

Safety Nets for Adjustable Pallet Racking (APR) Applications

PREFACE

This document is intended to support the users of APR by providing practical guidance for the selection of the most appropriate Warehouse Partners RackNets™ safety net.

Warehouse Partners consider this document to reflect current good practice, based on both physical testing and site experience.

PREFACE

According to HSE figures, around 13% of major injuries in the warehousing industry are caused by moving/falling objects.

The Working at Height Regulations require employers to take steps to prevent people being injured by falling objects, and identifies the following as common causes of objects falling within the warehouse environment:

- Goods disturbed from a congested shelf.
- Goods pushed through the back of a racking location due to carelessly positioned stock or excessive stock levels.
- Goods falling from pallets during handling on a fork-lift truck.

The HSE Guide to Warehousing and Storage specifically advises that employers should take steps to prevent people being injured by falling objects.

Warehouse Partners recognise this requirement, and have developed a range of safety net solutions offering the best risk reduction system available on the market today without imposing unacceptable horizontal loads on the pallet racking structure, which can be economically and easily installed to most types of APR to protect individuals from falling items up to 1,000kg as part of a Safe System of Work.

TYPES OF INCIDENT

Working closely with our trade partners, Warehouse Partners have identified two distinct hazards when working with APR; fall-through and fall-out..

Fall-through occurs when a pallet is incorrectly loaded onto APR without any deck or other means of pallet support. This could be due to operator error, or by using an inappropriately sized pallet.

In this case the pallet falls into the bay between the beams, and usually results in the pallet and load coming to rest on the materials stored on lower levels, or goods scattering and falling outside the confines of the racking.

Fall-out occurs when a pallet falls from the rear of a single-sided APR run, often into a pedestrian or pick aisle. This is often due to operator error, e.g. when a second pallet is loaded into a full location and in particular, where a pallet support system (such as steel mesh, timber decks or pallet support bars) is being used.

SOLUTION

Warehouse Partners offer four systems, each designed to fulfil slightly different end-user requirements, but sharing the same fundamental design concept and installation method.

- RackNets™ 2.3
- RackNets™ 3.0
- RackNets™ 5.0
- RackNets™ In-Flue

BESPOKE SOLUTIONS

Other bespoke systems for block-storage, tiered structures, automated systems and other storage applications are available. Please contact Warehouse Partners for further information.

RISK ASSESSMENT GUIDANCE

To assist users to select the most appropriate solution, the tables below can be used as part of the Risk Assessment process where a hazard of 'Objects Falling From Height' has been identified.

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TABLE – RACKNETS™

Risk Assessment for the selection of RackNets™ Products

Ser	Item	Application	Hazard	Deck Fitted	Likelihood (L)	Severity (S)	L & S	Cord Diameter	Remarks
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
1	Small Items	All	Spillage	Yes/No	2	2	4	2.3mm	Note 1
2	Pallet	All	Fall Through	No	5	1	5	3mm	
3	Pallet	WA-VNA	Fall Out	No	2	3	6	3mm	
4	Pallet	Pick Aisle	Fall Out	No	2	5	10	5mm	
5	Pallet	WA-VNA	Fall Out	Yes	4	3	12	3mm/5mm	Note 2
6	Pallet	Pick Aisle	Fall Out	Yes	4	5	20	5mm	Note 3

Note 1. Soft-Catch Protection for items up to 50kg

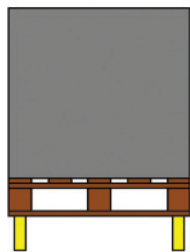
Note 2. Cord diameter dependent on site specific Risk Assessment.

Note 3. Assuming no other method of pallet restraint e.g. backstop beams fitted.

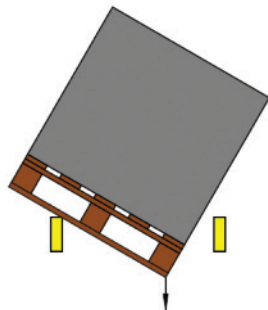
Due to the range of loading weights and pallet dimensions in use, it is not possible to contain or retain all pallets/objects that are subject to the most severe mishandling.

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.

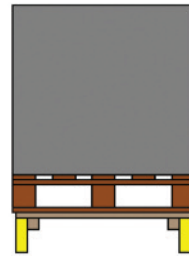
It is important that any solution is used in conjunction with a suitable Safe System of Work at all times.



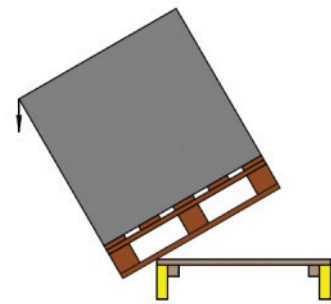
Pallet Positioned on APR Without Deck



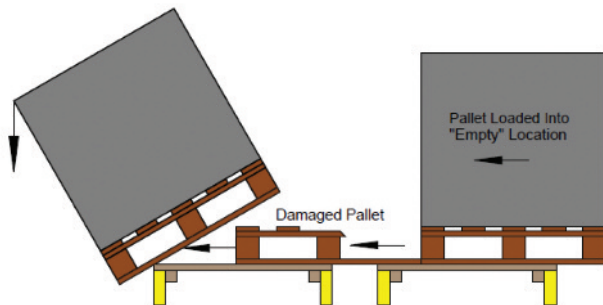
Fall-Through Incident



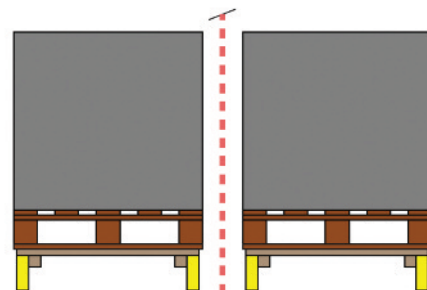
Pallet Positioned on APR With Deck



Fall-Out Incident



Pallet Dislodged by Damaged Pallet



RackNets™ In-Flue Net Installed