



DuraWall

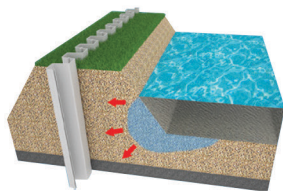
PVC SHEET PILING



*Environmentally Friendly
UV Resistant • Easy to Install
Long Life • Cost Effective*

**THE BEST
VALUE IN
SHEET PILES**

APPLICATION



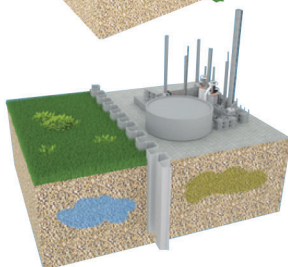
Strengthening Flood Walls

Durawall PVC Sheet Piling are used more and more frequently in the construction of flood walls. They significantly strengthen and increase the durability and tightness of the structure, preventing water leaks during floods.



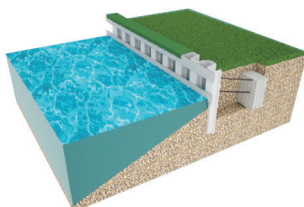
Cut-Off Walls

Durawall PVC Sheet Piling can be used to protect places with variable or raised groundwater level. Durawall PVC Sheet Piling efficiently reduces water infiltration as well as secures the terrain against gradual erosion and degradation.



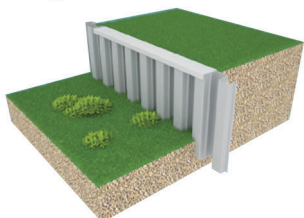
Cut-Off Walls in Ecologically Threatened Areas

Durawall PVC Sheet Piling may be used to separate water reservoirs or groundwater from environmentally challenged places (for instance, in the vicinity of landfills and factories).



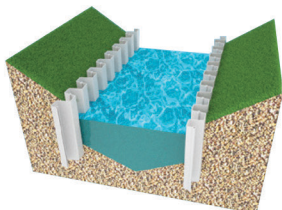
Sheet Piling and Cut-Off Walls with a System of Stays

Durawall PVC Sheet Piling may be used to separate water reservoirs or groundwater from environmentally challenged places (for instance, in the vicinity of landfills and factories).



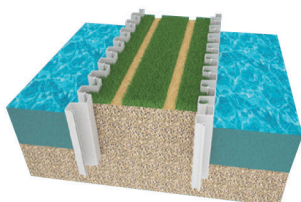
Retaining Systems

Durawall PVC Sheet Piling may be applied to protect slopes, landslides and various excavation sites. The retaining system not only secure them, but also allow for easy and aesthetic shaping of the given terrain.



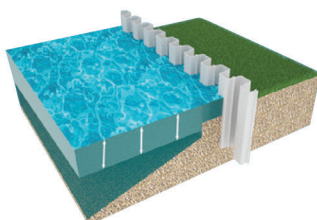
River Bank Protection and Regulation

Durawall PVC Sheet Piling may be used to protect and regulate rivers, ditches or channels. Thanks to their structure, Durawall PVC Sheet Piling can easily adjust to the natural curvatures of the terrain.



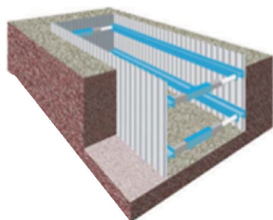
Causeways

Durawall PVC Sheet Piling may be used in the construction of causeways at water reservoirs resulting in their higher durability and better resistance of the whole structure against scouring.



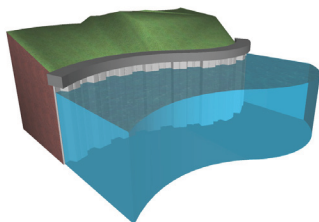
Protection of banks with variable water levels

Tightness, combined with aesthetic look, allows for the use of Durawall PVC Sheet Piling which protect the banks with variable water levels. The system always blends in perfectly with the surrounding area.



Permanent Shoring

Durawall PVC Sheet Piling can be used temporary or permanently shoring construction excavations.



Golf Course

Durawall PVC Sheet Piling is ideal for creating artificial ponds and streams for Golf courses. Supporting the surrounding earth on the course design.

ADVANTAGES

Cost

Durawall PVC Sheet Piling is much lower in cost than any alternatives.

Weight

Durawall PVC Sheet Piling is much lighter and easier to ship and handle than any alternatives.

Resistance To Corrosion

Unlike steel, Durawall PVC Sheet Piling will never rust.

Resistance To Chemical & Sea Water Environment

Durawall PVC Sheet Piling can be used in high salinity conditions and many other corrosive environments

Resistance To Cracking

Unlike concrete, the wall will not crack or spall over time.

Locks

Durawall PVC Sheet Piling Locks are designed to allow the sheets to slide together smoothly, but remain locked together under load. It is possible to seal the locks to completely prevent moisture penetration.

Aesthetics

Durawall PVC Sheet Piling will maintain their appearance for many decades, unlike alternative materials.

