

# Plastic Piling Hybrids for Bank stabilisation

## APE Plastic Piling

The advantages of sheet piling as a solution to Bank stabilisation are well known, for instance banks edges are vertical rather than sloped, so the sheet piled solution is much more compact, and can be used in tightly restricted areas. Combine this with the fact that unlike many alternative methods such as gabions there is little to no site preparation.

However the expense of steel or the large equipment required tends to diminish these key technical advantages. Plastic Piling is a new form of sheet piling that offer substantial longevity and economy over conventional methods.

This in recent years was highlighted by Dr Derek Carder of The Transport Research Laboratory (TRL), who conducted major research into the use of Plastic Piling and has published a report into their findings, Guidance on the Structural Use of Plastic Sheet Piling in Highway Applications (ref: TRL 533). A copy of this research is available by contacting the TRL. The basis of this report illustrated a great potential for plastic piling within this application - although with limited experience at that time, in terms of installation, this potential would not be realised.

**It is clear that Plastic Sheet Piling does have a great potential** to all bank stabilisation applications, be this soil to soil environments, such as railway or carriageway embankments, or soil to water environments such as those on the waterways or drainage channels.

This **potential can finally be realised** as APE's range of Plastic sheet piling provide a comprehensive choice of piles, covering a full spectrum of load carrying abilities, with a proven track record of sheet installation.

APE have now taken this a stage further, in meetings with the TRL, it became clear that a huge economic benefit would result from a tiered retaining wall structure along embankments, that was capable of being installed from the embankment using small excavators or hand held equipment. Much in the way that timber fences are constructed next to agricultural land. Simple post drivers working off tractors or manually installed. This type of method would negate the need to close the hard shoulder or even lanes of the carriageway or track.

This is only possible with APE's hybrid technology ProLock MultiLock and Truline. These three products are part of APE's advanced range of plastic sheet piles. These are the first plastic piling products to really take advantage of the fact that they are made from plastic, and the products are designed to be sheet piles, rather than follow convention which deemed it more important that the product looked like a sheet pile!

To understand the system consider a 2m retaining wall; convention would state that the contractor install at least a 4m sheet pile, if not a 6m, the majority of this pile driven into the ground and where necessary tiebacks and anchors used to provide additional support.

MultiLock can achieve the same, but through the use of a 2.5m pile, combined with a 4-6m timber post or steel tube. This combination or hybrid design provide a king post solution using a sheet pile. Crudely put this is a sheet pile system held in place by fence posts ..... See where we are going with this?

Yes, the products can be installed quicker and easier using smaller more manual equipment, as the primary "pile" is the post or tube inside the plastic sheet pile. Regardless of the soil conditions, it is easy to appreciate how narrow diameter tubes or posts will be much easily driven as there is far less skin friction.

A new twist on this will be the introduction of the new Movax Lite side driving vibrator, that will fit to a 5 tonne mini excavator and has been shown to drive 6m lengths of plastic piling without caps or mandrels!

APE Plastic Piling advanced pile elements and the equipment needed to install!



## MultiLock



## ProLock



## Truline



## Aldridge Piling Equipment

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