

2024
EDITION

VINYL SHEET PILE PRODUCT CATALOG

FLOOD CONTROL | RIVER BANK SHORING
MARINE STRUCTURES | WATER CUT-OFF SYSTEMS



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ESC Group
App

ESC VINYL SHEET PILES

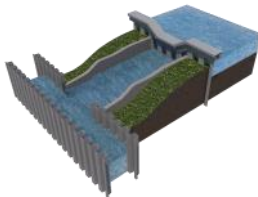
INTRODUCTION

ESC Vinyl Sheet Piles also known as PVC Sheet Piles are a modern alternative for your project. They offer a lower cost than steel, wood or concrete alternatives. The ESC Vinyl Sheet Pile is a strong, lightweight, UV and impact resistant product. The product is inert does not rust, corrode or crack. The ESC Vinyl Sheet Pile retains its structural integrity for decades.

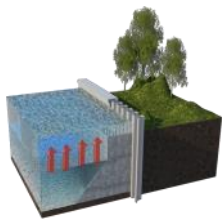
APPLICATIONS



CONTAINMENT & CUTOFF SYSTEMS



WATER CONTROL



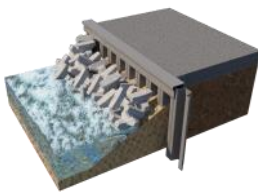
FLOOD CONTROL



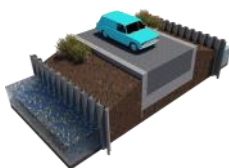
MARINE STRUCTURES



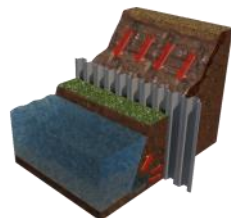
RETAINING WALL



REVTMENT WORKS



EMBANKMENT WORKS/ROAD CONSTRUCTION



EROSION CONTROL

Containment & Cutoff Systems

ESC Vinyl Sheet Piles are frequently the optimal solution for fluid containment projects as they are made of an inert material that can exhibit superior chemical resistance and water corrosion resistance. The interlocks of the sheet pile can be coextruded with a sealing membrane that further improves cut-off performance. Alternatively, a hydrophilic sealant can be applied for swelling in contact with water.

- Groundwater cut-off
- Chemical containment
- Fluid Seepage Barriers
- Protection of Foundation Structures

Water Control Systems

ESC Vinyl Sheet Piles can be utilized for water control structures that function by altering the flow of water in a pond, drainage channel or stream.

- Baffle Walls for water or waste water flow control
- River Weirs
- Channel Linings for agricultural applications
- Pond linings
- River Diversion
- Mining drainage systems

Flood Control Systems

ESC Vinyl Sheet Piles can be utilized for flood protection structures such as Flood Walls or Levees, Stabilization of Dams, Protection of Piping.

- Flood Walls / Flood Levee
- Stabilization of Dams
- Protection of Piping

Marine Structures

ESC Vinyl Sheet Piles provide an excellent option for a long lasting seawall due to their superior corrosion resistance, aesthetic finish and lightweight profile for easy handling and installation.

- Marine Bulkheads & Seawalls
- Tide Walls
- Breakwaters
- Wave Breaks
- Jetty Structures
- Groins
- Scour Protection



ESC VINYL SHEET PILES

ADVANTAGES

- ✓ **50+ year design life** - Due to its superior corrosion resistance, ESC Vinyl Sheet Piles can be installed with confidence in their structural integrity and appearance even after 50 years
- ✓ **Cost Efficiency** - both from installation and long term cost savings due to superior corrosion resistance and lower price per unit metre material
- ✓ **UV Resistance** - The PVC material is engineered with special compounds for resistance to harmful ultraviolet rays
- ✓ **No toxic coatings** - No coatings are required, which may be detrimental to the environment
- ✓ **Not Affected by Marine Borers** - Small mollusks or crustaceans in the ocean can cause devastating effects over a period of time to traditional timber piling. Vinyl Sheet Piling offers an attractive alternative that is unaffected by these organisms.
- ✓ **Easy Installation** - Compared to steel sheet piles, vinyl sheet piles can be up to 40 times lighter per square meter making it much easier to handle. Driving can also be completed under certain conditions by pressing down with an excavator or a impact vibrohammer.