Installation

Durawall PVC Sheet Piling installs easily, using equipment and techniques commonly available.

Design Flexibility

Graceful curves are possible, as well as clean, sharp corners, depending upon the project requirements.

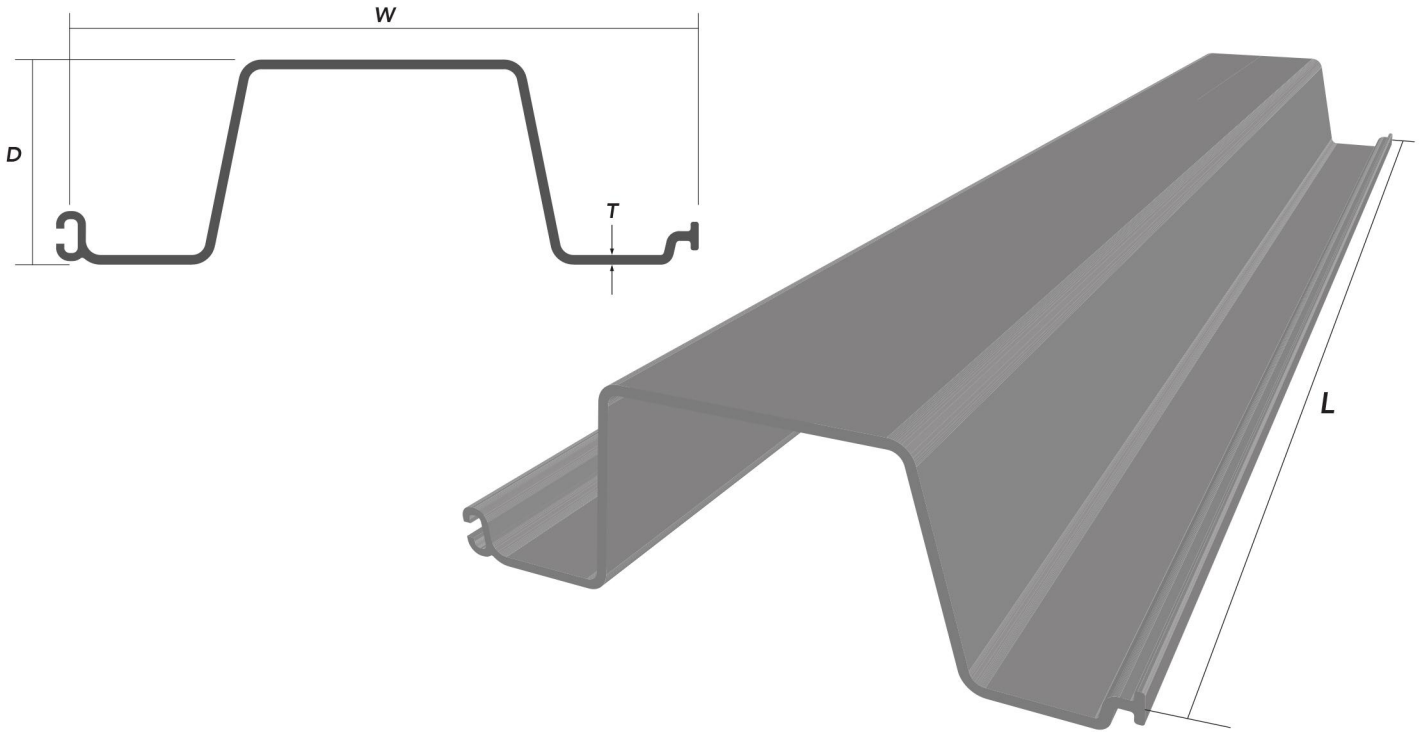
COMPARISON	Durawall PVC Sheet Piling	Steel	Concrete	Wood
Cost	low	high	medium	low
Weight	light	heavy	extra heavy	medium
Resistance to Corrosion	high	low	n/a	n/a
Resistance to Chemical & Sea Water Environment	high	low	medium	low
Resistance to Cracking & Spalling	high	n/a	medium	low
Environment-Friendliness	yes	no	no	no
Locks	yes	yes	no	no
Aesthetics	high	low	medium	medium
Installation	easy	easy	difficult	moderate
Design Flexibility	high	high	moderate	high



