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# TRISOLOCK

VINYL SHEET PILES

Maintenance-free and  
ecological solutions  
by Trislock®



Designed for many years of use

[www.gidmilieutechniek.com](http://www.gidmilieutechniek.com)



TRISOLOCK® VINYL SHEET PILES ARE MADE FROM RIGID POLYVINYL CHLORIDE MODIFIED WITH AGENTS FACILITATING PROCESSING, IMPACT RESISTANCE MODIFYING AGENTS, THERMAL AND UV STABILISING AGENTS AND MINERAL FILLING MATERIALS. THE SHEET PILES ARE MANUFACTURED BY APPLYING THE EXTRUSION MOULDING METHOD AS MONOLITHIC PROFILES OR THE CO-EXTRUSION MOULDING METHOD WITH THE CORE MADE FROM THE MATERIAL OBTAINED THROUGH RECYCLING CONSTRUCTION TYPE PVC, COVERED WITH A LAYER OF THE PRIMARY PLASTIC MATERIAL. THE STANDARD COLOUR RANGE INCLUDES GREY, OLIVE AND BROWN. THERE IS A POSSIBILITY TO ORDER SHEET PILES IN RAL COLOURS.



Light and easy to install with the use of standard tools;



High durability, very good mechanical and endurance parameters;



Cheap - savings of up to 40% on materials, installation and transport services;



Ecological solution - the product contains material obtained from the recycling of structural PVC with the possibility for further processing;



Long-term protection without the need for maintenance thanks to the material being highly resistant to:

- Bio-corrosion
- Rust
- Cracking
- Scratching
- Abrasion
- Sea water
- Harmful UV rays



Clean, simple and aesthetic appearance is made possible thanks to practically invisible coupling;



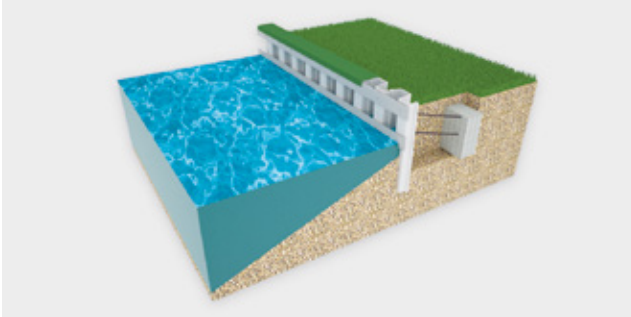
Simpler installation compared to other sheet piles of this type thanks to the unique flat-surface project;



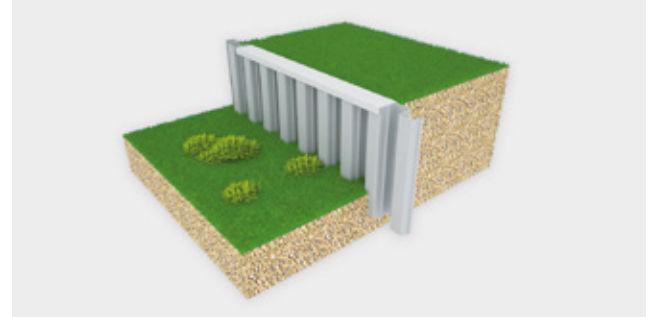
Easy to form interior and exterior curves matching the natural shore lines, e.g. in river engineering.



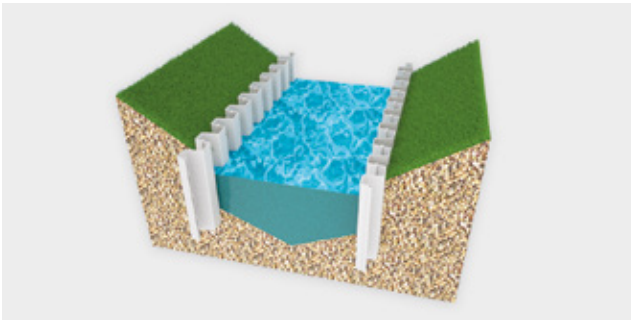
### Possibilities for vinyl sheet piles application



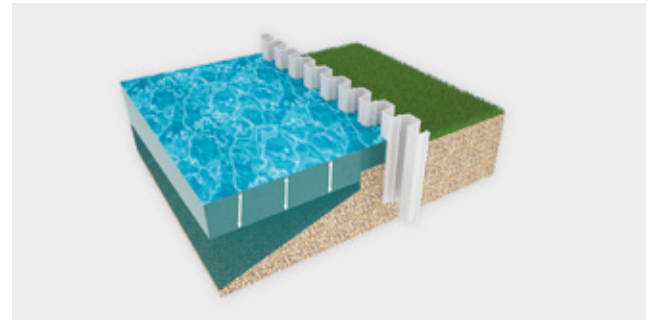
**1** Sheet piles and cut-off walls (with or without propping) to secure the banks of water channels and reservoir.



