



SOLDIERPILE

PRODUCT BROCHURE

LS SERIES • HD SERIES

PRECAST CONCRETE SOLDIERPILE WALL

Soldier pile and lagging walls are some of the oldest forms of retaining systems commonly used in temporary shoring for excavation work at construction site. Soldier pile walls are also used as permanent structures, suitable for low height applications, especially for riverbank protection works to prevent scouring.

Soldier pile walls consist of wide flange posts - primary structural elements, and lagging panels - secondary structural elements. The former is either forced into the ground to an adequate depth or installed into prebored holes, which are drilled along the planned wall alignment in advance, then encased in lean concrete; the latter is placed horizontally after excavation is completed and supported by soldier pile flanges at its edges. Moment resistance in soldier pile and lagging walls is provided solely by the soldier piles, passive soil resistance is obtained by embedding the soldier piles beneath the excavation grade. The lagging bridges and retains soil across piles and transfers the lateral load to the soldier pile system.

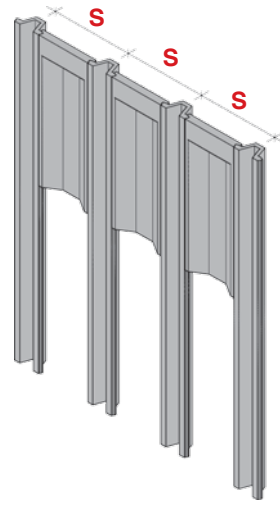


PRODUCT SPECIFICATION

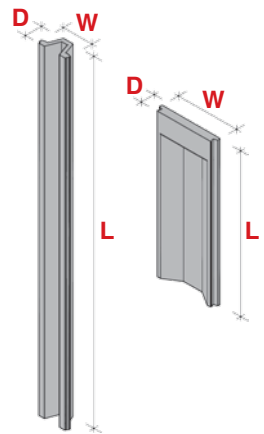
Because soldier pile walls derive their support from the surrounding soil, an investigation of the foundation materials along the wall alignment should be conducted at the inception of the planning for the wall. The coordination effort required for design and construction of a sheet pile wall is dependent on the type and location of the project. Coordination and cooperation among hydraulic, geotechnical, and structural engineers must be continuous from the inception of the project to final placement in operation.

Soldierpile LS Series with C-Post

The post takes the same form of sheet pile with flange edges adapted to engage into the groove joint of the corrugated lagging panels. Suitable for medium dense sandy; medium firm silty; medium stiff clayey soils.



TYPE	PRODUCT CODE	WIDTH W (mm)	DEPTH D (mm)	LENGTH L (mm)	SPACING S (mm)
C-POST	LS-450	800	450	6000 7500 9000 12000	2240
LAGGING PANEL	LS-360	1600	360	2000 3000 4000 5000	2240



APPLICATION



Development Project
Building Platform, Earth Retention and Slope Protection



Roadwork
Embankment, Bridge, Abutment and Wingwall

Precast soldier piles are manufactured in long thin structural concrete elements of folded plate sections in corrugated form (LS-Series) and Tee-section (HD -Series) tailored for different ground conditions. The lagging panels in folded sections are common for both series.

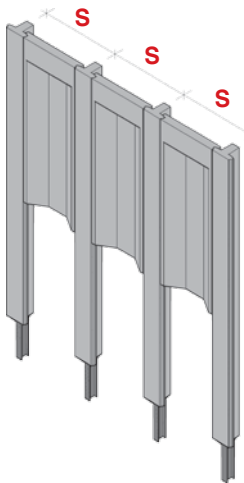
Embedded soldier pile posts may be cantilever, anchored or propped structures with additional supports to the wall using tieback anchors, ties or struts. Tongue and groove (T & G) joints are provided along the sides of the concrete sections to guide and facilitate installation works. The T & G joint serves to reduce, in not totally conceal possible gaps between precast units during installation and prevent washing out of fines from the retained earths.



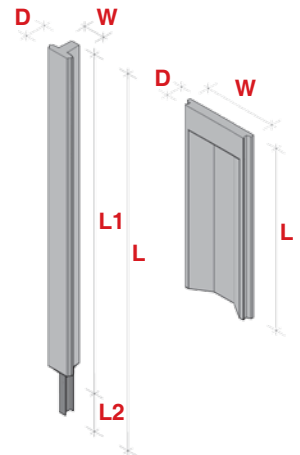
At service, sheet piles are considered to act as a beam subject to predominantly flexural stresses, and sometimes with combined axial stresses depending on the structural configurations. Soldier-piling loads are primarily developed by lateral earth pressures, which in turn develop shears, moments and deflections in the soldier pile post sections. The precast concrete sections are reinforced adequately to resist these forces.

Soldierpile HD Series with T-Post

The post takes the form of 'T-shape' with flange edges adapted to engage into the groove joint of the corrugated lagging panels. Square pile head is designed for hard driving (HD) into harder ground. Suitable for medium dense sandy; medium firm silty; medium stiff clayey soils on top soil layers, and with firmer or stiffer soil characteristics near founding level.



TYPE	PRODUCT CODE	WIDTH W (mm)	DEPTH D (mm)	LENGTH L (mm)	SPACING S (mm)
T-POST	HD-450	520	450	6000 7500 9000 12000	2000
LAGGING PANEL	LS-360	1600	360	2000 3000 4000 5000	2000



Marine Structure
Wharf, Jetty, Coastal Protection



Slope and Bank Stabilization
Drain, Canal, Pond, Lake and River

ADVANTAGEOUS FEATURES



Space Saving

- The precast soldierpile method of construction alleviates site constraint problem that might arise during installation and / or at the time of service.

Cost Effective

- Efficient wall section designed significantly minimises foundation cost.

Time Saving

- Post and lagging construction is easily executed with standard machineries. Fast to construct.

Robustness

- Strong section with in-built ribbed or corrugated profiles will facilitate driving and handling process

Corrosion Free

- Being corrosion free it will entail no treatment cost.

Flexibility

- Versatile installation, adjustments can be made in the field easily to accommodate changes



Design / Specification

- Earth retaining structure design to BS8002
- Reinforced concrete design to BS8110
- Concrete grade $f_{cu} = 40-50\text{MPa}$ (for standard design)
- Superimposed load = 5-10 kPa (for standard design)
- Higher grades or loading specification can be customized to meet specific project requirements

Manufacture

- Cement (OPC) to MS522
- Aggregate (20mm) to MS29
- Steel bar to MS 146
- Admixture to MS922

Installation

- Vibro-hammer/ or hydraulic drop hammer of adequate capacity to site soil conditions
- Work sequence in general:
 - Site clearing, preparation of access and working platform to machinery requirements
 - Setting out alignment, install guide-frame
 - Pitch wall panel, position and drive
 - Cast capping beam
- Refer to specific method statement for each project



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