

## About RCR Flooring Products

RCR Flooring Products is the organisation behind some of the world's best-known industrial flooring brands.

We design, manufacture and supply a wide range of products used in the creation of industrial floors, including Rinol resin coating systems, Permaban armoured joints, and Rocland floor surface hardeners.

The three brands are united by a commitment to product excellence, customer support and worldwide service.

Our products have been used in factories and distribution centres for many of the world's leading companies, and are trusted by engineers, architects and contractors.

Permaban joints are manufactured under the internationally recognised disciplines of ISO 9001:2015 quality management, ISO 14001:2015 environmental management, and OHSAS 18001:2007 health & safety management. Also, all the products shown on the reverse of this leaflet are CE marked (see website for details).

RCR is proud to list many of the leading logistics, manufacturing, retail and commercial companies in the world as clients.

B&Q WICKES TESCO ROYAL MAIL PROLOGIS  
GOODMAN GAZELEY FOCUS CASTORAMA  
GOLDBECK HOMEBASE SELCO BIG YELLOW SELF  
STORAGE ALDI ALLIED BAKERIES LIDL IKEA  
MORRISONS SAINSBURY'S PNK RUSSIA  
RADIUS GROUP RUSSIA

The product information given in this leaflet is a condensed, quick-reference guide. For full specifications, product options, health & safety guidance and installation instructions, please visit [www.permaban.com](http://www.permaban.com), or contact us.



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## The benefits of using armoured joints

Permaban armoured joints (properly called "leave-in-place joint systems") offer four important benefits:

- They act as a permanent formwork, creating a secure boundary or day joint during the concrete pour.
- They allow the concrete slab to contract in a controlled way, to prevent random cracks occurring.
- They protect the construction joint arrises from impact damage once the building is in use, saving the expense of repair.
- They allow efficient load transfer between concrete slabs, for a stable and durable floor.

## How armoured joints work

Armoured joints are used to create a boundary in which to contain a day's concrete pour. As the concrete sets and contracts, the two sides of the joint (held together with frangible rivet connectors) are gradually pulled apart horizontally. Dowels fixed through the centre stop the slabs moving vertically and allow for load transfer between the two sections of the floor. Once the floor has contracted, the gap between the two sides can simply be filled with a suitable joint sealant.



Signature in situ



## The value-engineered approach

Traditional-style armoured joints only account for about 5% of the material cost of the floor slab. Joints are a small part of the overall cost - but can make an enormous difference to the floor's lifetime performance.

By using a combination of Permaban armoured joints you can create an optimum specification without a significant cost increase.

For example, using Signature and Eclipse together in a specification will provide superior joint protection, but with a less than 1% increase in material cost. Using Signature alone means only a 3% increase in material cost. But remember that any additional up-front costs will be more than recouped over the life of the building, due to reduced floor and vehicle maintenance costs. The building's versatility, and saleability, can also be improved.

Speak to RCR's technical advisers for further guidance on value engineering using Permaban joints.

## Guidance on choosing the right joint

**Building use.** Consider whether the building will have one use in its lifetime, or if this may change. You can future-proof the floor by choosing a versatile joint, such as Signature or Wave. These allow vehicles to cross the floor freely in any direction, now and in future.

**Traffic.** Consider the type of vehicle wheel being used, and traffic frequency and speed ('duty'). Vehicle direction determines how much impact a joint endures. Straight joints such as AlphaJoint are Eclipse are fine where vehicles won't cross directly. Otherwise, choose Signature or Wave to prevent impact.

**Service.** If cleaning chemicals are regularly used, a stainless steel joint (AlphaJoint CSS) will withstand these and look good for longer. If a joint is likely to be regularly exposed to wet conditions, choose our Signature or Eclipse (galvanised as standard), or Wave (galvanised to special order).

**Hazards.** If the building handles substances which must not leach into the ground, or where the joint gap itself would pose a hazard to pedestrians, then cover the gap permanently with SignatureSlide, or fill with a joint sealant.