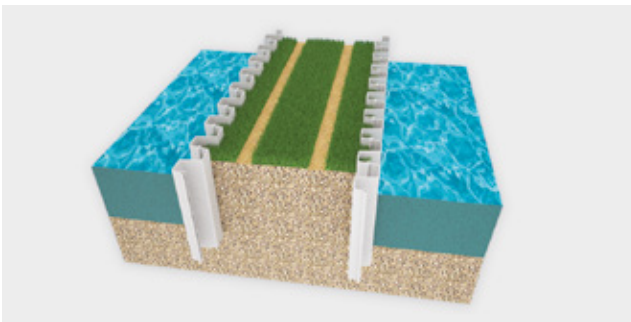
**5** Retaining walls. Securing excavations, landslides and slopes.



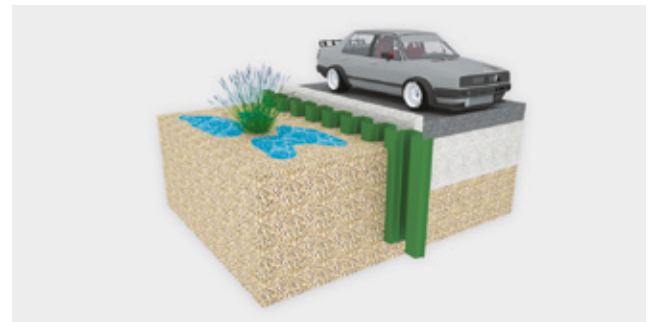
**2** Regulation of beds of rivers, canals (i.e. irrigation channels), reservoirs.



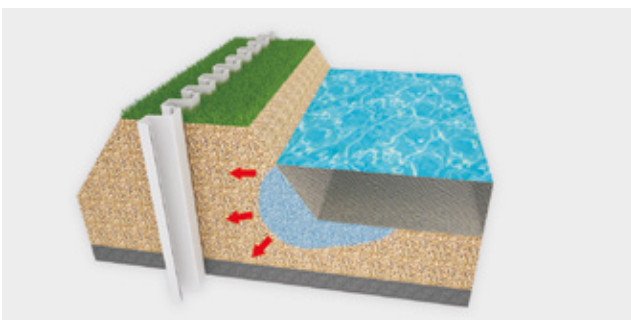
**6** Securing places with a variable water level.



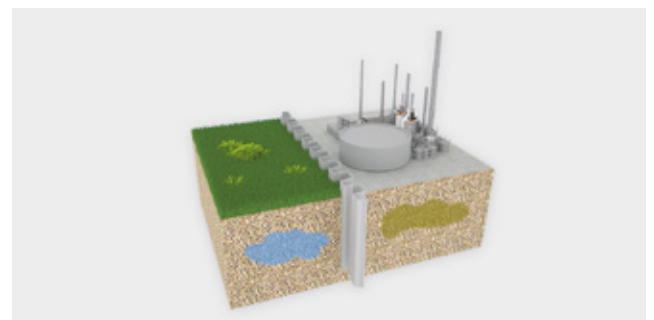
**3** Building and improving dykes.



**7** Cut-off walls. Shields limiting groundwater infiltration.



**4** Securing flood banks.



**8** Cut-off walls in ecologically vulnerable areas.



## Installation methods

### Driving

The most commonly used method, in which sheet piles are mechanically pressed into the soil with the use of vibratory hammers along the pre-installed templates. In order to fully protect the piling against damage, light equipment with small impact energy is used. The type of the equipment used is dependent on the type of soil, the depth of the cavity and the durability of the sheet pile. The key to a successful installation in hard, dense surfaces, and in ramming long elements, is the use of special guide bars called mandrels. Side or front mandrels work best. You can also use multiple mandrels that allow you to mount several pilings at the same time. This is a steel element in the shape reflecting the rammed vinyl sheet pile. Mandrel length must match the length of the rammed PVC elements.

### Advantages of using mandrels

- Enables ramming sheet piles in very difficult soil environments (compact silt, clay, gravel)
- Enables installation of long profiles, even up to 12 m
- Prevents sheet piles from cracking while being driven
- Removes obstacles found in soil (roots, stones)

- Helps to maintain straight lines
- Ensures pre-loosening of soil
- Multiple mandrels significantly accelerate installation work

### Jetting

A method used in the installation of sheet piles in very cohesive or heavily compacted soils. The jetting technique aims to create pressure directly under the foot of the sheet pile, which will loosen and remove the ground under the profile.

