The FOOTING TUBE
A division of CLIFFCORP Inc

INSTALLATION MANUAL

CREATED FEBRUARY, 2008

5290 Route 102, Upper Kingsclear, NB Canada E3E 2P7
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E-mail: concrete@foottube.com, or visit us on the web at: www.foottube.com
Canada Patent: 2,179,701 US Patent: 6,318,700

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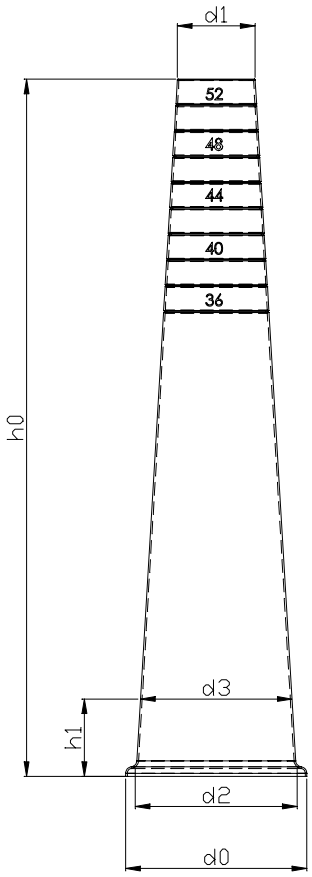
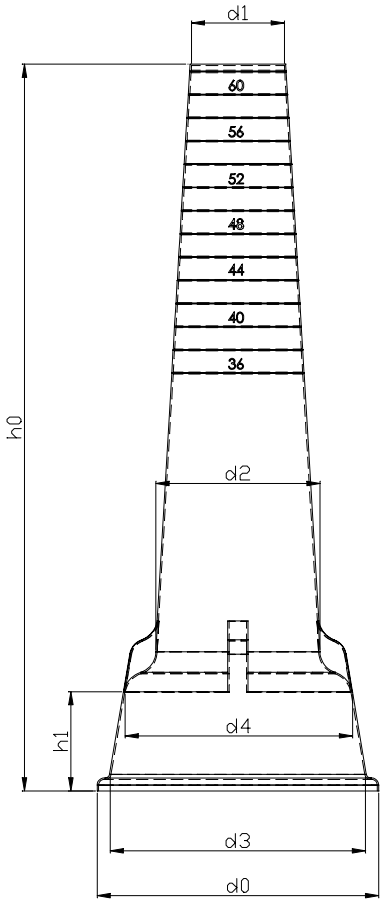
ILLUSTRATIONS

6” Deck Tube



6” Deck Tube		
d_0	14 inches	(355 mm)
d_1	6 inches	(152 mm)
d_2	12 inches	(304 mm)
d_3	11 $^3/_4$ inches	(297 mm)
h_0	54 inches	(1372 mm)
h_1	6 inches	(152 mm)

8” Footing Tube



8” Footing Tube		
d_0	24 inches	(609 mm)
d_1	8 inches	(203 mm)
d_2	14 inches	(356 mm)`
d_3	22 inches	(558 mm)
d_4	19 $^5/_8$ inches	(499 mm)
h_0	62 $^5/_8$ inches	(1591 mm)
h_1	8 $^1/_2$ inches	(216 mm)

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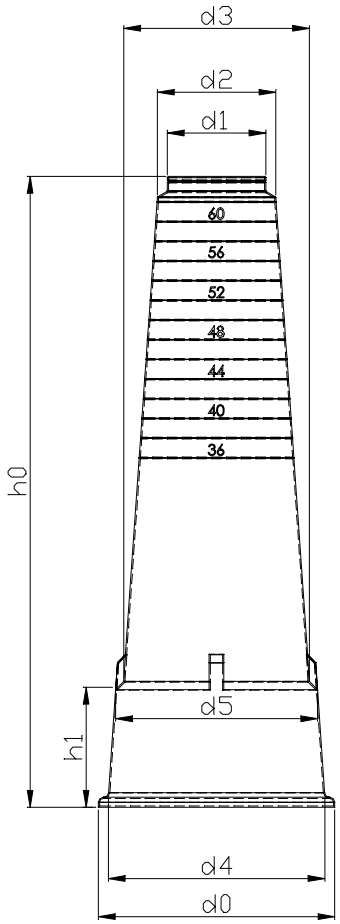
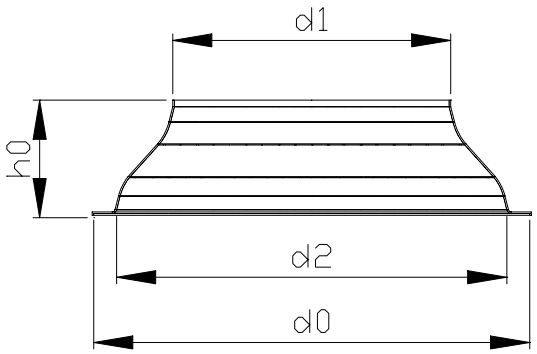
10/12” Footing Tube