PRODUCT PROFILE

Durawall U PVC Sheet Piling UGW 2409/9.0

Patent No. 3-2018-001223



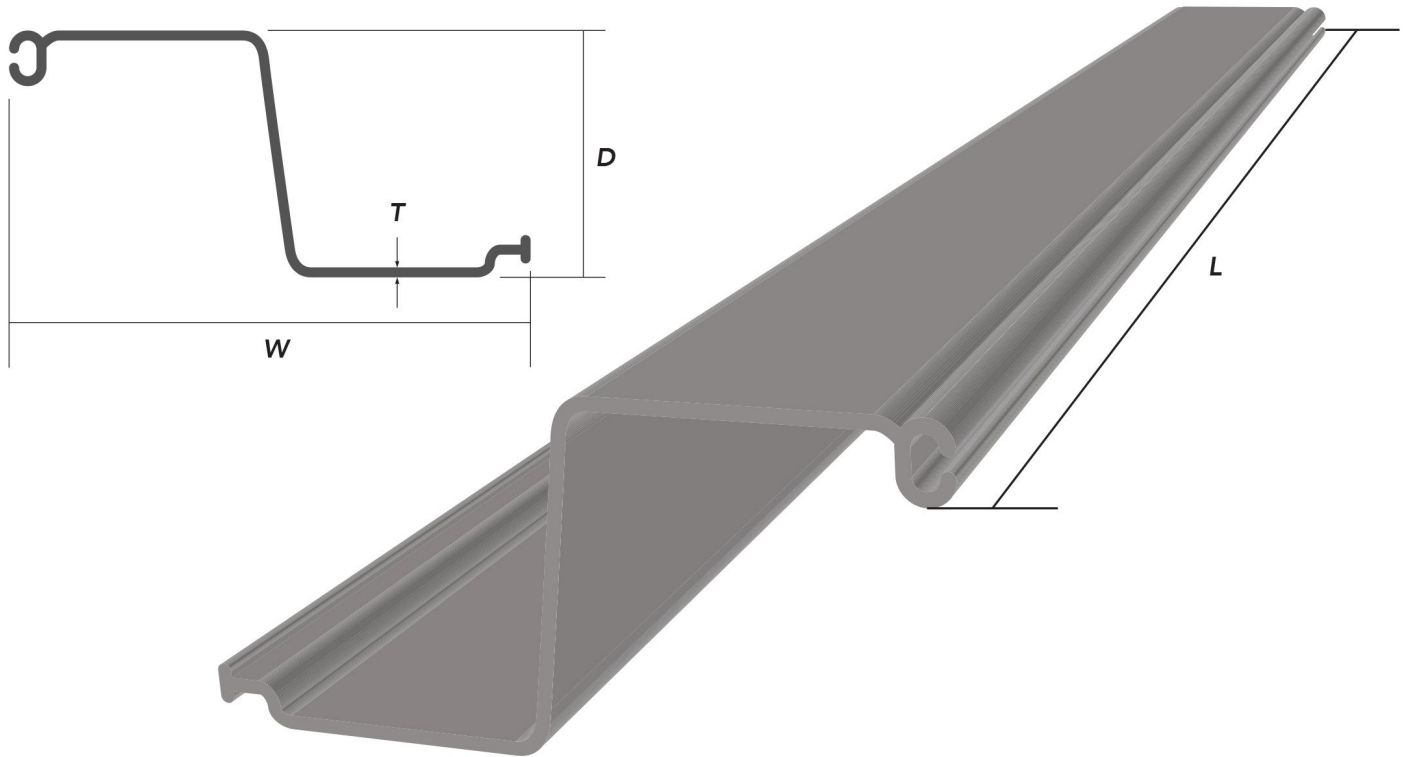
	Unit	Test Method	Specification
Section Width (W)	mm		606
Section Depth (D)	mm		230
Thickness (T)	mm		9.00
Weight	kg/m		13.60
Standard Length (L)	m		12.00
Moment of Inertia	cm ⁴ /m		12,776
Section Modulus	cm ³ /m		1,077
Ultimate Moment	kg-m/m		4,740
Allowable Moment	kg-m/m		3,220
Tensile Strength	Mpa	ASTMD638	44.80
Flexural Strength	Mpa	ASTMD790/ISO178	66
Tensile Modulus of Elasticity	Mpa	ASTMD790	2,620
Notched Izod Impact Test	J/M	ASTMD256	2.46
Heat Deflection Temperature	°C	ASTMD648	70



PRODUCT PROFILE

Durawall Z PVC Sheet Piling ZGW 1810/10.5

Patent No. 2-2018-000227 / 3-2018-000253



	Unit	Test Method	Specification
Section Width (W)	mm		458
Section Depth (D)	mm		254
Thickness (T)	mm		10.50
Weight	kg/m		11.60
Standard Length (L)	m		12.00
Moment of Inertia	cm ⁴ /m		19,241
Section Modulus	cm ³ /m		1,462
Ultimate Moment	kg-m/m		6,780
Allowable Moment	kg-m/m		3,390
Tensile Strength	Mpa	ASTMD638	44.80
Flexural Strength	Mpa	ASTMD790/ISO178	70.00
Tensile Modulus of Elasticity	Mpa	ASTMD790	2,620
Notched Izod Impact Test	J/M	ASTMD256	2.46
Heat Deflection Temperature	°C	ASTMD648	70

