TECHNICAL DATA SHEET
POSTECH PILE P178 (1 7/8”)

PRODUCT CHARACTERISTICS	
Physical and Chemical properties	
STEEL GRADE	Conform to CAN/CSA G40.21-350W and/or ASTM A500 class C
ARC WELDING	Conform to CSA W59-18
HOT DIP GALVANIZATION	Conform to ASTM-A123M
THERMAL INSULATION	Unique polyurethane foam
Standard characteristics	
TUBING DIAMETER	48 mm (1 7/8 in)
BLADE DIAMETER	From 200 to 255 mm (8 in to 10 in)
TUBING LENGTH	Standard of 2.1 m and 3 m (7 ft. and 10 ft.)
TUBING THICKNESS	3.7 mm (0.145 in)
BLADE THICKNESS	8 mm (5/16 in) for diameters from 200 to 255 mm (8 to 10 in)
ADAPTER HEADS	Various forms as needed according to the project specifications
EXTENSIONS	Available according to project specifications

ALLOWABLE MECHANICAL RESISTANCE (SLS)	
MAXIMUM COMPRESSIVE AND TENSILE OF TUBING	90 kN(1) (20 250 lb)
BENDING MOMENT OF TUBING	1.5 kN.m (1106 lb/ft)
INSTALLATION TORQUE - MAXIMUM APPLICABLE	2700 N.m (2000 lb/ft)

SLS = Service Limit State

(1) The maximum support value is applicable to steel tube only. The resistance is conditional on the composition of the on-site soil (granular and / or cohesive) and that the pile must be supported laterally. In all cases, the mechanical capacity of the steel tube must be certified by an authorized engineer. (Not applicable in the presence of liquefiable or loose soils, water, air, peat bogs, etc.)

DESIGN INFORMATION

In all cases, please refer to the CCMC 13102-R Assessment Report. All applicable loads must be validated by an engineer licensed to practice under the appropriate provincial or territorial legislation.

BEARING CAPACITY

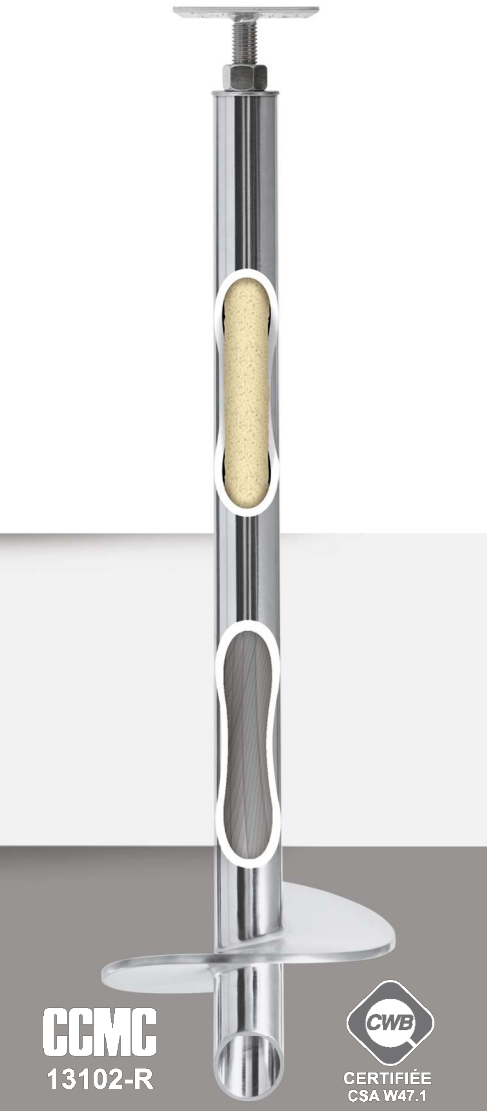
Postech products are designed to bear compressive, tension and lateral loads through the blade at the bottom of the shaft. The design of the shaft and the size of the blade depend on the load and on the bearing capacity of the soil. The monitoring of the applied torque on site allows for the confirmation of the allowable bearing capacity (SLS) of the soil. All capacities listed on this data sheet must be applied at the pile head less than 0.3 m (1 ft) above ground.