INSTALLATION GUIDELINES

Please refer to our informative Installation Guidelines manual which can be download from the ESC website for detailed and easy to understand descriptions for safe and effective vinyl sheet pile installation.

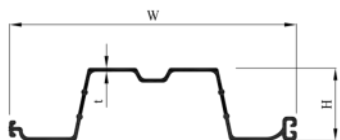


COMPARISON TO OTHER MATERIALS

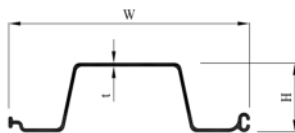
	Vinyl (PVC)	Steel	Concrete	Wood
Cost	Low	High	Medium	Low
Weight	Light	Heavy	Very Heavy	Medium
Resistance to Corrosion	High	Low	N/A	N/A
Resistance to Chemicals & Sea Water Environment	High	Low	High	Low
Resistance to Cracking & Spalling	High	High	Medium	N/A
Environmentally Friendly	Yes	Yes	No	No
Aesthetics	High	Low	Medium	Medium
Installation	Easy*	Easy	Difficult	Moderate
Design Flexibility	High	High	Moderate	High



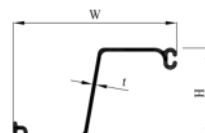
PROFILE RANGE



ESC-VU SERIES



ESC-UGW SERIES



ESC-ZGW SERIES

Section	Width (w) mm	Height (h) mm	Thickness (t) mm	Elastic Section Modulus cm ³	Moment of Inertia cm ⁴	Ultimate Bending Moment kNm	Allowable Bending Moment kNm
ESC-VU718-7.5	718	180	7.5	476.0	4,524.40	19.6	9.8
ESC-VU718-8.0	718	180	8.0	498.1	4,838.30	20.9	10.5
ESC-VU718-9.0	718	180	9.0	551.5	5,294.50	23.2	11.6
ESC-VU718-10.0	718	180	10.0	592.2	5,756.20	24.9	12.4
ESC-VU718-11.0	718	180	11.0	648.4	6,159.40	27.2	13.6
ESC-VU760-6.0	760	180	6.0	405.3	4,043.80	17.0	8.5
ESC-VU760-7.0	760	180	7.0	446.6	4,466.30	18.8	9.4
ESC-UGW457-6.3	457	152	6.3	217.6	1,665.19	9.9	4.9
ESC-UGW525-8.0	525	150	8.0/10.0	282.5	2,420.00	10.0	5.0
ESC-UGW610-9.0	622	230	9.0	658.1	7,736.10	29.0	14.5
ESC-UGW610-8.5	622	230	8.5	662.0	7,809.0	27.8	13.9
ESC-ZGW270-5.5	270	150	5.5	99.8	869.9	4.4	2.2
ESC-ZGW460-10.5	458	254	10.5	669.6	8,812.40	31.1	15.6
ESC-ZGW460-11.18	457	254	11.18	651.1	8,280.20	29.1	14.6

PILE CAP



Type	G2	
Length	mm	288
Length 1	mm	258
Height	mm	85
Thickness	mm	6
Tensile Strength	MPa	40
Bending Strength	MPa	290

JUNCTION/CORNER CONNECTION



TA 75*50*6
TA 84*60*8
TA 94*70*10N



TC 106*68*6
TC 120*78*8
TC 134*88*10

COLOUR OPTIONS



GREY (STANDARD)



OLIVE GREEN OR BROWN



ANY COLOUR (SUBJECT TO
MINIMUM ORDER QUANTITY)

ACCESSORIES

- ✓ Sheet Pile Cap
- ✓ Tie Rods
- ✓ Waling Channels/Beams
- ✓ Installation Mandrel
- ✓ Driving Cap
- ✓ Driving Guide



PRODUCT PHOTOS



INSTALLATION MANDRELS

SLEEVE MANDREL

Description

A steel sleeve welded to a steel pile head that fits over the Z pile pair or single Omega pile. The sheet pile is typically horizontally slid onto the sleeve and clamped on by screw. Then it is lifted over and driven down. Once the design depth is reached or further penetration is refused, the steel mandrel is withdrawn leaving the vinyl sheet pile in place.