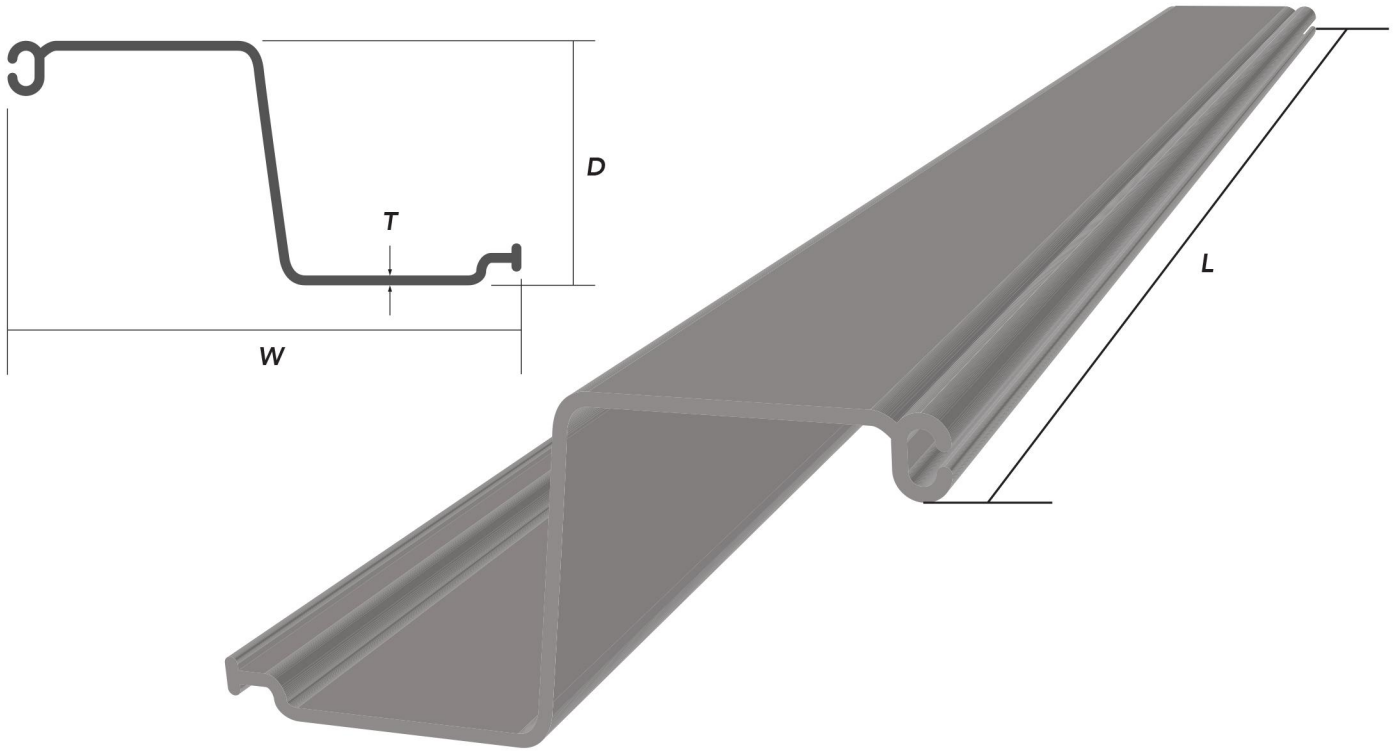


PRODUCT PROFILE

NEW

Durawall Z PVC Sheet Piling ZGW 11.18

Patent No. 2-2018-000227 / 3-2018-000253

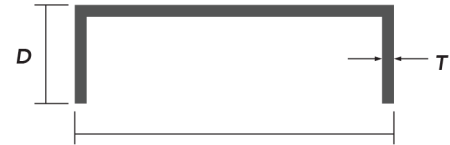
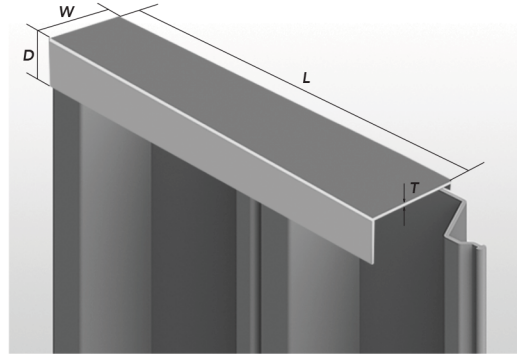


	Unit	Test Method	Specification
Section Width (W)	mm		458
Section Depth (D)	mm		254
Thickness (T)	mm		11.18
Weight	kg/m		13.09
Standard Length (L)	m		12.00
Moment of Inertia	cm ⁴ /m		22,709
Section Modulus	cm ³ /m		1,717
Ultimate Moment	kg-m/m		7,948
Allowable Moment	kg-m/m		3,980
Tensile Strength	Mpa	ASTMD638	44.80
Flexural Strength	Mpa	ASTMD790/ISO178	70.00
Tensile Modulus of Elasticity	Mpa	ASTMD790	2,620
Notched Izod Impact Test	J/M	ASTMD256	2.46
Heat Deflection Temperature	°C	ASTMD648	70