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.



CCMC 13102-R

CWB CERTIFIÉE CSA W47.1

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

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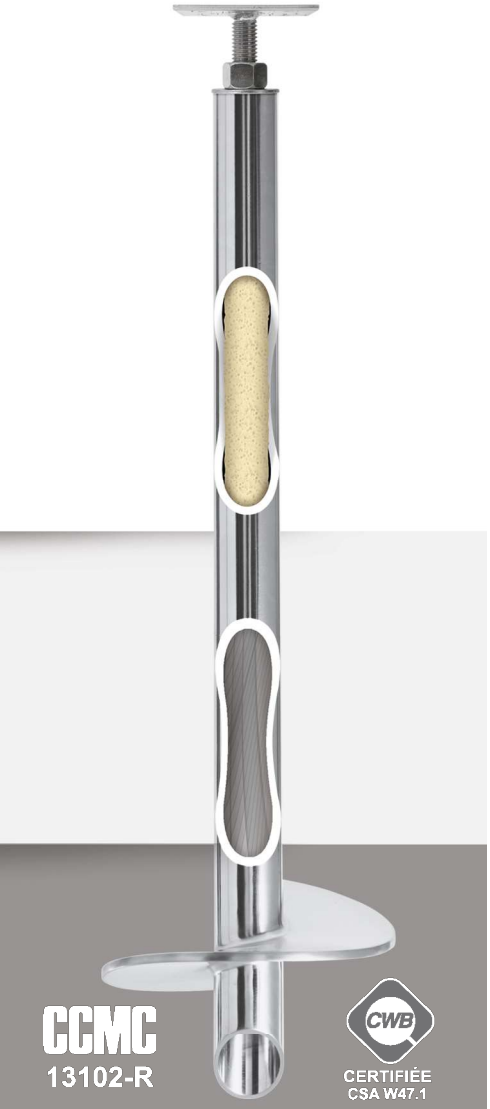

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COHESIONLESS SOILS (SILT, SAND OR GRAVEL)

ALLOWABLE VERTICAL LOADS (SLS) DEPENDING ON APPLIED TORQUES

APPLIED TORQUES (LB-FT)	ALLOWABLE LOADS			
	COMPRESSIVE		TENSILE	
	(kN)	(Lb)	(kN)	(Lb)
500	20	4 500	4	900
750	24	5 400	8	1 800
1 000	29	6 525	11	2 475
1 250	34	7 650	14	3 150
1 500	39	8 775	18	4 050
1 750	44	9 900	21	4 725
2 000	49	11 025	25	5 625

ALLOWABLE LATERAL LOADS (SLS) DEPENDING ON SOIL DENSITIES

SOIL DENSITIES (kN / m^3)	P178 ALLOWABLE LATERAL LOADS (2)	
	(kN)	(Lb)
18	0.8	180
20	0.9	200
22	1.0	225

SLS = Service Limit State

(2) Lateral loads are applicable at the pile head, less than 0.3 m (1 ft) above ground, and the pile must be supported laterally by the ground. However, lateral loads do not apply in the presence of liquefiable or loose soils, water, air and peatlands. The lateral capacity of a pile must always be certified by an engineer licensed to practice under the appropriate provincial or territorial legislation.

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.

