



PREVENTA ALUMINUM JOISTS

TECHNICAL DATA SHEET



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Preventa® Aluminum Joists

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Preventa aluminum joists

DIMENSIONS			PEDESTAL MAX SPAN*	WEIGHT/ LENGTH	MAX CANTILEVER FROM PEDESTAL	MAX LOADING**	MATERIAL	FINISH	SKU
H	W	L							
30mm (1.2 in)	60mm (2.4 in)	2.4m (94.5 in)	500mm (19.7 in)	8.53 lbs	100mm (3.9 in)	551 lbs	6063 T6 aluminum	Black powder coated	301010
50mm (2.0 in)	60mm (2.4 in)	2.4m (94.5 in)	900mm (35.43 in)	9.26 lbs	200mm (7.9 in)	650 lbs	6063 T6 aluminum	Black powder coated	301020

* Between supports, see overleaf

** Point load based on Finite Element Analysis (FEA) with a x 1.5 factor of safety

Maximum unsupported spans

30mm (1.2 in) Raaft® Joist

(Refer to above table
for 50mm (2.0 in) joist)



Max. 100mm (3.9 in) cantilever

500mm (19.7 in) max. unsupported span

Joist weight loadings

JOIST HEIGHT	CENTERS (CL)	JOIST LOAD (kN)	SAFE WORKING LOAD (kN)
30mm (1.2 in)	400	2.812 (632 lbf)	2 (450 lbf)
	600	1.054 (237 lbf)	0.8 (180 lbf)
	900	0.624 (140 lbf)	0.4 (90 lbf)
50mm (2.0 in)	400	5.362 (1,206 lbf)	4.5 (1,011 lbf)
	600	2.264 (509 lbf)	1.8 (405 lbf)
	900	1.770 (398 lbf)	1.2 (270 lbf)

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Application

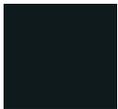
Rigid aluminum extruded joist rails for use as a support structure system to decking and paving. Raافت® joists are designed to be used on roof terraces, balconies and other external podium construction areas.



Installation information

Introducing Raافت®'s revolutionary joist, a patented fixing-free system designed to establish a robust floating platform suitable for various finishing materials, with a particular emphasis on Raافت® porcelain tiles. This innovative solution incorporates our accessible wind uplift clipping system, enabling the pedestals to seamlessly rotate and securely engage with any accessory available from Raافت®. Crafted from aluminum, our joists are able to be cut to suit any situation and do not require coating of the cut due to its versatile material.

Product finishes



Black powder coated

Sustainability

Joists are made from 100% recycled aluminum billets, with at least 60% post-consumer scrap. This ensures sustainability while maintaining strength through precise heat treatment and extrusion. Some foundries use virgin ingot to adjust composition, but this does not impact final properties.

Aluminum is infinitely recyclable, making scrap a valuable resource. This also lowers whole-life costs, as joists can be sold for recycling instead of paid disposal.

With aluminum making up 8% of the Earth's crust, bauxite reserves are sufficient for 200–400 years. However, increasing aluminum recycling is reducing the need for virgin alumina, further lessening environmental impact.

Product maintenance

ALUMINUM

The aluminum undergoes a black powder coating, minimizing maintenance requirements and mitigating the risk of galvanic corrosion.

Fire rating

Tested in accordance with BS EN 13501-1 and achieved BROOF(t4) classification. Please refer to our certification documents for full verification.

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ACCESSORIES



Bracing struts

Bracing struts evenly space the joists to the exact centers of the surface being used. They increase the rigidity of the substructure and do not require any fixings. 2 rails per segment.



Tile Wall spacers

Wall tile spacers are to be used when placing tiles against the edge of the building to avoid slipping of tiles and keeping a consistent 10mm (3/8 in) gap around the perimeter.



4mm 4-way spacer tab for joists

RaafT® 4mm 4-way spacer tabs are designed to lock into the top of a joist creating a consistent 4mm gap between tiles, that are loose laid onto the RaafT® system.



4mm 2-way spacer tab for joists

RaafT® 4mm 2-way spacer tabs are designed to lock into the top of a joist creating a consistent 4mm gap between tiles, that are loose laid onto the RaafT® system.



Straight connectors

Utilized to align each joist seamlessly, ensuring a perfectly straight line.



Angular connectors

Offer adjustment of up to 45 degrees, facilitating the installation of perimeter rails where needed.



90-degree connectors

Facilitate the creation of hatches and customized joist spacing. For instance, when the substructure intersects with a building's edge, these connectors enable secure tying of the substructure.

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Bracing struts characteristics