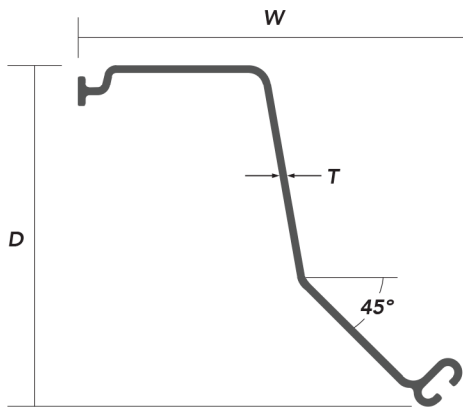
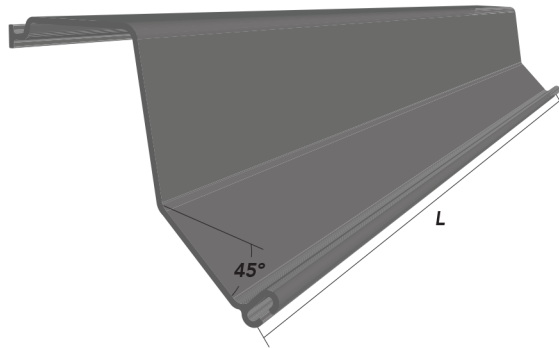
FITTINGS AND ACCESSORIES

Durawall PVC Sheet Piling Cap 290

	Dimension
Depth (D)	90 mm
Width (W)	290 mm
Thickness (T)	10.5 mm
Standard Length (L)	2 M

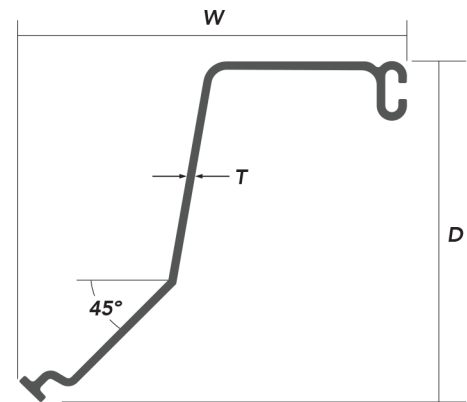
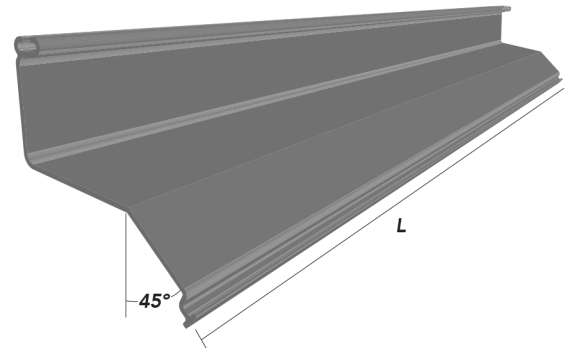


Durawall PVC Sheet Piling Female 45° Bend ZGW 1810/10.5



	Dimension
Section Depth (D)	254 mm
Section Width (W)	405 mm
Flange Thickness (T)	10.5 mm
Standard Length (L)	12 M

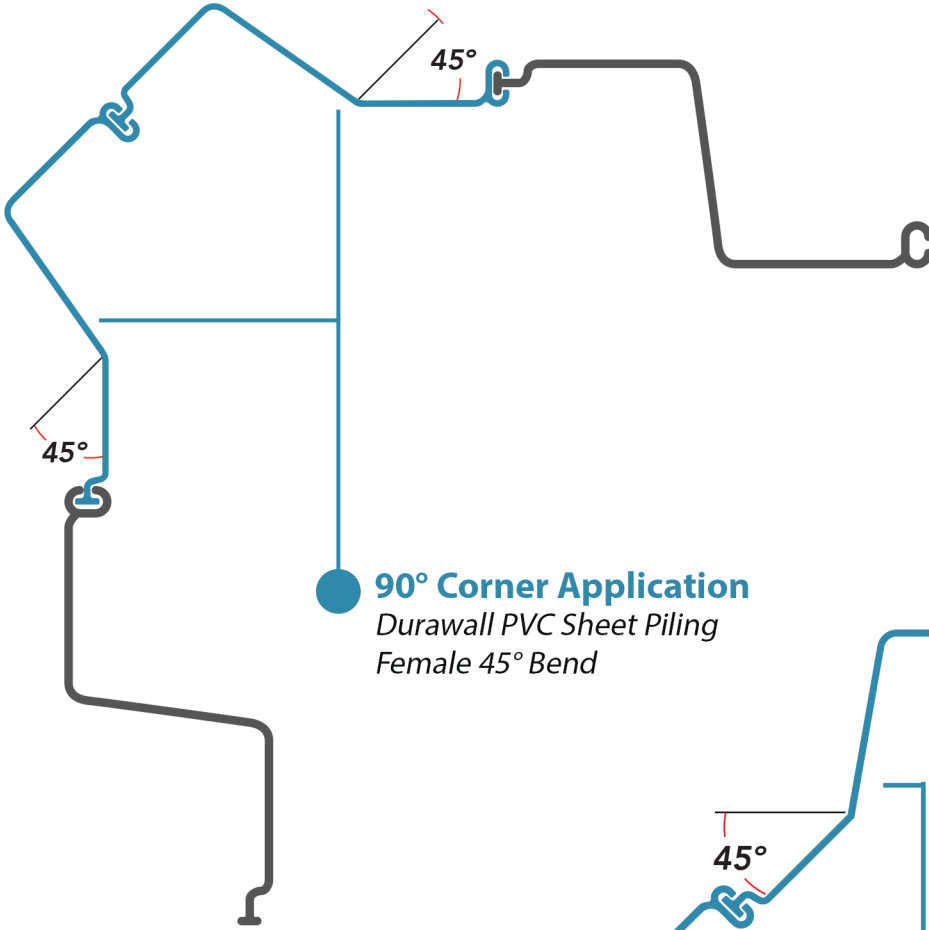
Durawall PVC Sheet Piling Male 45° Bend ZGW 1810/10.5