10/12” Footing Tube		
d_0	24 inches	(609 mm)
d_1	10 inches	(254 mm)
d_2	12 inches	(305 mm)
d_3	18 $^{3}/_{4}$ inches	(477 mm)
d_4	22 inches	(559 mm)
d_5	20 $^{1}/_{2}$ inches	(521 mm)
h_0	64 inches	(1626 mm)
h_1	12 inches	(304 mm)

FTB 30



FTB 30		
d_0	33 $^{3}/_{4}$ inches	(856 mm)
d_1	21 $^{1}/_{2}$ inches	(546 mm)
d_2	30 inches	(762 mm)
h_0	9 inches	(229 mm)

When installing The FOOTING TUBE in Canada, ensure that all prescribed practices for construction of footings and foundations as described in Section 9.15. of Division B of the NBC 2005 are followed. In the United States respect the codes applicable in the jurisdiction of the work.

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INSTALLATION PROCEDURE

NOTE: The FOOTING TUBE is designed for in ground installation with a minimum depth of three feet (914 mm) of backfill bury. Although above grade installation can be performed, the following steps and recommendations are for below grade. It should also be noted that the Footing Tubes should have a minimum of 4" (101.6mm) of the top of the tube exposed above finished grade to allow for soil movement caused by freezing and water absorption.

Step 1
Excavate to depth required that will eliminate frost from going under pier.

Local building inspection departments or qualified engineers can assist you in determining the minimum requirements for the installation location. Be sure you have considered the final grade to be achieved after final backfill and eventual settlement. The bottom of the excavated hole should be on undisturbed soil of adequate bearing capacity to support the load that the pier will be transferring to the ground. Compaction and testing of bearing resistance may be required in some cases.

(** See below for FTB30 installation when required)

Step 2
Install The FOOTING TUBE in desired location. (Centre and Level on Safety Top)

Center marking is provided on Safety Top for easier locating. Set level on top and move bottom of tube to desired location. When position is determined, place some backfill material around base to hold it in desired location. Compact material with foot while holding tube level. This position should be checked frequently when backfilling is underway. If the bottom of the excavation hole is not level, compacted clean material could be used or the bottom of the tube may be trimmed slightly with a light saw. Note: Trimming should not exceed more than 1" (25.4mm) on 6" Deck tube and 2" (50.8mm) on 8" & 10/12" FT. Anchoring the concrete in the pier to underlying soil should be considered in locations that lateral forces are present and a professional in this field should be consulted.

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Step 3
Backfill to grade required before pouring concrete. Minimum 3 ft. (Using coarse rock fill may damage tube)

Check location of pier again and backfill with machine or hand shovel by placing material equally around tube. Backfill to grade required for frost protection or the minimum requirement of 36” (914 mm) before filling with concrete so tube does not float up with the fluid concrete pressure. Note that large rocks should be kept away from side of tube. Compaction of material can be done if desired in 6” (152 mm) lifts with a plate compactor and should be steered around tube so equal pressure is maintained around pier. A Maximum 90% compaction should be achieved. Rocks or hard clay lumps larger that 3” (76 mm) in diameter should be kept away from the tube a minimum of 6” (152 mm) from the side of the tube. A minimum degree of compaction can be done by placing the backfill in 12” (305 mm) lifts and walked around by foot to consolidate the soil. It would be recommended to backfill higher than the minimum finished grade in this case to allow for settlement of soil.

Step 4
Remove Safety Top along scribe line and fill with concrete to desired height.

Do not remove Safety Top until you are ready to pour your concrete so nothing will fall into open pier form. Determine the required height of the concrete pier and remove Safety Top using scribe lines with knife or saw. Pour concrete in 12” (305 mm) lifts, rod using steel bar with minimum 6 thrusts or use a concrete vibrator to consolidate the fluid concrete. Ensure the consolidating instrument passes through the lift and into any previously placed one. Rebar can be paced in wet concrete as required by local codes and applications by inserting after placing or by inserting a cage before installation. If once the tubes are opened and standing water is identified, this should be pumped out prior to pouring of concrete. The concrete should have a minimum compressive design strength of 3000 psi (20.7MPa) @ 28 days, Maximum Aggregate size of 3/4” (19 mm) and a slump of 3” to 6” (75 mm to 150 mm). In general, the concrete specifications shall meet those described in Subsection 9.3.1. of Division B of the NBC 2005 code for Canada and the equivalent codes for the United States.

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****FTB30 Note**
When a larger base is required the FTB30 can be used with both the 8" Footing Tube and the 10/12" Footing Tube.

