



SMP – Service Corp.  
PEO CofA # 100523034

**CCMC**  
13102-R



### NORMATIVE INFORMATION

Postech products are approved by the Canadian Construction Materials Centre (CCMC 13102-R). They were tested on-site by an engineering firm recognized by the CCMC. The technical evaluation indicates that Postech products respect the requirements of the CCMC guidelines for augered steel piles. Their performance is equivalent or superior to prescribed NBC 2010 standards.

#### MANUFACTURER:

**Pieux Vistech - Postech Screw Piles**  
10260, Bourque boulevard  
Sherbrooke QC J1N 0G2  
Tel. : 819.843.3003  
Toll free: 1.866.277.4389  
Fax. : 819.868.0793  
[postech-foundations.com](http://postech-foundations.com)

### PRODUCT CHARACTERISTICS

#### Physical and Chemical properties

<b>STEEL GRADE</b>	Conform to CAN/CSA G40.21-350W and/or ASTM A500 class C
<b>ARC WELDING</b>	Conform to CSA W59-13
<b>HOT DIP GALVANIZATION</b>	Conform to ASTM-A123M
<b>THERMAL INSULATION</b>	Unique polyurethane foam

#### Standard characteristics

<b>TUBING DIAMETER</b>	48 mm (1 7/8 in)
<b>BLADE DIAMETER</b>	From 200 to 255 mm (8 in and 10 in)
<b>TUBING LENGTH</b>	Standard of 2.1 m and 3 m (7 ft. and 10 ft.)
<b>TUBING THICKNESS</b>	3.7 mm (0.145 in)
<b>BLADE THICKNESS</b>	8 mm (5/16 in) for diameters for de 8 and 10 in
<b>ADAPTER HEADS</b>	Various forms as needed according to the project specifications
<b>EXTENSIONS</b>	Available according to project specifications

### ALLOWABLE MECHANICAL RESISTANCE (SLS)

<b>MAXIMUM COMPRESSIVE AND TENSILE OF TUBING</b>	90 kN
<b>BENDING MOMENT OF TUBING</b>	1.5 kN.m

SLS = Service Limit State

## DESIGN INFORMATION

### BEARING CAPACITY

Postech products are designed to bear compressive, tension and lateral loads through the blade at the bottom of the shaft. The design of the shaft and the size of the blade depend on the load and on the bearing capacity of the soil. The monitoring of the applied torque on site allows for the confirmation of the allowable bearing capacity (SLS) of the soil.

### THERMAL INSULATION

Postech products are insulated by a process of injecting polyurethane foam in the piles shaft. The revolutionary insulation system ensures that the inside of the pile is maintained at a temperature that will prevent ice or frost build-up at the base of the pile; providing optimal protection against ground motion using our planet's heat.

## SCREW PILE ADVANTAGES

- Product and installation is supplied, you only need to mark the spot!
- Can be installed in all climates, weather or ground conditions;
- No excavation usually required, minimal impact to your property;
- No waiting time, you can build as soon as the installation is ready;
- Reusable and recyclable, environmentally friendly;
- Can be installed under an existing structure;
- The most reliable & economical solution available.

**COHESIONLESS SOILS (SILT, SAND OR GRAVEL)**

**ALLOWABLE LOADS (SLS) DEPENDING ON APPLIED TORQUES**

APPLIED TORQUES (LB-FT)	ALLOWABLE LOADS (kN)	
	COMPRESSIVE	TENSILE
500	20	4
750	24	8
1000	29	11
1250	34	14
1500	39	18
1750	44	21
2000	49	25
2250	53	31
2500	58	31
2750	63	35
3000	68	40
3250	73	44
3500	78	48
3750	82	50
4000	87	52
4250	92	54



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**ALLOWABLE LOADS (SLS) DEPENDING ON SOIL DENSITIES**

SOIL DENSITIES kN / m3	ALLOWABLE LATERAL LOADS (kN)
	P178
18	0.8
20	0.9
22	1.0

SLS = Service Limit State

**Technical Notes**

- For cohesionless soils, the safety factor varies from 2.0 to 3.0 in compressive loads and from 2.0 to 2.4 in tensile loads.
- The safety factor for the lateral loads varies from 2.0 to 6.4, for cohesionless and cohesive soils.
- If there are any boulders (> 200 mm in diameter) in the granular matrix, the above mentioned capacities will be overstated. In this case, the allowable loads will be established on-site using a confirmatory test.

**ALLOWABLE LOAD VALUES  
OF POSTECH SCREW PILES**

The geotechnical calculations for Postech's screw piles were carried out in accordance with the requirements of sub-section 4.2.4 of the National Building Code (NBC). We used the design methods set out in Chapters 19 and 20 of the Canadian Foundation Engineering Manual (CFEM). These calculations are based on the physical and mechanical properties of the on-site at the blade depth and along the steel tubing.



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**ALLOWABLE LOADS (SLS) – COHESIVE SOILS (CLAY)**

Undrained shear strengths (kPa)	Allowable bearing capacities of soils (kPa)*	ALLOWABLE LOADS (kN)			
		Blade 200 mm Ø (8" Ø)		Blade 255 mm Ø (10" Ø)	
C=compressive, T=tensile		C	T	C	T
30	50	5	3	8	5
44	75	7	5	11	7
58	100	9	6	15	10
73	125	12	8	19	12
88	150	14	10	23	15
102	175	16	11	27	17
117	200	19	13	30	20
145	250	23	16	38	24
≥175	≥300	28	20	46	29

**ALLOWABLE LOADS (SLS) – COHESIONLESS SOILS (SILT, SAND OR GRAVEL)**

Compaction indexes N	Allowable bearing capacities of soils (kPa)*	ALLOWABLE LOADS (kN)			
		Blade 200 mm Ø (8" Ø)		Blade 255 mm Ø (10" Ø)	
C=compressive, T=tensile		C	T	C	T
3	50	4	3	6	4
5	75	6	4	10	7
6	100	7	5	12	9
8	125	10	7	16	11
10	150	12	9	20	14
11	175	13	10	21	16
13	200	16	11	25	19
16	250	19	14	31	23
20	300	24	18	39	29
≥25	≥ 350	30	22	49	36

\* Note: For a conventional strip footing with a width of less than 1 m.

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**COHESIVE SOILS (CLAY)**

**ALLOWABLE LOADS (SLS) DEPENDING ON APPLIED TORQUES**

APPLIED TORQUES (LB-FT)	ALLOWABLE LOADS (kN)	
	COMPRESSIVE	TENSILE
750	8	6
1000	11	8
1250	14	10
1500	17	12
1750	19	14
2000	22	16
2250	25	19
2500	28	21
2750	31	23
3000	33	25
3250	36	27
3500	39	29
3750	42	32
4000	44	34
4250	47	36
4500	50	38

**ALLOWABLE LOADS (SLS) DEPENDING ON SOIL DENSITIES**

SOIL DENSITY	ALLOWABLE LATERAL LOAD (kN)
kN/m <sup>3</sup>	P178
16	0.7

SLS = Service Limit State

**Notes techniques**

- For cohesive soils, the safety factor varies from 2.0 to 2.9 in compressive and in tensile loads.
- The safety factor for the lateral loads varies from 2.0 to 6.4, for cohesionless and cohesive soils.
- If there are any boulders (> 200 mm in diameter) in the granular matrix, the above mentioned capacities will be overstated. In this case, the allowable loads will have to be established on-site using a confirmatory test.



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