



Evaluation Report CCMC 13309-R The Footing Tube

MASTERFORMAT:	03 11 13.04
Evaluation issued:	2008-04-07
Re-evaluated:	2014-04-14
Re-evaluation due:	2017-04-07

1. Opinion

It is the opinion of the Canadian Construction Materials Centre (CCMC) that “The Footing Tube”, when used as a concrete pier in accordance with the conditions and limitations stated in Section 3 of this Report, complies with the National Building Code 2010:

- Clause 1.2.1.1.(1)(b), Division A, as an alternative solution that achieves at least the minimum level of performance required by Division B in the areas defined by the objectives and functional statements attributed to the following applicable acceptable solutions:
 - Subsection 9.15.3., Footings

This opinion is based on CCMC's evaluation of the technical evidence in Section 4 provided by the Report Holder.

2. Description

The product is a concrete pier form that is made of plastic and manufactured from recycled, linear low-density polyethylene with an ultraviolet stabilizer. The tube is tapered to provide stackability during shipping and storage, and has a resistance to frost penetration and water. The concrete pier form is available in three sizes: 152 mm (6 in.), 203 mm (8 in.) and 254 mm to 305 mm (10 in. to 12 in.). A base pier measuring 546 mm (21 in.) (FTB30) is also available, which can be used under the 203-mm (8 in.) or 254-mm to 305-mm (10 in. to 12 in.) tube to accommodate additional loadbearing areas.

The product is identified with height scribe lines to indicate the level of concrete required to fill the tube and determine backfill height. The tube can also be cut to the desired height using the scribe lines as a guide.

The safety top on the tube keeps out water, dirt from backfilling, and other debris that can be present on-site during construction.

Table 2.1 provides specific dimensions for the 152-mm, 203-mm and 254-mm to 305-mm tubes and the 546-mm FTB30 base pier. The FTB30 base pier is not mechanically connected to the tubes, which makes it easier to adjust before leveling.

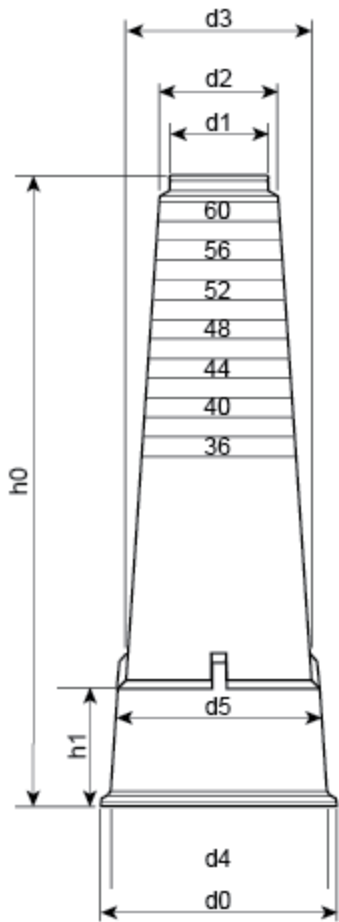


Figure 1. “The Footing Tube” details

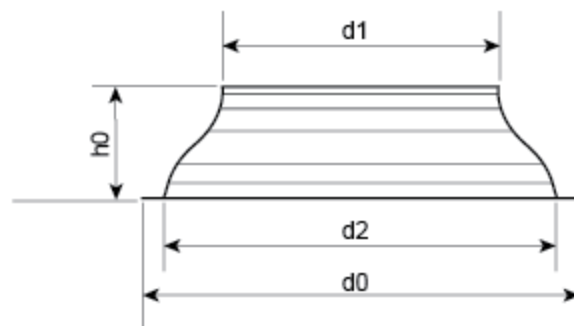


Figure 2. FTB30 base pier details

Table 2.1 Dimensions of “The Footing Tube” and the FTB30 Base Pier

Tube/Footing Diameter (d ₁)	Dimensions (mm)							
	d ₀	d ₁	d ₂	d ₃	d ₄	d ₅	h ₀	h ₁
152 mm (6 in.)	355	152	152	297	304	297	1 372	152
203 mm (8 in.)	609	203	203	356	558	499	1 591	216
254 mm to 305 mm (10 in. to 12 in.)	609	254	305	477	559	521	1 626	304
546 mm (21 in.) (FTB30)	856	546	762	n/a ¹	n/a	n/a	229	n/a

Note to Table 2.1:

¹ n/a means not applicable.

3. Conditions and Limitations

CCMC's compliance opinion in Section 1 is bound by the “The Footing Tube” being used in accordance with the conditions and limitations set out below.

- The product may be used as a casting product for concrete piers for applications such as decks, porches, fence posts, one-storey cottages and additions, lampposts, pole barns and point load beams.
- In cases where the product is used in seismic zones as defined in Sentence 4.1.8.16.(3), Foundation Provisions, of Division B of the NBC 2010, unreinforced products (tubes) will not be adequate. Proper seismic designs must be carried out by a registered professional engineer in accordance with the applicable codes, including the NBC 2010.
- The allowable bearing pressures and loads for the product are specified in Table 3.1. For applications beyond the scope of this Table, consult a registered professional engineer in accordance with the applicable codes, including the NBC 2010.

