

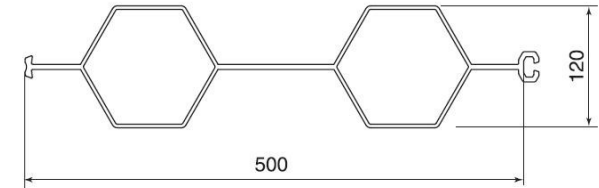
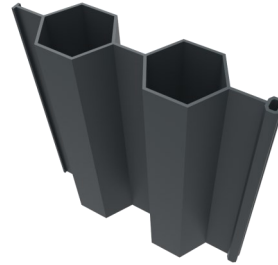
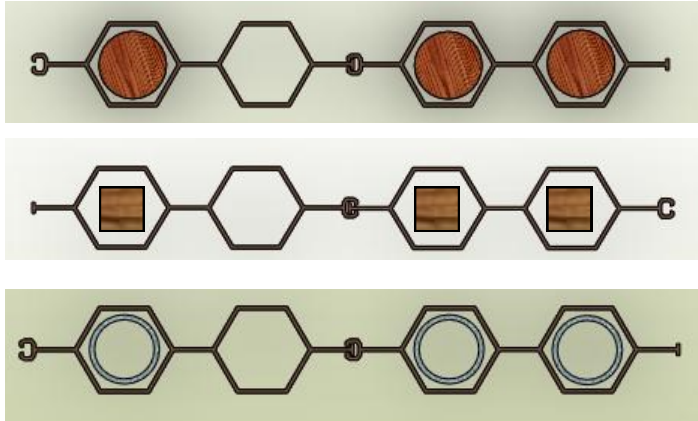


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## MultiLock Plastic Pile Specifications



The MultiLock product can be used on its own as a conventional sheet pile or can be used as a king panel with timber or steel inserts. The use of timber or steel will increase the bending moment of the piled wall. Information on how to establish the combined bending moment is shown overleaf. In the table below the data has been structured to indicate the number of piles, plastic timber or steel required or permissible over a linear distance of 1 metre. This is important as the bending moments and section modulus stated are relative to units per metre.

Pile		MultiLock	Softwood Post		Hardwood Post		Steel Tube			
Quantity per metre wall		2	2	4	2	4	2	4	2	4
Allowable Bending Moment (M) Short / Long term	kNm/m	<b>3.94</b>	<b>2.24 / 1.92</b>	<b>4.47/3.83</b>	<b>4.27/ 3.66</b>	<b>8.54/7.32</b>	<b>7.91</b>	<b>15.81</b>	<b>12</b>	<b>23.99</b>
Section Modulus (Z)	cm <sup>3</sup> /m	175	196	393	146	293	33.6	67.3	51.1	102.1
Moment of Inertia (I)	cm <sup>4</sup> /m	1050	982	1963	556	1112	150	299	227	454
Flexural Stiffness EI Serviceability / Ultimate Limit State	kNm <sup>2</sup> /m	24	88/39	177/79	68	137	314	628	477	953
Flexural Strength f <sub>m, kar</sub>	Mpa	60								
Design Flexural Strength f <sub>u; d</sub>	Mpa	22.5								
Modulus of Elasticity (E <sub>rep</sub> ) Serviceability / Ultimate Limit State	Mpa	2300	6000 / 9000		11800 / 14000		2.1 E+8		2.1 E+8	
Effective Pile Width	mm	500								
Depth/Diameter of Section	mm	120	100	100	76 square	76 square	88.9	88.9	88.9	88.9
Thickness (if Section or Tube)	mm	5					3	3	4.85	4.85
Material (Strength Class)		PVC	C18	C18	D50 Angelim	D50 Angelim	Steel FeE235			
Weight per m (product)	Kg	6.2								

# Bending Moments and Hybrid

MultiLock alone has a bending moment of 3.94 kNm/m, the manufacturers and their design engineers Geoconsult Noord, have based the product concept on an additive method, when used as a hybrid system with timber or steel; where both pile and post or tube are present. Note in a king panel design, there are clearly regions of the wall which are solely the tube or post. With two hexagonal tubes built into its design, either or both of these can be used, so long as the space between post/tube does not exceed 50cm. See below for examples

Pile Options	MultiLock	MultiLock plus 1 C1 8timber post	MultiLock plus 2 C1 8timber post	MultiLock plus 1 88.9mm OD 3mm Steel Tube	MultiLock plus 288.9mm OD 3mm Steel Tube
Bending Moment	3.94	3.94 + 2.24	3.94 + 4.47	3.94 + 7.91	3.94 + 15.81
Total Bending Moment	3.94	6.18	8.41	11.85	19.75

Independent Analysis by the Caparo Innovation Centre, commissioned by THE Plastic Piling Co, has stated where a design needs to be considered as conservatively as possible, the bending moments of hybrids should be based upon the stiffer of the two elements alone, as this will be supporting the loads, rather than a distribution between pile and post. In this more conservative approach the bending moment is based on a single element and so hybrid benefits are not taken into account.



No oxygen reaches the piles below the waterline, which means they cannot rot.

The top of the sheet-pile construction can be neatly finished with the Prolock Sigma plastic pile cap; a wooden pile cap can also be used.

The short plastic bulkhead and the longer softwood piles mean a considerable reduction in material costs.

The plastic boards have a dark brown top layer with unique UV protection, guaranteeing a lifespan of at least 50 years.

Simply add hardwood or tubular piles to create a heavy dam.