### Trenching

A method used in the construction of a pile wall with a small cavity. Sheet piles are installed in the previously dug out trench, which is then filled on both sides of the wall with a ballast selected in the design.

## Technical conditions of application

The application of vinyl sheet piles in construction should be in compliance with technical documentation drawn up in accordance with the binding norms and provisions and approved in the prescribed mode. Safeguarding made from vinyl sheet piles should be made precisely in accordance with the designer's guidelines and the manufacturer's recommendations.

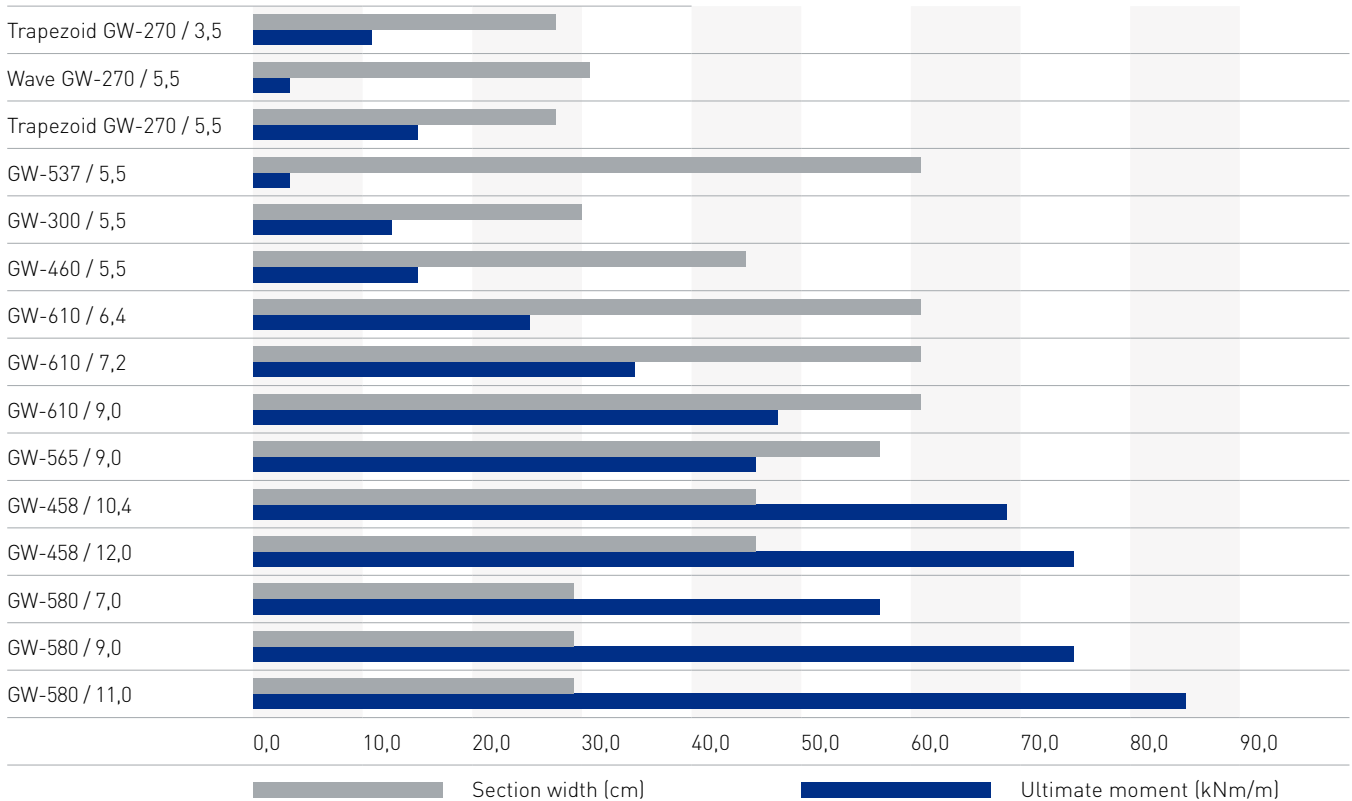
The Trisolock® vinyl sheet piles supplied by us have various profiles and various applications, but all of them are made of the same high quality material. It is the use of the right

raw material that determines some of the relevant physico-chemical parameters. The following table shows the characteristics of all types of profiles excluding the bumper:

