

Cantilever Benches

Technical Datasheet

September 2021

A cantilever construction bespoke steel bench system suited to a wide range of planter designs using the Raaft Planter System. The Cantilever bench design can be used Offset and Inset on the planter wall depending on design requirement. The bench structure is built internally on the chosen planter system with external hidden supports.

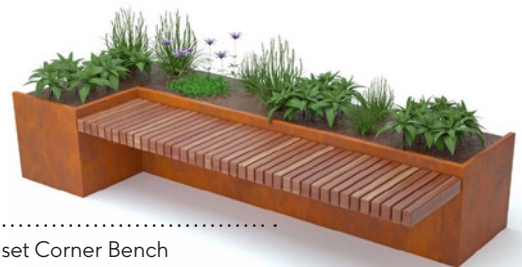
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Cantilever Offset Bench



.....
Cantilever Inset Bench



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Cantilever Inset Corner Bench



PRODUCT INFORMATION

Dimensions	Seat height (above FFL)	To suit design (450mm recommended)
	Seat depth	To suit design (460mm recommended)
	Seat length	To suit design
	Planter height (above FFL)	To suit design (300 – 1200mm) Note: The planter height is restricted to the height of the underside of the bench
	Steel thickness	3mm or 6mm
Other	Hardwood size	94 x 53 mm (Typical size)
	Material specification	CorTen A, Stainless Steel or Powder Coated
	Recycling	100% recyclable

APPLICATIONS

Designed to complement the Raaft Planter Systems, the benches are suitable for parks, playgrounds, roof terraces and many other external spaces. The Raaft Planter Systems have a high resistance to corrosive conditions in normal environments.

INSTALLATION INFORMATION¹

Install within a Raaft Planter System. No welding is required. See the dedicated planter system installation guides for further information.



FIND OUT MORE OR REQUEST A SAMPLE

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STORAGE & HANDLING

The product is securely packed and sealed in clear plastic sleeving to ensure no movement of the product in transit. Depending on the size/weight of the consignment this may be palletised.

Whilst there is no specific weight restrictions on what is or is not safe to lift in manual handling, an assessment of the health and safety risks should be undertaken and measures taken to reduce the risk of injury so far as reasonably practicable.

The following guidelines may be useful:

- Each person should be fully trained in manual handling techniques.
- The use of handling aids such as a trolley, folk-lift, pallet truck or conveyor should be used if moving large volumes of cartons.
- Break up large consignments into more manageable loads.
- Ensure that the product is stored at a reasonable height, so avoiding the lifting of cartons from floor level or above shoulder height.
- Reduce carrying distances of cartons.

PROTECTIVE EQUIPMENT

We recommend that PPE (Personal Protective Equipment) is used when installing a Raaft Bench:

- Good strong safety boots/shoes to protect the feet.
- Protective eyewear such as safety glasses.
- Strong gloves to protect the hands.
- If using loud cutting equipment then ear plugs or defenders should be worn.

FIRST AID

The Health and Safety Regulations 1981 require all construction sites to have the following:

- A first aid box with enough equipment to cope with the number of workers on site.
- An Appointed Person to take charge of first-aid arrangements. The Appointed Person looks after first aid equipment and facilities and calls the emergency services when required. Appointed Persons do not need first aid training.
- A First-Aider who has undertaken training and holds an HSE approved qualification to administer first-aid. This means that they must hold a valid certificate of competence in either:
 - First aid at work (FAW) issued by a training organisation approved by HSE
 - Emergency first aid at work (EFAW) issued by a training organisation approved by HSE

A recognised Awarding body of Ofqual/Scottish Qualifications Authority.

- The number of first-aiders will depend on the site.
- Information should be clearly displayed on site telling workers the name of the Appointed Person(s) or First Aider(s) and where to find them.

FIRE PROTECTION

Raaft benches are constructed with a framework of steel which does not burn, nor pose a fire hazard. The timber cladding would be subject to fire rating dependent on timber type and treatment.

STABILITY

CorTen A and Stainless Steel are high performance materials that display excellent resistance to atmospheric corrosion when compared to other steels, making them exceptionally suitable for bench applications.

CorTen A is a type of weathering steel which was developed to remove the need for regular painting and rust-prevention maintenance. This is achieved by the formation of a natural stable coating of dark brown oxidation across the metal's surface which acts as a barrier to the corrosive effects of rain, snow and other weather conditions.

Stainless Steel is an alloy principally containing iron, chromium, nickel and various other elements in small amounts. The addition of chromium provides the alloy with a high degree of corrosion resistance, removing the need for regular painting and rust-prevention maintenance.

POWDER COATING

Powder coating starts with shot-blasting of the steel which removes mill-scale, oxide dirt, oil and grease from the substrate; followed by a 7-stage zinc phosphate pre-treatment process for to prepare the surface. Zinc phosphate is used in the automotive industry and is therefore particularly suitable for products designed for exterior use. The product then receives the polyester powder coating to the requested colour. Polyester has excellent exterior durability and colour retention. Numerous colour options from world leading powder manufacturers are available. Powder coated products are carefully protected to avoid damage during transportation and installation.

An Anti-Graffiti finish is also available for powder coated surfaces. This is a clear top coat applied to weather resistant powder coating and provides a surface that allows easy cleaning of graffiti. More information on this is available upon request.



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ENVIRONMENTAL ISSUES

RaafT Planters are manufactured from either Steel, CorTen A or Stainless Steel and is 100% recyclable. As a result the whole life cost of steel is excellent as it is sold for recycling not paid disposal. The principal element used in the production of steel is iron, which is second only to aluminium in terms of natural abundance in the Earth's crust. At current extraction rates there is enough iron to last another 1000+ years.

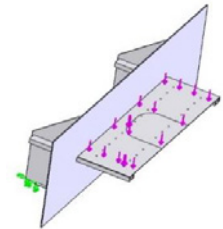
SHEET MATERIAL TOLERANCES

- a) CorTen A steel materials class A EN10029
- b) This confirms a thickness tolerance for 3mm of lower -0.4 to upper +0.8
- c) Sheet width tolerance for panels between 600 – 2000mm are + 20mm
- d) Sheet length tolerance for panels up to 4000mm are +20mm
- e) Flatness tolerance - the minimum yield strength of hot rolled CorTen A steel is 355 N/mm² which makes it steel type L. A 2000mm length has a flatness tolerance for 3mm thickness material of 14mm.

LOADING ANALYSIS²

A loading analysis has been carried out applying pressures to the bench unit and the conclusion reached was as follows:

The RaafT Cantilever Bench Assembly will safely support a distributed load of 1200kg or a point load in the centre of 825kg with a factor of safety of 1.5.



SUPPORTING DOCUMENTS

More information on the RaafT Bench systems can be found at www.raaft.co on the product page. In particular, look for the Technical Support documents.

1. The Installation Information given in this document is intended as a guide only. We recommend that professional opinions are obtained before work is commissioned. RaafT, a Kinley Systems Ltd. Group Company, accepts no responsibility for any damage or loss as a result of using the Installation Information. We will be happy to engage in any discussion with regard to specific project applications.
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