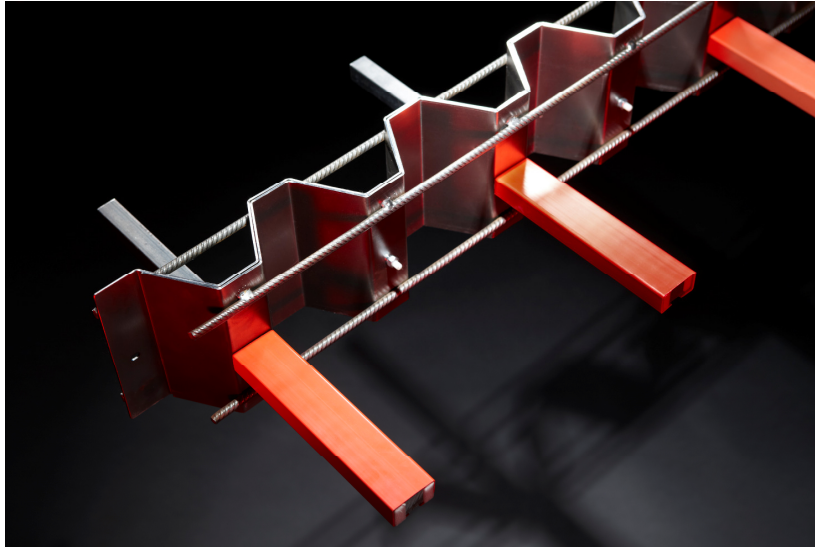


permaban *Signature*[®]

Frequently asked questions about our armoured joint with disruptive face technology.



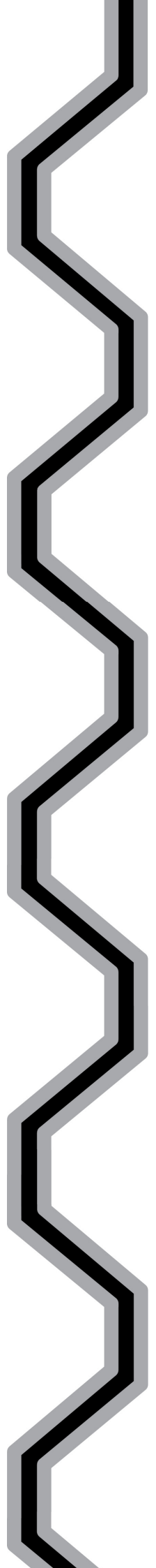
Product specification FAQs

What is 'disruptive face technology'?

Traditional armoured joints consist of two parallel faces. As the joint opens, passing wheeled traffic drops into the joint, generating a high impact force that can damage not only the joint, but the materials handling equipment. By disrupting the face of the joint - effectively forming interlocking fingers - wheels pass from the approach slab to the leave slab without dropping into a gap. At the point of transfer, the wheels will momentarily be on both sides of the slab simultaneously. The shape of the disruptive face has been carefully designed to accommodate a range of wheel types and joint openings

Why should I use Signature instead of AlphaJoint?

AlphaJoint has been the industry standard method of protecting construction joints for many years. It's the traditional way to protect the joint arris from breakdown through impact damage from materials handling equipment. However, in situations where the traffic is directional and perpendicular to the joint, small, hard-wheeled trucks in particular are liable to disruption and damage as they drop in to the joint. Signature is specifically designed to enable trucks to pass over the joint up to 40mm wide, in any direction, without creating impact forces. Perfect applications are across



the back of dock levellers, transit aisles, doorways, etc. Signature is also an ideal solution for large panel steel fibre jointless floors, where the construction joints are particularly prone to wide openings.

Can Signature be used in jointless and post-tensioned floors?

Absolutely. These types of floor construction are particularly prone to large joint openings. As such, there is a significantly higher risk to materials handling equipment if using a parallel face joint in these situations.

How does Signature compare to sinus plate joints?