### Products and parameters

	Unit	Standard	Value
Density	kg/m <sup>3</sup>	PN-EN ISO 1183-3:2003	1400 - 1480
Charpy impact test	kJ/m <sup>2</sup>	PN-EN ISO 179-1:2004	≥ 30
Shore durometer	Shore'a D	PN-EN ISO 868:2005	≥ 75
Softening point Vicat method	°C	PN-EN ISO 306:2004	≥ 82
Tensile strength	MPa	PN-EN ISO 527-2:1998	≥ 44
Tensile modulus of elasticity	MPa	PN-EN ISO 527-2:1998	≥ 2600
Bending modulus of elasticity	MPa	PN-EN ISO 178:2006	≥ 2600
Bending strength:	MPa	PN-EN ISO 178:2006	
• Before thermal ageing			≥ 71
• After thermal ageing (20 h, 100°C)			≥ 70
Resistance of climatic ageing, after energy 2,6 GJ/m <sup>2</sup> radiation	%	PN-EN 513:2002	
• Resistance of changing dye		PN-EN ISO 4892-2 met A.	Not less than 4 in gray scale
• Charge of Charpy impact		PN-EN 20105-A03:1996 PN-EN ISO 179-1:2004	≤ 30

### Comparison of key parameters of the Trisolock® vinyl sheet piles





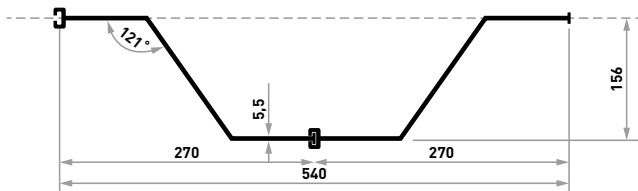
**Productoverview**

	<b>Cross-section width (mm)</b>	<b>Cross-section height (mm)</b>	<b>Wall thickness (mm)</b>	<b>Resistance torque (cm<sup>4</sup>)</b>	<b>Inertial torque (kNm/m)</b>	<b>* Maximum acceptable torque (kNm/m)</b>
Trapezoid TL-270 / 3,5	270	150	3,5	2327	5,6	11,2
Wave TL-270 / 5,5	309	88	5,5	385	1,9	3,8
Trapezoid TL-270 / 5,5	270	150	5,5	3266	8,1	16,3
TL-537 / 5,5	608	88	5,5	382	1,9	3,8
TL-300 / 5,5	300	115	5,5	1842	7,0	14,1
TL-460 / 5,5	460	130	5,5	2527	7,6	15,8
TL-458 / 10,4	458	254	10,4	20718	33,9	67,8
TL-458 / 12,0	458	254	12,0	22534	37,1	74,2
TL-565 / 9,0	565	245	9,0	12768	22,9	45,8
TL-580 / 7,0	290	240	7,0	15429	27,0	54,0
TL-580 / 9,0	290	240	9,0	18739	32,2	64,3
TL-580 / 11,0	290	240	11,0	21851	37,6	75,3
TL-610 / 6,4	606	180	6,4	5325	13,0	25,9
TL-610 / 7,2	606	200	7,2	7724	16,0	32,1
TL-610 / 9,0	606	230	9,0	12766	23,7	47,4

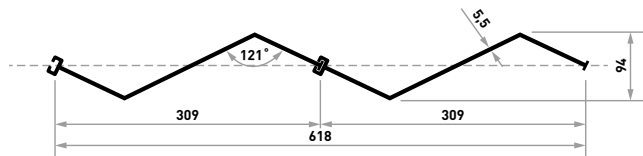
For all profiles:  
E-Module: 1500 N/mm<sup>2</sup>  
Yield strength: 40 N/mm<sup>2</sup>

\* safety factor 2

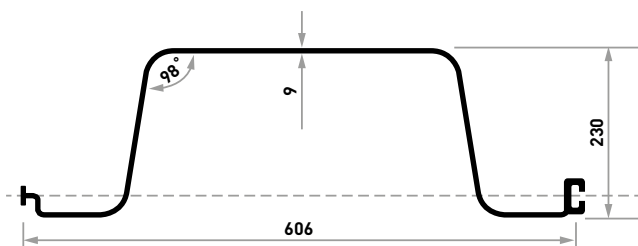
Trapezoid TL-270 / 5,5



Wave TL-270 / 5,5



TL-610 / 9,0



### Implemented investments

Trisolock® sheet piles have been manufactured for almost 10 years for customers in locations varying from South America,

through Europe, Eastern Europe to the Far East. Our products are valued not only for global quality, which is confirmed by the parameters, but also for their competitive prices.



Sealing of the flood embankment.



Anti-erosion protection of the river-bed.



Retention tank by the motorway.



Yacht harbour.



Modernization of the railway line.



Protection of the seawall.



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