

The importance of dowels

Dowels perform the important job of load transfer between adjacent concrete slabs. Because a concrete slab only has around 50% of its load-bearing capacity at the edges, dowels are needed to support the slab, help bear and transfer weight and permit controlled movement of the two adjacent slabs (technically called the “approach and leave slabs”).

Plate dowels Vs Round dowels

Traditional round dowel bars only allow the concrete to contract in one direction. Plate dowels allow contraction of the slab in two lateral directions. One-way movement and the resultant corner ‘lock’ leading to cracking. Two-way lateral movement allows free contraction as the slab cures -no cracking. Traditional dowel bars have to be inserted through timber formwork making the removal of the formwork difficult. Plate dowels use a plastic sleeve that is nailed to the timber formwork making the formwork removal very simple. The dowel plate is simply inserted into the sleeve once the timber has been stripped away. No-fuss, no mess, just a clean and simple installation.



The product information given in this leaflet is a condensed, quick-reference guide. For full specifications, product options, health & safety guidance, please visit www.permaban.com, or contact us.



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Load transfer

We find that all our products have a substantially higher load transfer value per m than the round dowels. This can have the advantage of providing a thinned slab during design, that can save a tremendous amount of money as we place less concrete. This might not have an impact on 200 mm thick slab but could be crucial for external slabs with high loads.



DD and TD dowels are ideal for external slabs and square dowels for extension - DD and TD Dowels have several major advantages over round dowels. In external applications round dowels tend to move around during the construction process as they are placed almost randomly, this has the effect of locking the slab, preventing shrinkage and increasing the chance of cracking. Whereas due to the way diamond dowels are installed, you insure that all the dowels are perfectly aligned as it leaves “slots” in the slab that are perfectly horizontal.

Our comprehensive service

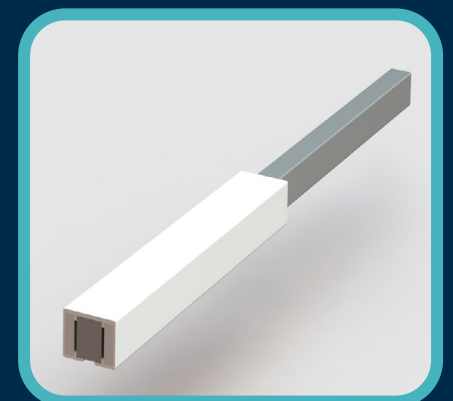
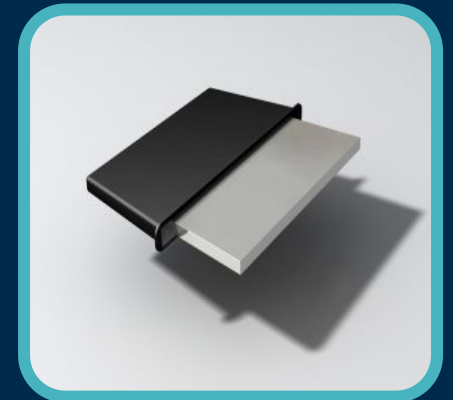
We are always happy to help specifiers and contractors with product choice and installation advice, including attending planning and site meetings.

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

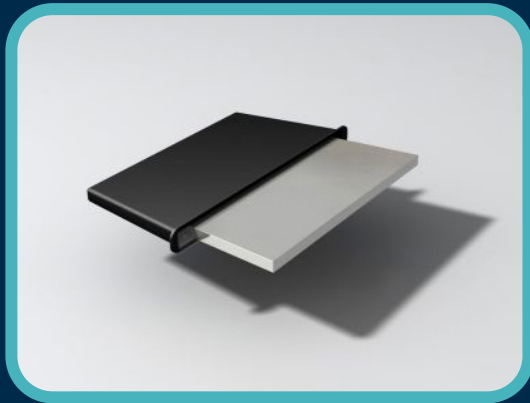
Visit www.rcrflooringproducts.com for details.



dowel systems quick guide



TD Dowels



TD Dowels

TD dowel plates offer excellent load bearing and resistance to bending and shear. It's easy to install – simply fix the dowel sleeve to the formwork on the first side, pour the concrete, remove the formwork, and insert the dowel plates into the sleeves before pouring the second side.

TD dowels are spaced at 600mm.
Available in 10mm dowel plate thickness.

Benefits

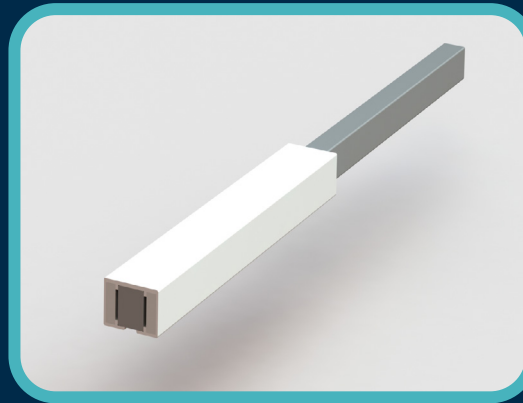
- Durable, efficient load transfer.
- Allows horizontal slab movement in two directions.
- Does not permit vertical slab movement.
- Quick and easy to install – no need to drill timber formwork.
- Safe on site, as there are no protruding dowel plates during the pour.
- Minimal chance of damage to the dowel plates on site, as they are installed just prior to the second pour.

Applications

- Suitable for reinforced suspended slabs, steel fibre jointless slabs, and heavily-loaded thick ground-bearing slabs.

- External slabs.

Square Dowel Bars



Square Dowel Bars

Our square dowel bars offer significant benefits over round dowels, with better resistance to bending and shear. The foam inserts in the dowel sleeve allow horizontal movement in two directions as the concrete contracts, but no vertical movement. The dowel sleeve also helps to reduce the risks and implications of misaligned dowels.

Square dowel bars are spaced at 300mm.

Benefits

- Durable, efficient load transfer.
- Allows horizontal slab movement in two directions.
- Does not permit vertical slab movement.

Applications

- Suitable for reinforced suspended slabs, steel fibre jointless slabs, and heavily-loaded thick ground-bearing slabs.

- Floor extensions.

Diamond Dowels



Diamond Dowels

Our diamond dowels are quick and easy to install and economical too. Designed for use with slabs on the ground, there's no need to drill holes in the timber formwork. Simply fix the dowel sleeve to the formwork on the first side, pour the concrete, remove the formwork, and insert the dowel plates into the sleeves before pouring the second side.

Diamond dowels are spaced at 450mm.
Available in 6mm and 10mm plate thickness.

Benefits

- Durable, efficient load transfer.
- Allows horizontal slab movement in two directions.
- Does not permit vertical slab movement.
- Quick and easy to install – no need to drill timber formwork.
- Safe on site, as there are no protruding dowel plates during the pour.
- Minimal chance of damage to the dowel plates on site, as they are installed just prior to the second pour.

Applications

- Suitable for ground bearing slabs.

- External slabs.