

Plastic Sheet Piling

An effective and responsible use of waste plastic.
Ideal for retention, exclusion and scour protection.



JET FILTER
Europe



Tel 01543 677290 - 01543 277680 - 0845 5195197

Recycled PVC Plastic Sheet Piling

Plastic sheet piling consists of interlocking structural sheet piles made from recycled PVC. Used in a wide range of retention, exclusion, damming and to provide a hard edge to stop erosion and scour. Our products have been used on the waterways, railways and highways throughout the UK. Used successfully by major civil engineering contractors, waterways contractors, volunteers and the DIY market.

Isn't plastic a bad thing? This is something we hear very often, and it is true that over the years plastics have developed a bad environmental reputation. Be this in terms of the chemical by-products produced during the manufacture of the material or simply through the inappropriate use of these excellent long lasting materials, in very short term applications. The shorter the use, the longer the material spends as waste; the build up and ultimate uncontrolled breakdown of this waste does cause huge environmental issues.

PVC is one of the most widely used polymers in the world, found application in a wide array of industrial, technical and household uses, most typically the manufacture of profiles such as windows. PVC has inherent sustainability characteristics. It is made from common rock salt (57%) and hydrocarbons from oil (43%) making it far less oil dependent (with a lower carbon footprint) than other major thermoplastics. It is highly durable and energy efficient across a range of applications and is also highly resource efficient.

The biggest environmental concerns with PVC are all based around its first production, due to the high chlorine content. In terms of reuse only around 3% of waste PVC is recycled, and as such this creates a huge waste issue.

Therefore it is essential we look to recycle as much of this material as possible, and focus that recycled product to applications that need longer term solutions. If we use recycled PVC, we are not producing the chemical nasties and at the same time we are actively using up waste plastics. Plastics

already exists and we have a waste issue which we need to address; in an appropriate and responsible way. Plastic sheet piling is exactly that, using waste PVC in applications that needs long term solutions.

Sheet piles, timbers posts etc do not install themselves, every time you install such the process will naturally create plastic waste, from synthetic clothing to plastic wear components on the equipment. The more often you install a retaining, scour, flood, exclusions system the more energy you use and the more waste you produce.

Focus on products that last longer, will reduce the waste produced, and using recycled plastics reduces the waste we have. For example replacing a softwood structure, with plastic piling and use timber fascia, which provides a long terms structural solutions with the more easily maintained fascia.

THE Plastic Piling Company in one form or another has been involved with plastic piling in the UK for over 25 years. With a background and expertise in pile driving equipment, the focus of the range, is on products that can be installed efficiently; using regular pile driving equipment. Our range now provides a wide choice of Z, U and advanced plastic piling, sourced from wide range of suppliers throughout the world.

I am extremely proud of our range of sheet piling, particularly the versatility of the advanced range blurring boundaries of sheet piling with king post and formwork products. The ability to combine plastic with steel or timber products provides more options, and in turn more solutions.

The Plastic Piling Company have changed the perception of plastic piling, with products that do install efficiently, fulfilling the true potential of plastic piling.

David Coley

Managing Director The Hammerman Equipment Plastic Piling Company Limited

Generalised Properties of PVC

- Resistant to oxidative - does not rust like steel
- Resistant to biological agents - does not rot like wood
- Resistant to most mineral acids, bases, salts and paraffinic hydrocarbon solutions
- Not resistant to chlorinated or aromatic hydrocarbons, ester or ketones
- The cheapest of large-tonnage polymers - the best quality/price ratio
- Thermoplastic and will soften with heat
- Resistant to ignition due to its chlorine content
- Low weight
- Very recyclable, more so than many other plastics



What is plastic sheet piling?

Interlocking structural sheets made predominately from recycled PVC

Will last a very long time

UV Filters added

Water resistant

High chemical resistance

Economic and best value – maintenance free, no need to over specify

Good interlock water tightness

Safe working – Manual handling, not hot work

Fire Resistant and spark proof – universal use

Efficient transportation

Can be driven using impact and vibratory hammers

Frequently asked questions

What about UV?