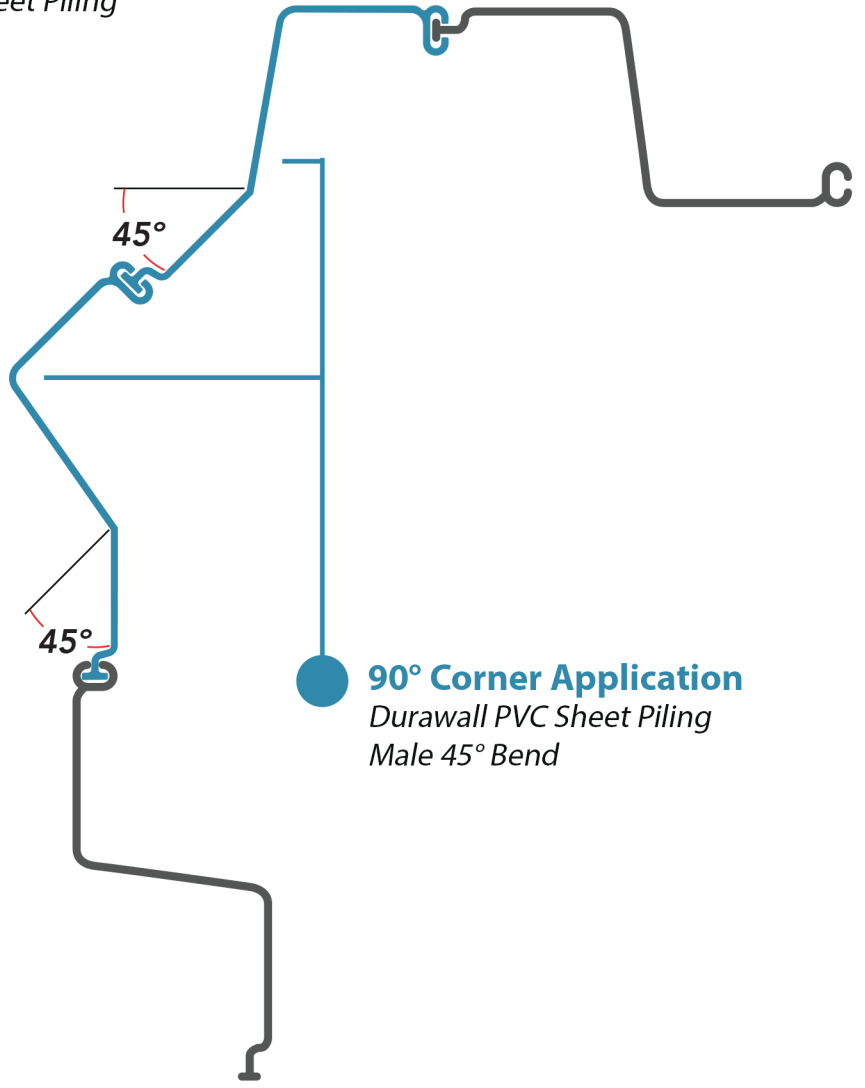
	Dimension
Section Depth (D)	254 mm
Section Width (W)	405 mm
Flange Thickness (T)	10.5 mm
Standard Length (L)	12 M