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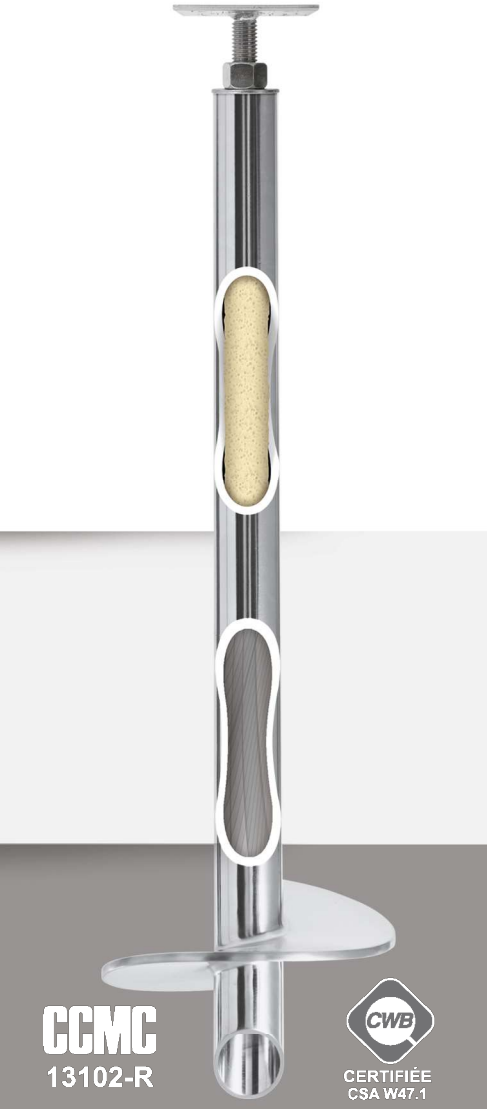

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ALLOWABLE LOAD VALUES
OF POSTECH SCREW PILES

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.

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		15
102	175	16	11		
117	200	19	13		
145	250	23	16		

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	
≥25	≥ 350	30	22	49	

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

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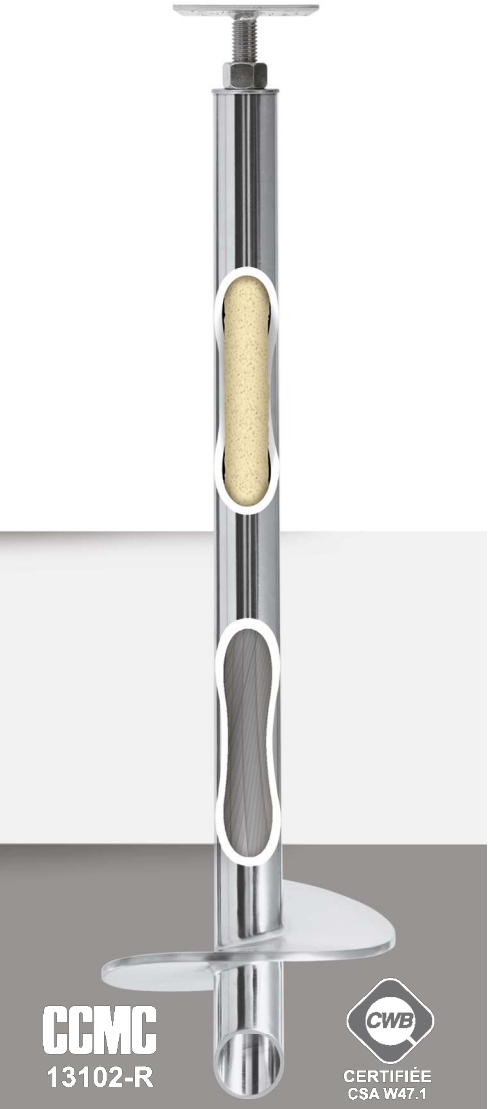

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COHESIVE SOILS (CLAY)

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APPLIED TORQUES (LB-FT)	ALLOWABLE LOADS			
	COMPRESSIVE		TENSILE	
	(kN)	(Lb)	(kN)	(Lb)
7 50	8	1 800	6	1 350
1 000	11	2 475	8	1 800
1 250	14	3 150	10	2 250
1 500	17	3 825	12	2 700
1 750	19	4 275	14	3 150
2 000	22	4 950	16	3 600

ALLOWABLE LATERAL LOADS (SLS) DEPENDING ON SOIL DENSITIES

SOIL DENSITY	P178 ALLOWABLE LATERAL LOAD (2)	
kN/m3	(kN)	(LB)
16	0.7	155

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