Signature is able to better support loads at the very edge because of its full depth corrugation. Sinus plates are typically only corrugated part-way down, creating a point of weakness. Signature is also designed to operate at openings up to 40mm, both in terms of smooth passing of traffic and load transfer – whereas sinus joints tend to be limited to joint openings of 20mm or less. Sinus plate joints are also considerably wider than Signature which means they can be problematic to finish, especially if not aligned perfectly. Because Signature, at just 2mm, is so much thinner, this isn't a problem.

The steel is only 2mm wide. Is it strong enough?

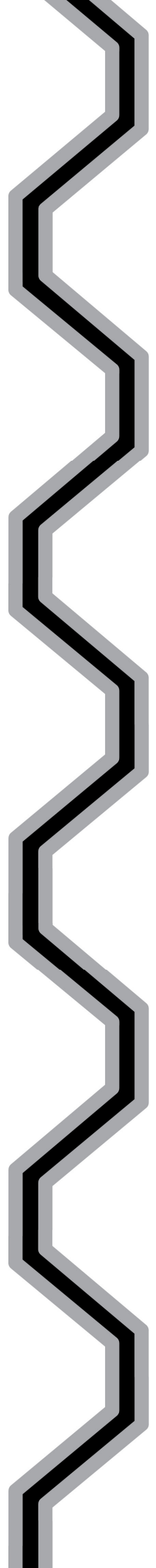
Traditional armoured joints work by using steel to protect the joint arris against impact damage. Being a disruptive face joint, wheels traverse smoothly over the surface of Signature without creating impact forces. As the steel doesn't need to withstand impact, it only needs to be of sufficient thickness to be robust enough during installation.

What is the load transfer capacity?

Signature incorporates standard 20mm square dowel bars. While these determine the bending capacity of the slab, it is more usual for the slab depth and concrete strength/type to be the controlling factor. The product specification sheet includes load transfer figures for common combinations.

Why is this joint offered with square dowel bars instead of plate dowels?

Square dowel bars have a long history, and when used in conjunction with our Permasleeve they provide for lateral movement, as do plate dowels. The critical factor to their performance is their accurate alignment. The dowels are supplied loose with the product, and must first be fixed into the product using the clips provided: doing so will ensure the dowels are positioned correctly. Incorporating plate dowels into Signature would create congestion to the point that we would have concerns about the consolidation of concrete under the dowel.



Can the joint be used on external slabs?

Signature can be used on internal and external slabs.

Can it be used as an expansion joint?

This is technically possible and a solution should be available soon. The joint is supplied partly pre-opened, but can be set to the desired width, but without a foam filler.

Is Signature available in stainless or galvanised steel?

This is possible but would be to special order and may incur extended lead times. The exposed face of the joint is only 2mm per side, considerably less than a conventional armoured joint, so unsightly rust blooming is therefore considerably reduced.

What sizes is the joint available in?

Signature is available in a full range of sizes from 125mm to 300mm.

What accessories are available?

A full range of Ts, 4-ways and corners are being developed.

Installation FAQs

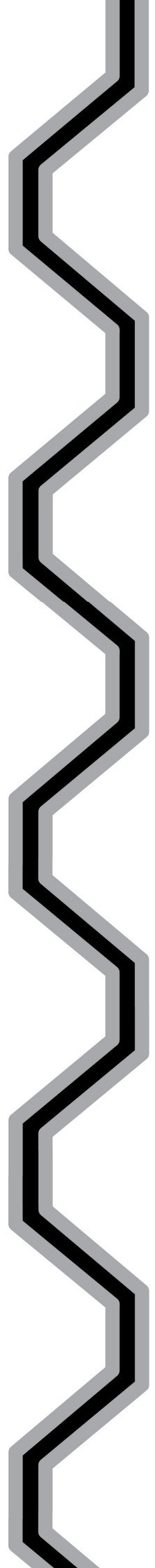
What is the best method of installation?

Two methods are recommended. Signature is fully compatible with our AlphaFix installation system. Alternatively, the rail can be set to height with timber wedges under the dowels and secured using welded pins.

Which 'way up' do I install the joint?

The dowels, when installed, rest on a length of rebar. If the dowel does not sit on the rebar, the joint is upside down.