90° CORNER APPLICATIONS



90° Corner Application
Durawall PVC Sheet Piling
Female 45° Bend

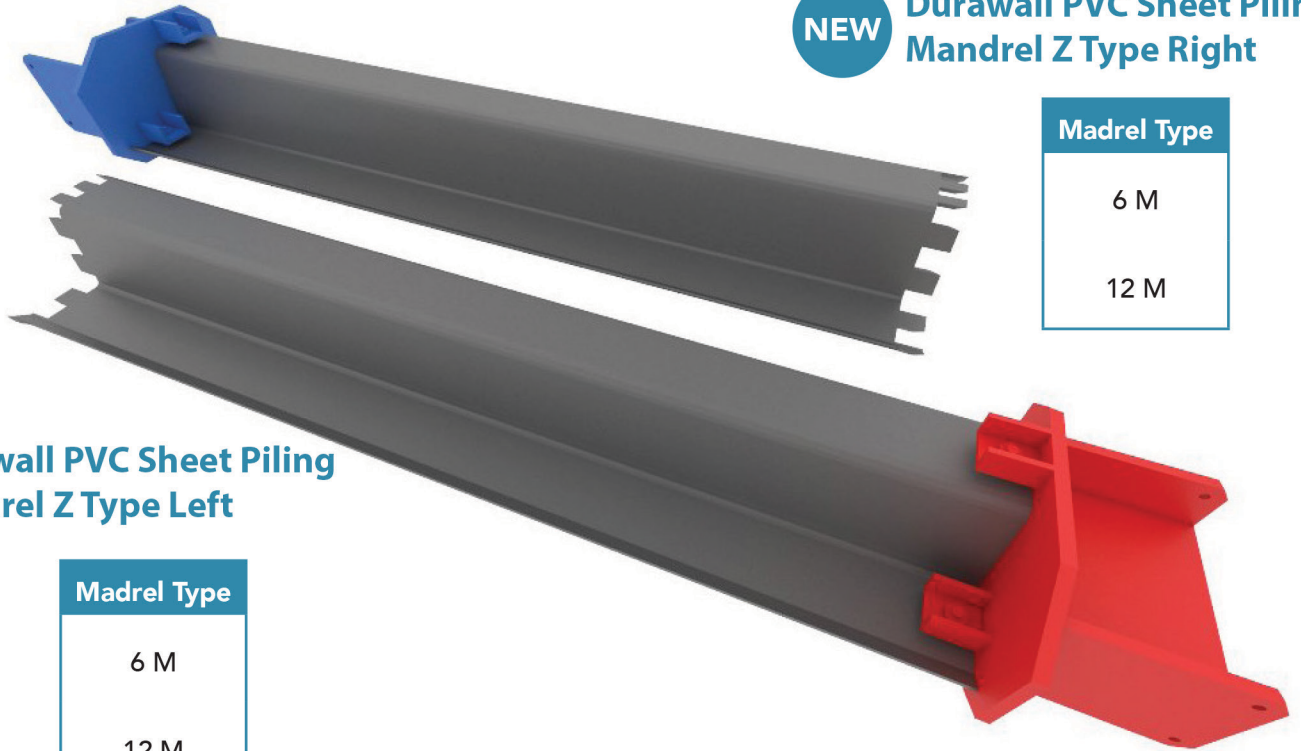


90° Corner Application
Durawall PVC Sheet Piling
Male 45° Bend

MANDRELS

NEW Durawall PVC Sheet Piling Mandrel Z Type Right

Mandrel Type
6 M
12 M



NEW Durawall PVC Sheet Piling Mandrel Z Type Left

Mandrel Type
6 M
12 M

PROJECTS

GANDARA RIVER

Location: Samar 2nd District
Linear Meters: 730 Linear Meters
Sheet Lengths: 9 Meters
Soil Conditions: Silt, Sand and Clay
Design Engineer: DPWH
Installation Method: Excavator Mounted Vibro-Hammer
Slope Protection





PROJECTS

TINAMBACAN RIVER - SAMAR

Location: Samar 2nd District
Linear Meters: 634 Linear Meters
Sheet Lengths: 9 Meters
Soil Conditions: Silt, Sand and Clay
Design Engineer: DPWH
Installaton Method:
 Excavator Mounted Vibro-Hammer
Slope Protection



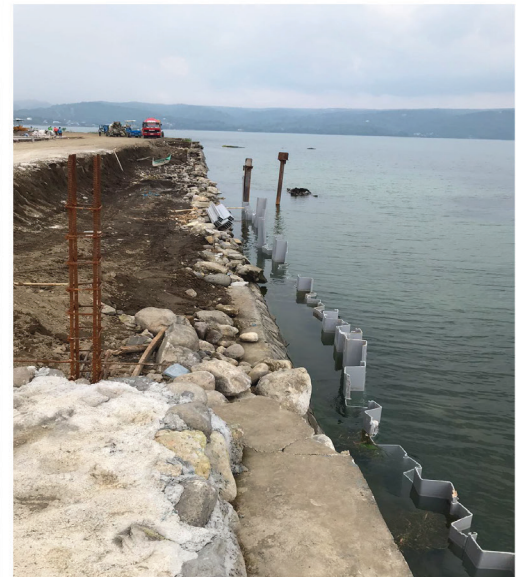
PALASAN RIVER FLOODWALL

Location: Valenzuela, Metro Manila
Linear Meters: 1,800 Linear Meters
Sheet Lengths: 11.95 Meters
Soil Conditions: Silt, Sand and Clay
Design Engineer: DPWH
Installaton Method:
 Crane Mounted Vibro-Hammer



TAAL LAKE

Location: Balete, Batangas
Linear Meters: 7,200 Linear Meters
Sheet Lengths: 6 Meters
Soil Conditions: Silt, Sand and Clay
Design Engineer:
 DPWH Batangas 3rd DEO
Installaton Method:
 Vibro Hammer with Mandrel