SIZE	CENTERS	WEIGHT	SKU	TILE SIZE**	CARBON*	MATERIAL SPECIFICATION
50mm (2.0 in)	600mm (23.6 in)	1.81 lbs	304010	600x600mm (23.6 x 23.6 in)	2.484 CO ₂ e	Pre-galvanized steel
		1.81 lbs	304011	1200x1200mm (472 x 472 in)	2.484 CO ₂ e	Pre-galvanized steel
		1.81 lbs	304012	300x1200mm (11.8 x 472 in) 600x1200mm (23.6 x 472 in)	2.484 CO ₂ e	Pre-galvanized steel
		1.46 lbs	304013	1200x400mm (472 x 15.7 in)	2.000 CO ₂ e	Pre-galvanized steel
	450mm (17.7 in)	1.28 lbs	304014	900x900mm (35.4 x 35.4 in)	1.757 CO ₂ e	Pre-galvanized steel
		1.28 lbs	304015	600x900mm (23.6 x 35.4 in)	1.757 CO ₂ e	Pre-galvanized steel
		1.28 lbs	304016	450x900mm (17.7 x 35.4 in)	1.757 CO ₂ e	Pre-galvanized steel
	400mm (15.7 in)	1.12 lbs	304017	1200x1200mm (472 x 472 in)	1.545 CO ₂ e	Pre-galvanized steel
		1.12 lbs	304018	600x1200mm (23.6 x 472 in)	1.545 CO ₂ e	Pre-galvanized steel
		1.12 lbs	304019	300x1200mm (11.8 x 472 in)	1.545 CO ₂ e	Pre-galvanized steel
		1.12 lbs	304020	1200x400mm (472 x 15.7 in)	1.545 CO ₂ e	Pre-galvanized steel
		1.12 lbs	304021	1200x200mm (472 x 7.9 in)	1.545 CO ₂ e	Pre-galvanized steel
	300mm (11.8 in)	0.79 lbs	304022	900x900mm (35.4 x 35.4 in)	1.181 CO ₂ e	Pre-galvanized steel
		0.79 lbs	304023	600x900mm (23.6 x 35.4 in)	1.181 CO ₂ e	Pre-galvanized steel
		0.79 lbs	304024	450x900mm (17.7 x 35.4 in)	1.181 CO ₂ e	Pre-galvanized steel
		0.79 lbs	304025	600x600mm (23.6 x 23.6 in) 600x300mm (23.6 x 11.8 in)	1.181 CO ₂ e	Pre-galvanized steel
200mm (7.9 in)	0.44 lbs	304026	600x600mm (23.6 x 23.6 in) 600x300mm (23.6 x 11.8 in)	0.606 CO ₂ e	Pre-galvanized steel	
30mm (1.2 in)	600mm (23.6 in)	1.15 lbs	304030	600x600mm (23.6 x 23.6 in)	1.575 CO ₂ e	Pre-galvanized steel
		1.15 lbs	304031	1200x1200mm (472 x 472 in)	1.575 CO ₂ e	Pre-galvanized steel
		1.15 lbs	304032	300x1200mm (11.8 x 472 in) 600x1200mm (23.6 x 472 in)	1.575 CO ₂ e	Pre-galvanized steel
		1.15 lbs	304033	1200x400mm (472 x 15.7 in)	1.575 CO ₂ e	Pre-galvanized steel
	450mm (17.7 in)	0.82 lbs	304034	900x900mm (35.4 x 35.4 in)	1.121 CO ₂ e	Pre-galvanized steel
		0.82 lbs	304035	600x900mm (23.6 x 35.4 in)	1.121 CO ₂ e	Pre-galvanized steel
		0.82 lbs	304036	450x900mm (17.7 x 35.4 in)	1.121 CO ₂ e	Pre-galvanized steel
	400mm (15.7 in)	0.82 lbs	304037	1200x1200mm (472 x 472 in)	1.121 CO ₂ e	Pre-galvanized steel
		0.82 lbs	304038	600x1200mm (23.6 x 472 in)	1.121 CO ₂ e	Pre-galvanized steel
		0.82 lbs	304039	300x1200mm (11.8 x 472 in)	1.121 CO ₂ e	Pre-galvanized steel
		0.82 lbs	304040	1200x400mm (472 x 15.7 in)	1.121 CO ₂ e	Pre-galvanized steel
		0.82 lbs	304041	1200x200mm (472 x 7.9 in)	1.121 CO ₂ e	Pre-galvanized steel
	300mm (11.8 in)	0.64 lbs	304042	900x900mm (35.4 x 35.4 in)	0.878 CO ₂ e	Pre-galvanized steel
		0.64 lbs	304043	600x900mm (23.6 x 35.4 in)	0.878 CO ₂ e	Pre-galvanized steel
		0.64 lbs	304044	450x900mm (17.7 x 35.4 in)	0.878 CO ₂ e	Pre-galvanized steel
		0.64 lbs	304045	600x600mm (23.6 x 23.6 in) 600x300mm (23.6 x 11.8 in)	0.878 CO ₂ e	Pre-galvanized steel
	200mm (7.9 in)	0.33 lbs	304046	600x600mm (23.6 x 23.6 in) 600x300mm (23.6 x 11.8 in)	0.454 CO ₂ e	Pre-galvanized steel

* Carbon – Basing the carbon embodiment (global warming potential) of 0.1-0.33kg equivalent per kilogram of steel, the results are as follows, using the calculation of (kg of steel / 0.33).

** Please refer to the installation guide for tile layouts.

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Accessory characteristics

ACCESSORY	WEIGHT	SKU	CARBON*	MATERIAL SPECIFICATION
2-way 4mm tile spacers for joists	0.44 lbs	303010	0.606 CO ₂ e	Nylon6-FR
4-way 4mm tile spacers for joists	0.44 lbs	303011	0.606 CO ₂ e	Nylon6-FR
Joist wall spacer	0.035 lbs	303013	0.048 CO ₂ e	Stainless Steel
30mm (1.2 in) 90° connection clip and plug	0.77 lbs	302010	1.060 CO ₂ e	Nylon6-FR
30mm (1.2 in) 2 part angular connection clip	0.66 lbs	302011	0.909 CO ₂ e	Nylon6-FR
30mm (1.2 in) straight connection plug	0.827 lbs	302012	1.136 CO ₂ e	Nylon6-FR
50mm (2.0 in) 90° connection clip and plug	1.54 lbs	302013	2.121 CO ₂ e	Nylon6-FR
50mm (2.0 in) 2 part angular connection clip	1.10 lbs	302014	1.515 CO ₂ e	Nylon6-FR
50mm (2.0 in) straight connection plug	1.32 lbs	302015	1.818 CO ₂ e	Nylon6-FR

* Carbon - Basing the carbon embodiment (global warming potential) of 0.1-0.33kg equivalent per kilogram of steel, the results are as follows, using the calculation of (kg of steel / 0.33).

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