All Permaban joints are designed to allow a gap underneath them. This means that the dowel within each product is set below the centre-line of the joint. If you're unsure, you can measure this on site. Measure from the edge of the joint to the dowel on both sides: the bigger distance will always go to the top.



How do I ensure the dowels are correctly aligned?

Misaligned dowels can cause stresses in the concrete as it cures which result in cracking, so correct dowel alignment is very important. Signature incorporates square dowel bars and Permasleeve dowel sleeves – however, these are supplied loose and must be fixed into the product before installation begins. Specially-designed clips are provided for this purpose, and it is very important to use these to ensure correct dowel alignment. Unlike round dowel bars, our square dowel bars with Permasleeve allow two-way lateral slab movement while still preventing vertical movement, and will absorb small installation variances.

Why is Signature delivered with a pre-installed gap?

This is to guarantee a free opening of the joint without creating stress. The gap is 5mm along the straight edges, and it's 3mm along the diagonal vertices. This provides a sufficient gap to allow shrinkage when the lateral movement is greater than the horizontal shrinkage.

What would happen if the gap becomes filled with concrete, which could happen during a pour?

The gap is small enough to prevent large aggregates from entering during the pour. During finishing works, concrete laitance could be dragged across the top of the joint and into the gap – however, the viscosity of any laitance will be high enough so that it will not flow too deep into the gap. Any laitance that enters the joint will have low compressive strength, so will not prevent lateral movement from occurring, or inhibit the joint from opening.

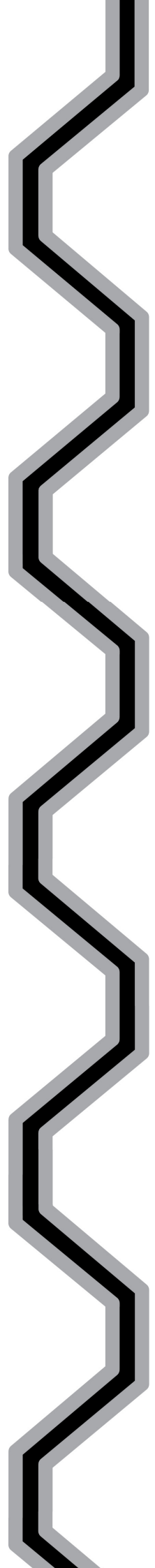
Can Signature be installed on floors which will be covered with resin after the concrete floor is installed?

Potentially, Signature can be used with a resin finish; however this is very market-specific. In the UK, a contractor would typically pour the concrete below than the finished floor level and the top of the joint. The concrete would typically only be float or pan finished, but not powerfloated as it then requires grinding so that the resin will bond to the concrete.

Because of Signature's shape, special preparation would be needed, and there would be maintenance implications too; so if you are planning a resin floor we'd suggest you contact us first so we can discuss it with you and advise you.

What is the concrete compaction like along the joint?

Signature is designed to minimise congestion around the anchorage bars and dowels. Compaction is optimised by using a vibrating poker along the joint, as is best practice with any other type of joint.



How do I make sure the edge is finished properly?

Signature has a more complex profile than standard armoured joints, so it does require a little more care and attention to achieve optimum results. Any overspill should be cleared from the second side of the joint. Hand-trowel the edge into the bulk of the slab and power trowel exactly as you would for any other construction joint. Some paste will inevitably spill over on to the second side of the joint. This breaks off easily and cleanly and must be removed before the adjacent pour is cast.

Can I grind across a Signature joint?

Signature has a 2mm wide face compared to 10mm for a typical armoured joint - so grinding the surface is generally less of an issue.

How do I apply a joint sealant?

Joint sealants are used to support the arris, prevent debris from entering, and to protect against high heels, etc, dropping into the gap. It is rare that sealants would be required with Signature. If they are deemed necessary, consult Permaban for an appropriate solution.

How does Signature perform at intersections with saw cut joints?

Unlike conventional armoured joints which have a studded top strip, Signature has more regularly bonding to the face of the slab. It also has a one-piece, full-depth plate. As such, there is no risk with flying ends and unanchored sections becoming loose. Saw cuts should be carried through the joint.

For further help, call our technical team on +44 1752 895288

