuoLift Joist Cradle	10	15 - 60mm	Glass filled nylon	PMCP010
B DuoLift Self-Levelling Joint	10	20mm	Glass filled nylon	PMLP010
C DuoLift Riser	10	45mm	Glass filled nylon	PMRP010
D DuoLift Foot	10	45mm	Glass filled nylon	PMFP010
E DuoLift Acoustic Separation Pad	10	3mm	Agglomerated cork & rubber	PMAP010



A



B



C



D



E

DuoSpan

DuoSpan profiles

Contents	Dimensions	Material	Code
F DuoSpan 51mm Joist	51 x 68 x 3600mm	Aluminium	K5168J360
G DuoSpan 99mm Joist	99 x 68 x 3600mm	Aluminium	K9968J360
H DuoSpan 136mm Beam	136 x 63 x 3600mm	Aluminium	K1363B360



F



G



H

DuoSpan insert

Contents	Dimensions	Material	Code
I DuoSpan Joist Insert	25 x 54 x 2400mm	Recycled plastic	K2554B240



I

Plas-Pro

Contents	Dimensions	Material	Code
J Plas-Pro Fascia Support	100 x 25 x 3000mm	Recycled plastic	P0210B300
K Plas-Pro Post	100 x 100 x 3000mm	Recycled plastic	P1010B300



J

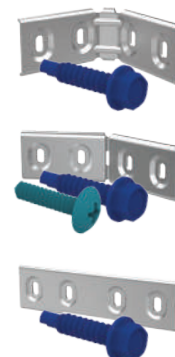


K

Accessories and fixings

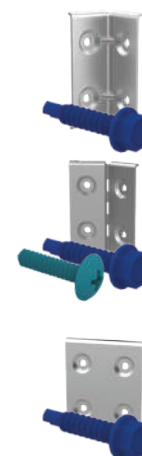
Joist bracket sets for DuoSpan 51mm Joist

Contents	Quantity	Dimensions	Material	Box code
DuoSpan 51 90° Angle Bracket	10	–	Aluminium	K51RP010
DuoSpan Hex-head Screw	42	5.5 x 25mm	Cathodic barrier coated s/s	
DuoSpan 51 Flexible Bracket	10	–	Aluminium	K51FP010
DuoSpan Hex-head Screw	42	5.5 x 25mm	Cathodic barrier coated s/s	
DuoSpan Pan-head Screw	20	5 x 25mm	Cathodic barrier coated s/s	
DuoSpan 51 Straight Connector	10	–	Aluminium	K51LP010
DuoSpan Hex-head Screw	42	5.5 x 25mm	Cathodic barrier coated s/s	



Joist bracket sets for DuoSpan 99mm Joist

Contents	Quantity	Dimensions	Material	Box code
DuoSpan 99 90° Angle Bracket	10	–	Aluminium	K99RP010
DuoSpan Hex-head Screw	42	5.5 x 25mm	Cathodic barrier coated s/s	
DuoSpan 99 Flexible Bracket	10	–	Aluminium	K99FP010
DuoSpan Hex-head Screw	42	5.5 x 25mm	Cathodic barrier coated s/s	
DuoSpan Pan-head Screw	20	5 x 25mm	Cathodic barrier coated s/s	
DuoSpan 99 Straight Connector	10	–	Aluminium	K99LP010
DuoSpan Hex-head Screw	42	5.5 x 25mm	Cathodic barrier coated s/s	



Hold-down clip

Contents	Quantity	Dimensions	Material	Box code
DuoSpan Hold-down Clip	30	–	Aluminium	K48CP030
DuoSpan Hex-head Screw	63	5.5 x 25mm	Cathodic barrier coated s/s	



Plas-Pro profile fixings

Contents	Quantity	Dimensions	Material	Box code
DuoSpan Bracket to Plas-Pro Screw	100	5 x 25mm	Cathodic barrier coated s/s	FD25P100
Plas-Pro to DuoSpan Screw	100	5 x 50mm	Cathodic barrier coated s/s	FD50P100



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