



Permaban's flagship new product is now being installed in buildings across the globe, from Russia to Mexico and beyond! But it first took shape in our Plymouth factory...

## Permaban Signature: from prototype to volume manufacture

Permaban manufactures steel armoured joints which are used to protect the construction joint gaps in large-scale industrial concrete floors, such as warehouses and factories. The parallel metal strips which can often be seen embedded in the floor of retail warehouses such as B&Q are actually Permaban's products in action! A leading name in its industry worldwide, Permaban has been manufacturing on its site at Lee Mill for 30 years, and its products are supplied to more than 50 countries.

In 2011 Permaban began to plan the launch of an exciting new product, branded Permaban Signature. It was radically different in both its appearance and technology from anything the company had produced before. Most of the company's products involve long straight steel strips – yet this design was to form an unusual corrugated shape (see right).

Having met our Managing Director Karen Friendship through the Plymouth Manufacturers' Group, Permaban MD Andrew Keen decided to draw on Aldermans' expertise to help design the tooling for the new product, and to advise on the product's manufacture.

### Tooling design

The project presented several challenges, most notably because of the precision required in ensuring the folds were correctly placed. The joint actually comprises two steel plates which separate once installed in the concrete (as pictured right). The tooling had to allow these plates to be folded simultaneously and with a high degree of accuracy, to ensure the two sides would nest snugly so that product would work in situ.

In total 14 folds were required over a 2 metre length, with a tolerance of only  $\pm 1.5\text{mm}$ , and hence there was a considerable amount of QA involvement and discussions with the client over several weeks to ensure this could be achieved. In May 2012 the tooling was ready to be brought into service.



## Component manufacture

The next step was to move towards full-scale production. The manufacturing process involved laser cutting the sheet steel to the required size, then power press folding the lengths of steel into shape.

Due to the specialist nature of this product, and the tooling required for production, Permaban decided to ask us to manufacture the corrugated elements of the product and supply these for in-house assembly at their Lee Mill plant.

Initially the quantities were uncertain; but as the product has gained in popularity we have seen regular production runs through our factory; and at times we have produced quantities at very short notice to help Permaban meet customer lead times.

## On-site assembly guidance

After the corrugated lengths arrive at Lee Mill they are assembled with other components into the finished product. Visiting Permaban's factory has been an important part of working with the client, not only to advise on assembly based on our knowledge of the product, but to see how the client actually uses the components, so we can look at further streamlining and improving our processes to better support Permaban.

## Tight quality control

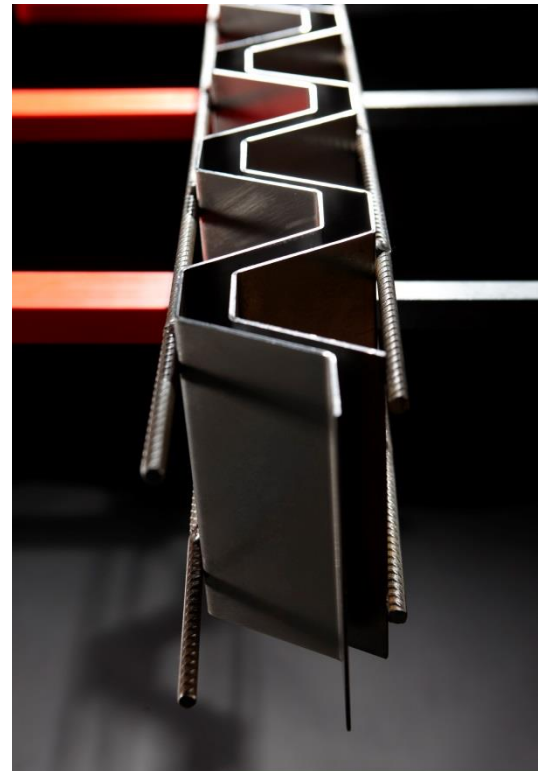
Now that production is well underway we are able to more tightly control the quality of the components to help minimise waste. With our Six Sigma trained staff we have been able to run some lean manufacturing projects to ensure quality is consistently maintained, and with the maximum efficiency.

## Award-winning product

Permaban launched the product at the UK Concrete Show in 2012, and was proud to win the accolade of Most Innovative New Product at the show. Sales have grown from strength to strength, and now the product represents a significant part of the company's sales, as well as opening doors into new markets. We're delighted to have played a key part in this success story.



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