

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
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PRODUCT CHARACTERISTICS

Physical and Chemical properties

STEEL GRADE	Conform to CAN/CSA G40.21-350W and/or ASTM A500 grade C
ARC WELDING	Conform to CSA W59-18
HOT DIP GALVANIZATION	Conform to ASTM-A123M
THERMAL INSULATION	Unique polyurethane foam
Standard characteristics	
TUBING DIAMETER	114 mm (4 1/2 in)
BLADE DIAMETER	From 300 to 555 mm (12 to 22 in)
TUBING LENGTH	Standard of 2.1 m and 3 m (7 ft and 10 ft)
TUBING THICKNESS	6 mm (0.237)
BLADE THICKNESS	9.5 mm (3/8 in) for diameter from 300 to 355 mm (12 to 14 in) 12.7 mm (1/2 in) for diameter from 405 to 555 mm (16 to 22 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	400 kN (90 000 lb) ⁽¹⁾
BENDING MOMENT OF TUBING	14.3 kN.m (10 550 lb.ft)
INSTALLATION TORQUE - MAXIMUM APPLICABLE	22 100 N.m (16 300 lb.ft)

BEARING CAPACITY (ULS)

COMPRESSIVE TORQUE CORRELATION FACTOR (K_t)	16,4 m ⁻¹ (5,0 ft ⁻¹) ⁽²⁾
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ULS = Ultimate Limit State SLS = Service

(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.)

(2) The K_t factor supplied by Postech is only applicable to determine plies compressive bearing capacity, screwed into granular (cohesionless) soils. When the piles are used in tension, or in a cohesive soil, please contact Postech to determine its bearing capacity.

SCREW PILES BEARING CAPACITY

$$Q_t = K_t \times T$$

- Q_t = Ultimate bearing capacity.
- K_t = Torque correlation factor.
- T = Average torque measured on the last 0,3 m (1 ft.) installation, in N.m or lb.ft.

To obtain the service bearing capacity (SLS), the value of Q_t must be divided by 2 (SF=2).

LATERAL LOADS

ALLOWABLE LOADS (SLS) DEPENDING ON SOIL DENSITIES

SOIL DENSITIES (kN / m ³)	P412 ALLOWABLE LATERAL LOADS (3)	
	(kN)	(Lb)
16	9.5	2 135
18	10.7	2 405
20	11.9	2 675
22	13.0	2 925

SLS = Service Limit State

(3) 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. The safety factor for the lateral loads is equal or superior to 2.0.

Technical note :

- If there are boulders (> 200 mm diameter) in the granular matrix, the above mentioned capacities will be overstated. In this case, the allowable compressive and tensile loads have to be confirmed by on-site load tests.

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 and tension loads. 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 ultimate and allowable bearing capacities (ULS and 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 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 frost heave.

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.

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CERTIFIÉE
CSA W47.1

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