TAAL LAKE

Location: Laurel, Batangas

Linear Meters: 5,400 Linear Meters

Sheet Lengths: 5 Meters

Soil Conditions:

Silty and Sandy Loam

Design Engineer:

DPWH Batangas 3rd DEO

Installaton Method:

Vibro Hammer with Mandrel



PANSIPIT RIVER

Location: San Nicolas, Batangas

Linear Meters: 10,800 Linear Meters

Sheet Lengths: 9 Meters

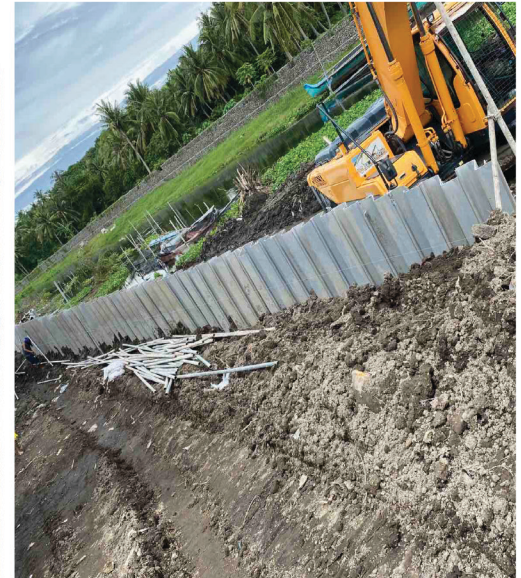
Soil Conditions: Silty and Sand

Design Engineer:

DPWH Batangas 3rd DEO

Installaton Method:

Vibro Hammer with Mandrel



SANGLEY AIRPORT

Location: Sangley Point, Cavite City

Linear Meters: 3,900 Linear Meters

Sheet Lengths: 6 Meters

Soil Conditions: Silty and Sand

Design Engineer: DOTr

Installaton Method: Vibro Hammer





REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
OFFICE OF THE SECRETARY
MANILA

*DPWH 18 DPWH
12.29.2016*

28 DEC 2016

DEPARTMENT ORDER) SUBJECT : DPWH Standard Specification for
No. 244) Item 523 - Polyvinyl Chloride
Series of 2016) (PVC) Sheet Piles

In line with the mandate of the Department in providing effective standard specifications in the implementation of various infrastructure projects and in view of the need of setting a standard specification for polyvinyl sheet piles, the attached **DPWH Standard Specification for Item 523 - Polyvinyl Chloride (PVC) Sheet Piles** is hereby prescribed, for the guidance and compliance of all concerned.

This specification shall form part of the revised 2012 edition of the DPWH Standard Specifications for Highways, Bridges and Airports, Volume II.

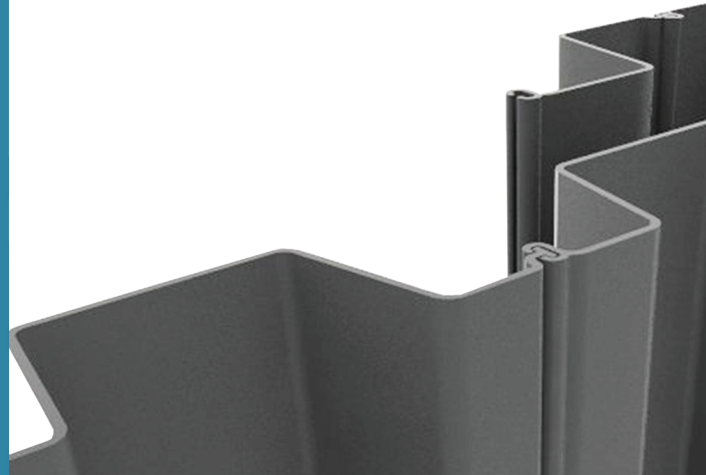
This Order shall take effect immediately.

Rafael C. Yabut
RAFAEL C. YABUT
Senior Undersecretary
Officer-In-Charge

14.1.2 FET/JFS

Department of Public Works and Highways
Office of the Secretary
WIN6U01413

DPWH APPROVED
(Department Order No. 244)



Republic of the Philippines



REGISTRATION NO. **3-2018 001223**

Having complied with the provisions of Republic Act. No. 8293 and its regulations, this Office registers this

INDUSTRIAL DESIGN

the specification and claim/s of which as hereunto annexed and made part hereof.

This REGISTRATION grants unto the applicant/s or assign/s the exclusive right throughout the Philippines to make, use, sell or import the industrial design, for a term of FIVE (5) YEARS from the date of filing, unless sooner terminated or cancelled as provided for by the law and the regulations and may be renewed for not more than two (2) consecutive periods of five (5) years each, by paying the renewal fee.

IN WITNESS WHEREOF, I have hereunto affixed my hand and the seal of the Intellectual Property Office at Taguig City, Philippines.

Lolibeth R. Medrano
ATTY. LOLIBETH R. MEDRANO
Director of Patents



IPO APPROVED
(Registration No. 3-2018 001223)