Table 3.1 Test Results for Allowable Bearing Pressures and Loads

Soil Description	Allowable Bearing Pressure ^{1 2} (kPa)	Allowable Loads			
		152-mm (6 in.) Footing Tube ³ 0.078 m ² Base Area	203-mm (8 in.) Footing Tube ⁴ 0.239 m ² Base Area	254-mm to 305-mm (10 in. to 12 in.) Footing Tube ⁵ 0.239 m ² Base Area	FTB30 0.455 m ² Base Area
Dense or compact sand or gravel	150	11.8 KN/tube	35.9 KN/tube	35.9 KN/tube	68.2 KN/tube
Loose sand or gravel	50	3.9 KN/tube	11.9 KN/tube	11.9 KN/tube	22.7 KN/tube
Dense or compact silt	100	7.8 KN/tube	23.9 KN/tube	23.9 KN/tube	45.5 KN/tube
Stiff clay	150	11.8 KN/tube	35.9 KN/tube	35.9 KN/tube	68.2 KN/tube
Firm clay	75	5.9 KN/tube	17.9 KN/tube	17.9 KN/tube	34.1 KN/tube
Soft clay	40	3.1 KN/tube	9.5 KN/tube	9.5 KN/tube	18.1 KN/tube
Till	200	15.7 KN/tube	47.9 KN/tube	47.9 KN/tube	91.0 KN/tube
Clay shale	300	23.6 KN/tube	71.8 KN/tube	71.8 KN/tube	136.5 KN/tube
Sound bedrock	500	39.4 KN/tube	119.8 KN/tube	119.8 KN/tube	227.5 KN/tube

Notes to Table 3.1:

- ¹ Referenced in Table 9.4.4.1. of Division B of the NBC 2010.
- ² Where a foundation bears on gravel, sand or silt, and the water table is within a distance below the bearing surface equal to the width of the foundation, the allowable bearing pressure shall be 50% of that determined in Article 9.4.4.1., Allowable Bearing Pressures, of Division B of the NBC 2010.
- ³ Not for use where frost depth exceeds 1.3 m.
- ⁴ Not for use where frost depth exceeds 1.4 m.
- ⁵ Not for use where frost depth exceeds 1.5 m.

- The concrete shall be designed, mixed, placed, cured and tested in accordance with CAN/CSA-A438-00, “Concrete Construction for Housing and Small Buildings,” and shall comply with Subsection 9.3.1., Concrete, of Division B of the NBC 2010. The excavation hole must be backfilled according to the suggested depths before pouring the concrete.
- The product must be installed according to the manufacturer’s installation manual, dated February 2008.

4. Technical Evidence

The Report Holder has submitted technical documentation for CCMC’s evaluation. Testing was conducted at laboratories recognized by CCMC. The corresponding technical evidence for this product is summarized below.

4.1 Performance Requirements

Table 4.1 Test Results for Stability

Tube	Requirement	Result ¹
152 mm (6 in.)	Within 10 mm horizontally of original position	Pass
203 mm (8 in.)	Within 10 mm horizontally of original position	Pass
254 mm to 305 mm (10 in. to 12 in.)	Within 10 mm horizontally of original position	Pass
546 mm (21 in.) (FTB30)	Within 10 mm horizontally of original position	Pass

Note to Table 4.1:

- ¹ The purpose of this test is to establish that the tubes will remain stable and correctly in place during the placement and curing of concrete after backfilling.

Report Holder

Cliffcorp Inc. - The Footing Tube
5290 Route 102
Upper Kingsclear, NB E3E 2P7

Telephone: 1-888-929-2011

506-363-3959

Fax: 506-363-3960

Email: concrete@foottube.com

Web: www.foottube.com

Plant(s)

Sheila, NB

Disclaimer

This Report is issued by the Canadian Construction Materials Centre, a program of NRC Construction at the National Research Council of Canada. The Report must be read in the context of the entire CCMC Registry of Product Evaluations, including, without limitation, the introduction therein which sets out important information concerning the interpretation and use of CCMC Evaluation Reports.

Readers must confirm that the Report is current and has not been withdrawn or superseded by a later issue. Please refer to http://www.nrc-cnrc.gc.ca/eng/solutions/advisory/ccmc_index.html, or contact the Canadian Construction Materials Centre, NRC Construction, National Research Council of Canada, 1200 Montreal Road, Ottawa, Ontario, K1A 0R6. Telephone (613) 993-6189. Fax (613) 952-0268.

NRC has evaluated the material, product, system or service described herein only for those characteristics stated herein. The information and opinions in this Report are directed to those who have the appropriate degree of experience to use and apply its contents. This Report is provided without representation, warranty, or guarantee of any kind, expressed, or implied, and the National Research Council of Canada (NRC) provides no endorsement for any evaluated material, product, system or service described herein. NRC accepts no responsibility whatsoever arising in any way from any and all use and reliance on the information contained in this Report. NRC is not undertaking to render professional or other services on behalf of any person or entity nor to perform any duty owed by any person or entity to another person or entity.

Date modified:
2014-05-06