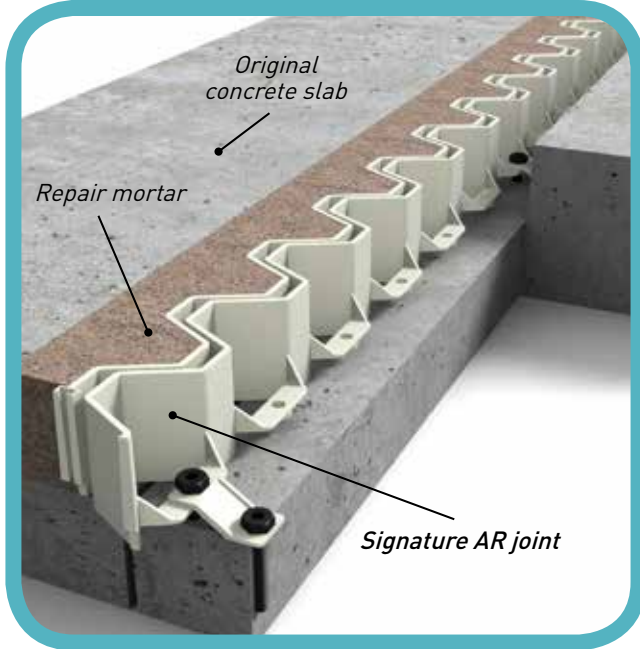
**Floor construction.** 'Jointless' floors include armoured joints, but not saw-cut joints, so the gap sizes can be slightly larger. Take the likely gap size into account, and how it might be filled. SignatureSlide handles larger gaps and ensures no joint gap is exposed.



## What is impact?

There is a risk of impact damage if a vehicle crosses a straight joint at 90°. This is because the wheels drop momentarily in the gap between the two straight sides of the joint. Repeated impact on a saw-cut or straight armoured joint causes damage to the surrounding concrete, leading to maintenance costs and downtime. A shaped joint arris (Signature or Wave) has no straight lines, so prevents impact.

Ask us about our Signature AR system for repairing damaged straight joints.



## Our comprehensive service

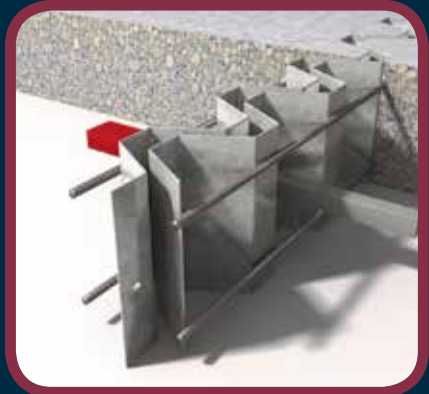
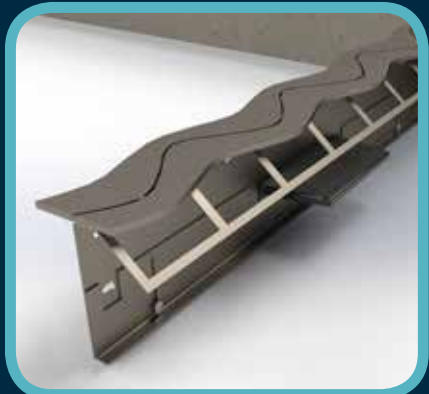
We are always happy to help specifiers and contractors with product choice and installation advice, including attending planning and site meetings.

RCR Flooring Products also offers complementary products for industrial floors, including RINOL resin flooring systems and Rocland surface hardeners.

Visit [www.rcrflooringproducts.com](http://www.rcrflooringproducts.com) for details.



armoured joints quick guide





permaban *Wave*®



Permaban Wave® is the versatile, impact-free plate joint that's easy to install. Its triple curve design has no straight edges, so MHE crosses smoothly in any direction. The narrow top plate aids stability and levelling. An extension plate allows installers to choose the correct joint height, then use excess stock on the next job site.

**Ideal for:**

- General warehousing/distribution centres
- Retail developments
- Production facilities
- Heavy and light industry

**Specific areas of use:**

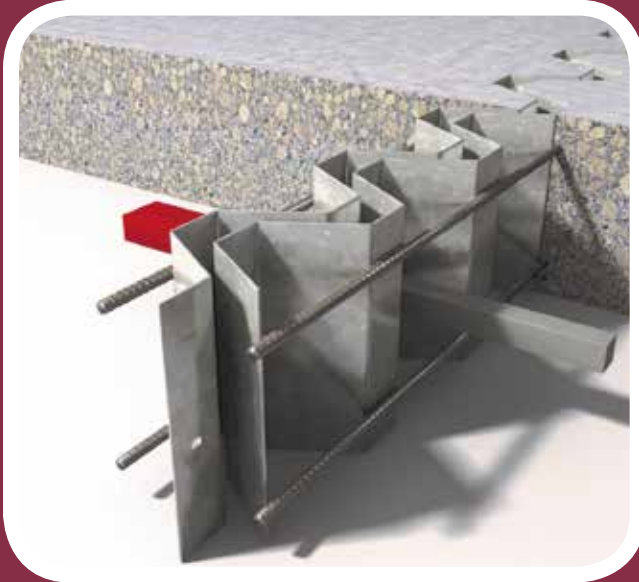
- Defined movement areas
- Transfer aisles, where vehicles cross joints at 90°
- Dock levellers
- Doorway protection
- Jointless floors

**‘Duty’ / wheel type:**

- Very heavy duty (small, hard wheels, i.e. motorised pallet trucks)
- Heavy duty (small, hard wheels)
- Medium duty (pneumatic tyres)



permaban *Signature*®



Permaban Signature® is an armoured joint like no other. The clever half-hexagon shape prevents the wheels of materials handling vehicles from dropping into the gap between the two edges of the joint. Because there's no impact, there's no damage to either the joint or the truck. Winner of Most Innovative New Product, UK Concrete Show 2012.