Ultra violet light does degrade plastics, however the UV does not penetrate far into the material, around 50 microns. Therefore within the context of a plastic sheet pile with thickness from 5– 11mm, the influence on the sheet pile, is limited to surface hardening and cosmetic changes. From what we have seen over the last 20 years, the influence of UV makes the plastic surface more natural looking. All our plastic piles are supplied with a 50 year warranty that means the products will maintain their specifications for at least this period.

What about microplastics?

We do not consider this a major issue, cutting of plastic piling can produce sawdust, and proper house keeping or buying product to final lengths will minimize this. At some point all plastics will deteriorate, and in the case of PVC granulate. Plastic sheet piling will be installed in locations where it can be inspected and provision made for its replacement. The process of degradation takes several hundred of years, providing plenty of time to replace the piling and recycle. Consider the

alternative, dumping plastics at sea or landfill will lead to uncontrolled deterioration of those plastics in unknown locations.

What about installation?

Plastic piling is installed using a wide range of equipment including mauls, handheld impact hammers, air hammers., compactor plates, agricultural post drivers, excavator mounted vibrators, and in certain case hydraulic impact hammers. These supported with dangle drills / augers , our range of piling mandrels, and drive caps. In general we are very much vibration dependent, and this reflects upon which soil types the products can be driven into.

How does it compare to steel?

There is much difference across our range of plastic sheet piles, before we consider steel piling. That stated in terms of strength we compare well with trench sheeting (cold formed) and compete well with hot rolled for interlock watertightness.



THE Advanced range and THE Hybrids

“designed for performance and versatility”

Traditional U and Z piles design has been optimised for steel, the material, the production method and means of installation., and so it is not surprising that early plastic piling that replicated steel pile designs were not as effective. Once it was appreciated that sheet piling could utilise other shapes, a whole world of new possibilities were created enabling sheet pile design to be advanced, creating extremely versatile products.

MultiLock®—Sigma and Delta

MultiLock® is our biggest seller, the unique Hex tubes create much needed rigidity, enabling the plastic pile to both support a larger hammer and withstand the higher drive forces. The ability to then drive posts or tubes inside these Hex tubes, enables the system to be used in much more challenging ground conditions or using smaller equipment. The plastic sheet pile driven in 500mm into the ground, with the post or tube at least a depth equivalent to the retained height. MultiLock® is available in two options, the original Sigma and the new Sealed Delta profile, providing improved watertightness.



ProLock Omega

ProLock Omega plastic piling has an exceptionally attractive flat front, and so has provide very popular in landscaping and marina basin applications. ProLock has recently been modified to accept 160mm diameter posts.

The flat front also proves extremely useful in sealing applications working with membranes.

Advanced Hybrids

Combining Plastic Piling with softwood, hardwood, Bamboo tubes, steel tubes, gravels and or concrete

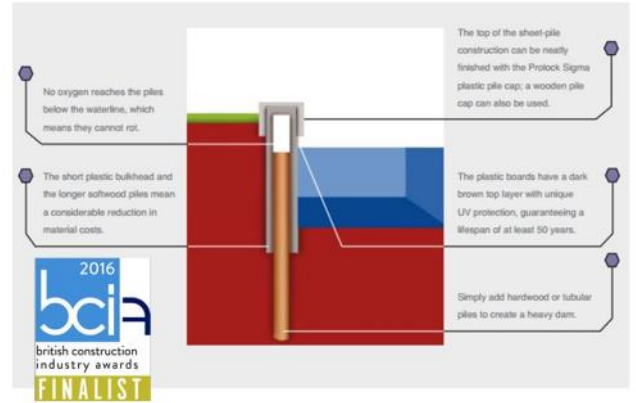
Combining the best properties of materials and methods

Faster installations

Installed using smaller equipment

Lowest Carbon Footprint

Sheet Piling – King Post - Formwork



Truline

Top of the advanced range is Truline modular hybrid piling. This system is now more commonly used as permanent formwork with its inside filled with steel reinforced concrete.

This is again a flat fronted product and so extremely attractive, is available with other modules such as male and female ends, cross struts and angle elements for corners and curvature.



Economy and Light Duty piles

The Economy range of plastic piles are traditional the first types of plastic piles used in the UK and still remain popular for applications such as Ditch blocking.