Equipment Required

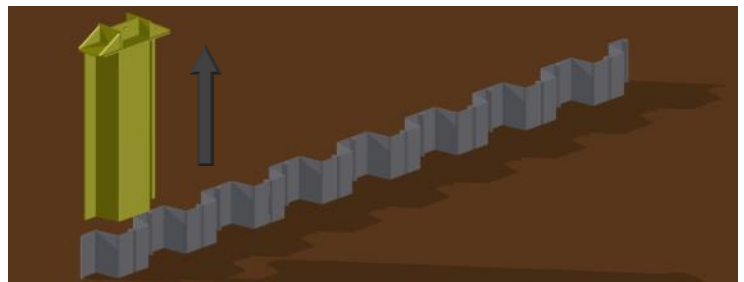
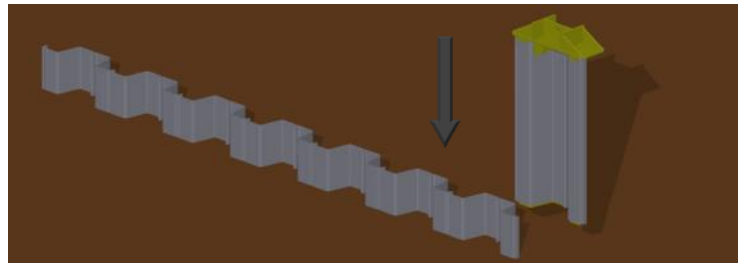
Vibrohammer (excavator or crane mounted), Crane or Excavator.

Suitable for

Slightly more difficult soil conditions where driving the vinyl sheet pile directly is not possible. Also suitable for longer sheet piles with thinner profiles.

Advantages

Can penetrate more difficult soils without potentially damaging the vinyl sheet pile

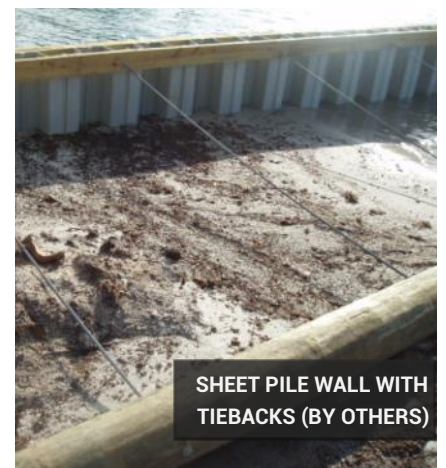


ANCHORING

Vinyl Sheet Piles can be anchored for applications which have a retaining purpose higher than which a cantilevered sheet pile can resist. These are typically anchored via steel threaded bars that can be tensioned against anchor piles or blocks behind the slip plane of the soil. These anchor piles or blocks are typically made of reinforced concrete, PVC or timber. To effectively transmit the dispersed retaining loading to the anchor rods and pile/block a waling channel on the sheet pile side is used.

It is very important that the anchors are situated sufficiently far back from the slip plane or active wedge of the soil. This plane is the natural angle the dirt settles too if unsupported and the anchor must be behind that plane. The design engineer typically specifies in the plan drawings how far back and the size and frequency of these anchors. It is important the installer ensures that there is safe access to the anchor attachments at both ends (and possibly in between if there is a turnbuckle in the middle).

SHEET PILING WITH 2 LEVELS OF ANCHORING



SHEET PILE WALL WITH TIEBACKS (BY OTHERS)

PROJECT PHOTOS





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