**Ideal for:**

- General warehousing/distribution centres
- Waste transfer stations
- Cold stores
- Production facilities
- Heavy and light industry

**Specific areas of use:**

- Defined movement areas
- Transfer aisles, where vehicles cross joints at 90°
- Dock levellers
- Doorway protection
- Post-tensioned slabs
- Jointless floors

**‘Duty’ / wheel type:**

- Very heavy duty (small, hard wheels, i.e. motorised pallet trucks)
- Heavy duty (small, hard wheels)



permaban *Eclipse*®



Eclipse is a tough, hard-working armoured joint for heavy-duty applications. A high-tensile steel triangular section reinforces the top edge of the joint, so it can withstand heavy and persistent traffic. The full-height divider plate adds to its strength and rigidity, making Eclipse a versatile and economical alternative to a traditional-style joint. Galvanised as standard for internal and external use.

**Ideal for:**

- General warehousing
- Distribution centres
- Production facilities
- Retail developments
- Heavy and light industry

**Specific areas of use:**

- Free movement areas
- Transfer aisles
- Doorway protection
- Jointless floors

**‘Duty’ / wheel type:**

- Heavy duty (small, hard wheels)



AlphaJoint® Classic 4010



Well known as the ‘industry standard’ armoured joint, this remains a popular choice for many projects worldwide due to its strength and versatility. It is now supplied with Permaban's Universal Divider Plate, with pre-set positions which allow installers to choose the correct joint height, then use excess stock on the next job site.

**Ideal for:**

- General warehousing
- Distribution centres
- Production facilities
- Heavy and light industry

**Specific areas of use:**

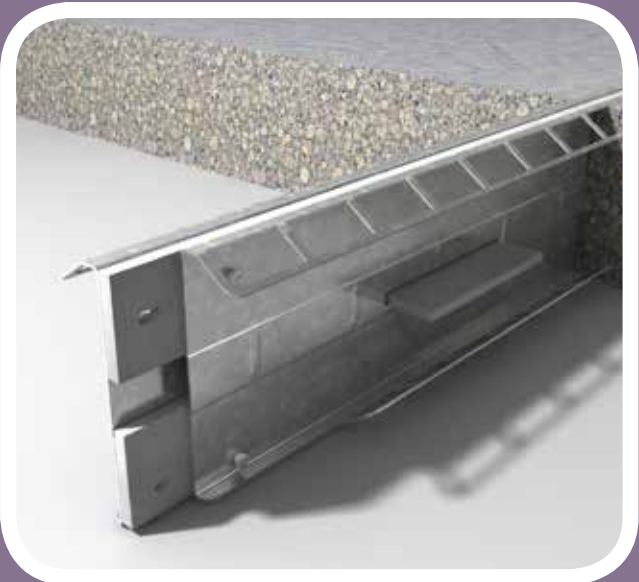
- Free movement areas
- Transfer aisles
- Doorway protection
- Jointless floors

**‘Duty’ / wheel type:**

- Heavy duty (small, hard wheels)
- Medium duty (pneumatic tyres)



BetaJoint® Range



Tough and sturdy, yet remarkably light – the BetaJoint range offers medium-duty construction joint protection in concrete floors and pavements. Continuous concrete ties ensure firm anchoring into the concrete along its entire length. Choose BetaExpansion (pictured) for external slabs; and BetaEdge if using traditional removable timber or steel formwork.

**Ideal for:**

- Light industry
- Pedestrian traffic areas

**Specific areas of use:**

- Jointless floors
- Pedestrian traffic areas
- As a leave-in-place screed rail
- Free movement areas
- External yards (BetaExpansion)

**‘Duty’ / wheel type:**

- Medium duty (pneumatic tyres)



SignatureSlide



No impact, no damage, no gap! SignatureSlide's clever double-plate top ensures no gap is exposed when the joint opens. Designed to cover larger gap sizes, it is ideal for jointless floors, post-tensioned floors and cold/freezer stores; and also where debris or substances might enter the gap. Continuous concrete ties ensure firm anchoring.

**Ideal for:**

- Cold stores and freezer stores
- Food manufacturing
- Heavy and light industry
- General warehousing

**Specific areas of use:**

- Jointless floors
- Post-tensioned slabs
- Defined movement areas
- Internal use

**‘Duty’ / wheel type:**

- Heavy duty (small, hard wheels)