The EcoZ, the original plastic piling can be used in two formats, over time these have been referred to as box or rib; the former is the standard way z piles are used, and so creates a U shape through alternation of the profiles. This box design maximises the strength of the sections, through the provision of a deeper cross section and higher section modulus. The rib configuration in contrast provides maximum coverage and is also a more stable orientation for the thinner budget pilings as there is less change of buckling due to slenderness issues,

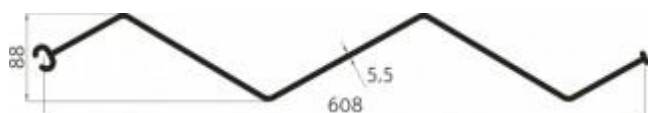
The Europile in contrast provides the same coverage and maximum strength, exemplifying why this product has effectively replaced the EcoZ box type profiles. In much a similar way the new DuoRib, offers superior rib design, with greater coverage, rigidity, all at a lower price.

DuoRib has fast become one of our biggest sellers.

Duo-Rib vs EcoZ Rib



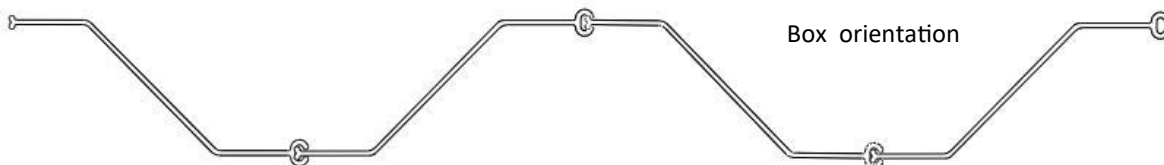
- One less interlock = less material = less cost
- One less interlock = better sealing
- Wider pile = greater rigidity



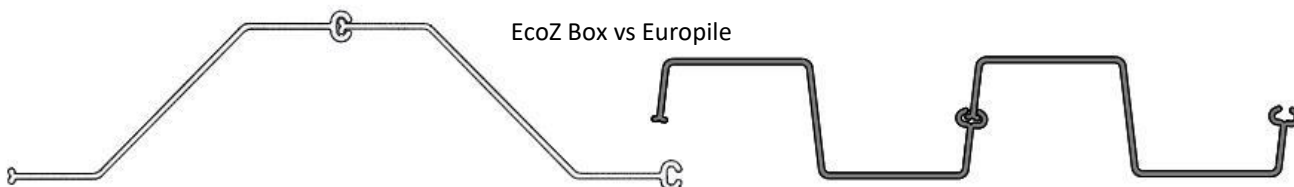
Z-Rib orientation



Box orientation



EcoZ Box vs Europile



Heavy Duty Traditional U and Z piles



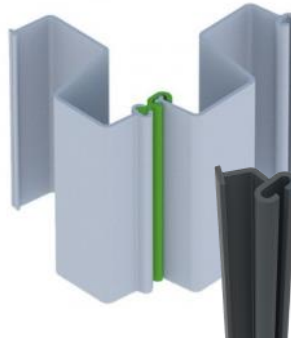
We offer a very comprehensive range of Z piles up to 11mm thick and 575mm wide.

Our U piles range from 460mm through to 735mm (the new Epsilon), up to a 9mm wall thickness.

Sheets are available in lengths up to 12 metres.

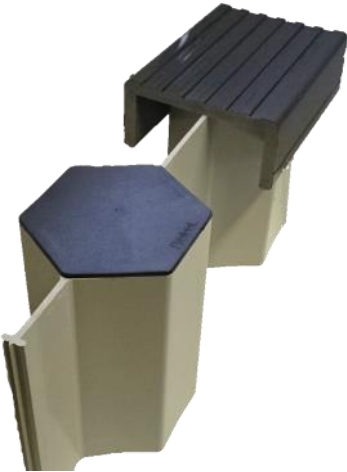


Corner piles and 4 way connectors



Capping

Plastic capping provides an excellent way to complete a sheet pile installation. Improving aesthetics, whilst making it easier for wildlife to cross. The one limitation of plastic piling capping is that it is very rigid and as such is well suited to straight runs, rather than curves. For curved or meandering designs, we offer plugs for our biggest seller MultiLock.



Soft PVC Fenders

These are new to our range and work well with our pile capping and of course, our flat frontage products. The soft PVC provides impact resistance to a sheet piled structure as it help dissipate the energy of the impact.

