

Safety Nets for Adjustable Pallet Racking (APR) Applications

DESIGN CONCEPT

RackNets™ 2.3 is designed to contain individual items or materials up to 50kg falling from a pallet racking system.

RackNets™ 3.0 is designed to contain a pallet of up to 1000kg falling from a pallet racking system.

RackNets™ 5.0 is designed to restrain and contain a pallet of up to 1000kg falling from a pallet racking system.

RackNets™ In-Flue is designed for the centre of the rack to prevent product or pallets from being pushed through from one aisle into an adjacent aisle.

Each system is designed to distribute the loads caused by any impact throughout the whole system, thus minimising any localised loads and reducing the possibility of structural damage to the racking.

- **Contain is defined as** “items remain within the netting envelope”.
- **Restrain is defined as** “items remain on or within the racking structure”.

Due to the range of loading weights and pallet dimensions in use, it is not possible to contain or retain all pallets/objects that are subject to the most severe mishandling.

For any system fitted to the rear of APR, there is a fundamental trade-off between the extent of fall protection and object containment that can be provided and the loads imposed on the racking structure.

It is important an adequate Risk Assessment is carried out and that any solution is used in conjunction with a suitable Safe System of Work at all times.

OVERVIEW

- All nets are **specifically manufactured** to order to ensure optimum fit to the racking.
- **Brackets are installed on every frame** in order to significantly reduce localised twist and tension to the racking structure. These then hold the cable and net in place and distribute the load evenly through the racking.
- Warehouse Partners work with Gripple® as a partner to ensure that all the wire and wire fixings are properly tested and have verified loadings with safety ratios applied.
- All fittings are swaged to the wires at Gripple® and we use the **Gripple® fixings system** to ensure that all wires have a consistent loading capacity that cannot be changed by the installation teams during erection and do not form part of the process on site.
- One of the key benefits of the Warehouse Partners netting system is that **all parts have been specified to reduce installation time** whenever possible and not to simply provide the cheapest material cost.
- Our **RackNets™ 3.0** and **5.0** systems have been subject to extensive physical testing under realistic conditions.
- Warehouse Partners **RackNets™** system nets are flexible, lightweight and require less structural support from the racking than steel mesh solutions.
- **No special tools or fabrication is required on site** – easily installed in comparison with other solutions.
- Will not corrode, rust or dent – **virtually impossible to damage in normal use**.
- Offer a **soft-catch solution for fallen goods** and can be easily removed for adjustment, cleaning, maintenance or racking repairs.

BRACKETS

RackNets™ 2.3 is available with a 100mm stand-off which is fully compatible with the SEMA guidelines for the design of APR. All Brackets are manufactured from pre-galvanised steel and are designed to suit a range of common APR strut.

RackNets™ 3.0 and **RackNets™ 5.0** is available with 100, 150, 200 and 250mm stand-offs as standard to suit most common applications and racking types. All main brackets are of welded construction, and are supplied powder-coated. All Intermediate and side brackets are manufactured from pre-galvanised steel and are common with the **RackNets™ 2.3** system.

The main bracket has been designed to be loaded in three directions and has been tested in conjunction with Gripple® cable to ensure that it meets the necessary minimum failing load (MFL).

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NET

- All nets are manufactured to size specifically for each project, and are available in a range of standard colours at no additional cost.
- All BoR nets are manufactured from 209-045-04 high tenacity UV stabilised polypropylene.
- **RackNets™ 2.3** employs a 40 x 40 x 2.3mm mesh, with a weight of 100g/m² and burst strength per mesh of 0.80kN.
- **RackNets™ 3.0** employs a 45 x 45 x 3mm mesh, with a weight of 150 g/m² and burst strength per mesh of 1.25kN.
- **RackNets™ 5.0** and **RackNets™ In-Flue** employ a 45 x 45 x 5mm mesh, with a weight of 400g/m² and burst strength per mesh of 3.2kN.
- Commercial polypropylene multifilament has an elongation at break in the region of 20 to 30%.
- Polypropylene is a paraffinic hydrocarbon and does not absorb water. Moisture does not affect the tensile strength of the net or any of the other mechanical properties.
- Polypropylene retains its flexibility to temperatures of -70°C or lower.
- The softening point of polypropylene fibres is in the region of 150°C and the fibre will melt at between 160 – 170°C.
- The softening and melting points are determined by the nature of polymer and the way the structure has been influenced during the treatment of the fibre during manufacture.
- Polypropylene is inert to a wide range of chemicals. Its structure makes it more resistant to chemicals that degrade olefin fibres. Resistance to both acids and alkalis is excellent.
- Polypropylene nets will not support a flame and represent no significant fire hazard in use, however nets can have an additional fire-resistant finish applied on request.

On all systems RackNets™ Cable ties are fitted above and below each beam connector on intermediate uprights. These ties retain the net at the desired standoff, without comprising the rack integrity and provide additional resistance to prevent certain items from falling from the back of the racking.

GRIPPLE CABLE ASSEMBLY

RackNets™ 2.3 systems use a No.4 (4.75mm) Gripple® cable assembly manufactured with an M10 stud swaged on one end. The cable assembly and locking device have a safe working load (SWL) of 225.75kg with a 5:1 factor of safety.

The wire rope itself has a 7 x 19 (12/6/1) construction, and is manufactured with a galvanised coating in accordance with the norm EN 12385.

RackNets™ 3.0 and **RackNets™ 5.0** systems use a No.6 (6mm) Gripple® cable assembly manufactured specifically for Warehouse Partners with an M10 welded eyebolt swaged on one end. The cable assembly and locking device have a SWL of 325kg with a 5:1 factor of safety.

The wire rope itself has a 7 x 19 (12/6/1) construction, and is manufactured with a galvanised coating in accordance with the norm EN 12385.

The Gripple® locking device offers;

- Simplified installation – easily tensioned and re-tensioned.
- Integral Lock – one action locks the wire in both channels simultaneously (RackNets™ 3.0 & 5.0 only).
- Integral lock secures load against wind chatter and vibration.