When it is installed under the Footing Tubes it will raise the tubes by 6.25" (158.75mm). Follow Step 1 ensuring the area is large enough to accept the 33" (838 mm) FTB30. Insert base in desired location, place chosen tube on top and rotate until location and level tube is achieved and continue with Step 2.

NOTE: Remove red label from FTB30 and stick on label of Footing Tube being used so you can increase your concrete volume as instructed on label.

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USAGE OF THE FOOTING TUBES

6” Deck Tube

Sun (patio) decks that do not exceed 8 feet out from fixed structure, ramps that require multiple points of support, 2” steel fence posts, light posts,

Limitations: Frost depths exceeding 52”, limited loads due to base bearing area, not intended for decks with roofs, etc.

8” Footing Tube

Sun (patio) decks, Porches, Additions, Fence posts, Cottage & Camp of one storey for foundation, Lamp posts,

Limitations: Frost depths exceeding 58”, Loads not to exceed the bearing resistance of the soil that the pier is resting on or of the concrete being placed in form

10/12” Footing Tube

Sun (patio) decks, Porches, Additions, Fence posts, Cottage & Camp of one storey for foundations, Lamp Posts, Home Foundations, Pole Barns, Point Load Beams,

Limitations: Frost depths exceeding 60”, Loads not to exceed the bearing resistance of the soil that the pier is resting on or of the concrete being placed in form

FTB30

Used with 8” and 10/12 “ Footing Tubes to increase load bearing area, Increase height to footing tubes by 6 inches which adds 6 inches of frost depth protection when used.

Limitations: Loads not to exceed the bearing resistance of the soil that the pier is resting on or of the concrete being placed in form

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ALLOWABLE BEARING PRESSURES & LOADS

Allowable loads table created by using Table 9.4.4.1. of the 2005 National Building Code of Canada.
Note: Clause 9.4.4.3

Soil Description	Allowable Bearing Pressure kPa (psf)	6"Deck Tube 0.85ft^2 base area	8" Footing Tube 2.58 ft^2 base area	10/12" Footing Tube 2.58 ft^2 base area	FTB30 4.9 ft^2 base area
Dense or compact sand or gravel	150 (3132)	2662 lb/tube	8080 lb/tube	8080 lb/tube	15346 lb/tube
Loose sand or gravel	50 (1044)	887 lb/tube	2693 lb/tube	2693 lb/tube	5115 lb/tube
Dense or compact silt	100 (2088)	1774 lb/tube	5387 lb/tube	5387 lb/tube	10231 lb/tube
Stiff clay	150 (3132)	2662 lb/tube	8080 lb/tube	8080 lb/tube	15346 lb/tube
Firm clay	75 (1566)	1331 lb/tube	4040 lb/tube	4040 lb/tube	7673 lb/tube
Soft clay	40 (835)	709 lb/tube	2154 lb/tube	2154 lb/tube	4091 lb/tube
Till	200 (4177)	3550 lb/tube	10776 lb/tube	10776 lb/tube	20467 lb/tube
Clay shale	300 (6265)	5325 lb/tube	16163 lb/tube	16163 lb/tube	30698 lb/tube
Sound bedrock	500 (10442)	8875 lb/tube	26940 lb/tube	26940 lb/tube	51165 lb/tube

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ALLOWABLE BEARING PRESSURES & LOADS

United States

Soil Description	Allowable Bearing Pressure	6" Deck Tube 0.85 ft^2 base area	8" Footing Tube 2.58 ft^2 base area	10/12" Footing Tube 2.58 ft^2 base area	FTB30 4.9 ft^2 base area
	psf (kPa)	lbs/tube (kN)	lbs/tube (kN)	lbs/tube (kN)	lbs/tube (kN)
Clay, Sandy Clay, Silty Clay & Clayey Silt	2000 (95.76)	1700 lbs/tube (7.6)	5160 lbs/tube (23.0)	5160 lbs/tube (23.0)	9800 lbs/tube (43.6)
Sand, Silty Sand, Clayey Sand, Silty Gravel, & Clayey Gravel	3000 (143.64)	2550 lbs/tube (11.3)	7740 lbs/tube (34.4)	7740 lbs/tube (34.4)	14700 lbs/tube (65.4)
Sandy Gravel or Gravel	5000 (239.40)	4250 lbs/tube (18.9)	12,900 lbs/tube (57.4)	12,900 lbs/tube (68.9)	24500 lbs/tube (108.0)
Sedimentary Rock	6000 (287.28)	5100 lbs/tube (22.7)	15480 lbs/tube (68.9)	15480 lbs/tube (68.9)	29400 lbs/tube (110.8)
Crystalline Bedrock	12,000 (574.56)	10,200 lbs/tube (45.4)	30960 lbs/tube (137.8)	30960 lbs/tube (137.8)	58800 lbs/tube (261.5)

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