Aluminium Support Joist to suit Timber decking
Technical Datasheet

September 2021

Rigid aluminium joist for use as a support structure for the Raaft range of terrace products, including Floor Structure Panels, Composite Decking and Atria Porcelain Tiles.

Available in Brown powder coat (RAL 8028) or Milled aluminium finish (silver).

PRODUCT INFORMATION

Product Code		303010
Dimensions	Joist Height	50mm
	Joist width	60mm
	Joist width at widest point	72mm
	Joist length	2400mm
Technical	Maximum unsupported span	900mm
	Maximum unsupported cantilever span	200mm
	Maximum suggested loading	295kg
Other	Available finish	Dark Brown (RAL 8028) powder coated
	Material specification	6063 T6 aluminium
	Recycled content	Part recycled 100% recyclable

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APPLICATIONS

Roof terraces, balconies and other external areas. Joists are manufactured from aluminium alloy 6063A which is a high-performance alloy with a high natural resistance to corrosive conditions in normal environments.

INSTALLATION INFORMATION[1]

By fixing the joists on Raaft Pedestals and installing the timber decking using self-drilling screws

STORAGE & HANDLING

The product is securely packed in a single flute cardboard carton to ensure no movement of the product in transit and each carton is sealed with a fibre tape. 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:

a) Each person should be fully trained in manual handling techniques.

b) The use of handling aids such as a trolley, folk-lift, pallet truck or conveyor should be used if moving large volumes of cartons.

c) Break up large consignments into more manageable loads.

d) Ensure that the product is stored at a reasonable height, so avoiding the lifting of cartons from floor level or above shoulder height.

e) Reduce carrying distances of cartons.

PROTECTIVE EQUIPMENT

We recommend that PPE (Personal Protective Equipment) is used when installing Joists:

a) Good strong safety boots/shoes to protect the feet.

b) Protective eyewear such as safety glasses.

c) Strong gloves to protect the hands.

d) 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) A first aid box with enough equipment to cope with the number of workers on site.

b) 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.

c) 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.

d) The number of first-aiders will depend on the site.

e) 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

Joists are made using Aluminium Alloy 6063A T6 which does not burn and is not a fire hazard.

STABILITY

All building materials are eventually degraded by weathering, corrosion, rot and decay. Aluminium's natural ability to resist these influences better than many materials is one of its most widely appreciated features. Aluminium reacts with the oxygen in the air to form an extremely thin layer of oxide; this layer is dense and provides excellent corrosion protection, and is self-repairing if damaged.

ENVIRONMENTAL ISSUES

Joists are manufactured from recycled aluminium (80% recycled content minimum) and are 100% recyclable. As a result the whole life cost of aluminium joists are excellent as they are sold for

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recycling not paid disposal. The 20% virgin aluminium is blended with the recycled content to help achieve the proper chemical content for the alloy specification, which gives the specified mechanical properties for strength. Scrap aluminium is a valuable resource and can be recycled repeatedly.

There are plenty of raw materials for the production of aluminium. In a variety of forms, aluminium compounds make up a full 8% of the Earth's crust. Bauxite is the main starting point in the production of aluminium and given current rates of production there is enough bauxite to last another 200 to 400 years, this based upon no increases in the use of recycled aluminium and no further discoveries of bauxite. Furthermore the volume of aluminium being recycled is at a level where the requirement for virgin alumina is decreasing – further lessening the environmental impact.

LOADING ANALYSIS[2]

Loading analysis information has been collected using Finite Element Analysis based on a central point load with a factor of safety of 1.5.

UNSUPPORTED SPAN	600 MM	900 MM (RECOMMENDED)
Maximum loading	412kg	295kg
Maximum deflection	0.54mm	0.83mm
Failure load*	1000kg	590kg

*potential risk of collapse of the section

SUPPORTING DOCUMENTS

More information on the Joist products can be found at www.raaft.co in the Resource Centre. In particular, look for the CAD Drawing and Installation Guides.

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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