ES REPORT™

ER-6073

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Filing Category: DESIGN—Concrete

SOUND FOOTINGS LLC TUBEBASE™ FOOTING FORMS

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1.0 SUBJECT

TubeBase™ Footing Forms.

2.0 DESCRIPTION

2.1 General:

The Sound Footings LLC TubeBase Footing Forms are formwork complying with Section 1906.1 of the 1997 *Uniform Building Code*™ (UBC) and the 2000 *International Building Code*® (IBC) for concrete spread foundation and footings. The system consists of a construction tube attached, at the jobsite, to the top of the Sound Footings LLC TubeBase™ square-shaped footing form. Except as noted in this report, the construction tube and TubeBase™ footing form are permitted to remain in place after the concrete has cured.

The Sound Footings LLC TubeBase™ footing forms are available in two sizes, designated Model TB 22 and Model TB 32, and are for concrete footing widths of 22 inches and 32 inches (559 mm and 813 mm), respectively. The gussets found on all four sides of the form are intended to strengthen and stiffen the forms. The $^5/_8$-inch-diameter (15.9 mm) holes (see Figure 1) are intended to allow trapped air to escape. The top of the Sound Footing LLC TubeBase™ footing form is designed to accept different diameters of construction tubes, by the cutting and removing of rings of the top flange that are smaller than the largest diameter ring that fits inside the construction tube. Model TB 22 is used with nominal 8- and 10-inch-diameter (203 mm and 254 mm) tubes. Model TB 32 is used with nominal 12-inch-diameter (305 mm), 14-inch-diameter (356 mm), 16-inch-diameter (406 mm), and 18-inch-diameter (457 mm) tubes. See Table 1 for details on construction tube diameters and the Sound Footings LLC TubeBase™ footing form top flange diameter.

The bottoms of the forms have a flange designed to fit flat on the excavated area.

2.2 Materials:

2.2.1 Sound Footings LLC TubeBase™ Footing Form: The forms are manufactured from Prime Block Copolymer Polypropylene.

2.2.2 Construction Tube: Construction tubes are cellulosic fiber construction tubes having a minimum wall thickness of 0.080 inch (2.0 mm). These are supplied by others, as recommended by Sound Footings LLC. See Table 2 for construction tubes recommended by Sound Footings LLC.

2.2.3 Concrete: Normal-weight concrete must have a minimum 28-day compressive strength of 3,000 psi (20.7 MPa), must contain $^3/_4$-inch (19.1 mm) aggregate (maximum), and must have an approximate slump of 5 inches (127 mm).

2.3 Installation:

2.3.1 General: Rings on the top flange of the Sound Footings LLC TubeBase™ footing form that are smaller than the largest diameter ring that fits inside the construction tube being used must be cut and removed from the footing form. The construction tube must be installed over the top flange of the footing form, and must be attached to the form using a minimum of four $^3/_4$- to 1-inch-long (19.1 to 25.4 mm), No. 8, corrosion-resistive screws.

For grade-level installations, or below-grade-level installations in which the tube extends 3 feet (914 mm) or more above ground level, the top of the construction tube must be braced as shown in Figure 2, with four scab boards attached to the construction tubes by means of two or more screws per board, from inside the construction tubes.

After the concrete has cured, the wooden braces must be removed, and the upper end of the construction tube must be removed to a depth of 12 inches (305 mm) below the finished grade. The remainder of the construction tube, and the plastic footing form, are permitted to remain in place.

2.3.2 Grade-level Installations: For installations at ground level, the length of the construction tubes must be such that the combined height of the pier and footing does not exceed 5 feet (1524 mm). The footing forms must be placed on undisturbed soil. To prevent movement of the footing forms during concrete placement, steel spikes must be driven into the soil at a 45-degree angle, through $^3/_8$-inch-diameter (9.5 mm) holes that are field-drilled at a 45-degree angle. Installation must be as shown in Figure 1. Fourteen and sixteen spikes are used for the Models TB 22 and TB 32 footing forms, respectively. The spikes must be a minimum of 12 inches (305 mm) long, with shank diameters of $^3/_8$ inch (9.5 mm) and head diameters of $^5/_8$ inch (15.9 mm). If the spikes do not prevent movement of the footing forms, alternative restraining methods must be used, such as sandbags or backfill.

2.3.3 Below-grade-level Installations: For below-grade-level applications, for the TB 22, the length of 8-inch-diameter (203 mm) construction tube must be such that the combined height of the pier and footing does not exceed 8

feet (2438 mm), with a maximum aboveground concrete height of 5 feet (1524 mm). The length of the 10-inch-diameter (254 mm) construction tube on Model TB 22 must be such that the combined height of the pier and footing does not exceed 13 feet (3962 mm), with a maximum aboveground concrete height of 8 feet (2438 mm). For Model TB 32, the length of 12-, 14-, 16-, and 18-inch-diameter (305, 356, 406, and 457 mm) construction tubes must be such that the combined height of the pier and footing does not exceed 13 feet (3962 mm), with a maximum aboveground concrete height of 8 feet (2438 mm).

The footing form must be placed on undisturbed soil or on 4 to 6 inches (102 to 152 mm) of compacted, crushed stone or gravel. Backfill must be placed over the footing form to a minimum height of 2 feet (610 mm), not to exceed 5 feet (1524 mm) from the bottom of the footing form, prior to concrete placement. The backfill must be of sufficient height to prevent movement of the footing forms. Any additional backfilling is completed after the concrete has been placed. The backfill must be compacted. The concrete must be placed in lifts that are 10 to 16 inches (254 to 406 mm) in height, with the concrete being consolidated after each lift.

2.4 Design:

The concrete footings and pier must be designed in accordance with the applicable code.

2.5 Identification:

The Sound Footings LLC TubeBase™ footing forms are engraved with the model number on the base, and have labels specifically noting the ICBO evaluation report number (ICBO ES ER-6073).

3.0 EVIDENCE SUBMITTED

Descriptive information, a quality control manual, and a report of tests to address the footing forms remaining in position during concrete placement; effects of backfilling, prior to concrete placement, on the shape of the footing; and air pockets in the concrete footing.

4.0 FINDINGS

That the Sound Footings LLC TubeBase™ footing forms described in this report comply with the 1997 *Uniform Building Code*™ (UBC) and the 2000 *International Building Code*® (IBC), subject to the following conditions:

4.1 The footing form system is installed in accordance with this evaluation report and the manufacturer's instructions.

4.2 The footing and pier are designed in accordance with the applicable code.

4.3 Special inspection is provided in accordance with Section 1701 of the UBC and Section 1704 of the IBC, as applicable.

This report is subject to re-examination in one year.

TABLE 1—DIAMETERS OF CONSTRUCTION TUBE AND SOUND FOOTINGS LLC TUBEBASE™ FORM

CONSTRUCTION TABLE			SOUND FOOTINGS LLC TUBEBASE™ FORM FLANGE DIAMETER (inches)
Nominal Diameter (inches)	Size	Inside Diameter (inches)	
8	Small Medium Large	7.530 8.025 8.450	7.530 8.025 8.450
10	Small Medium Large	9.457 9.900 10.400	9.457 9.900 10.400
12	Small Medium Large	11.500 12.000 12.450	11.500 12.000 12.450
14	Medium	14.100	14.100
16	Medium	16.100	16.100
18	Medium	18.100	18.100

For **SI:** 1 inch = 25.4 mm.

TABLE 2—SOUND FOOTINGS RECOMMENDED CONSTRUCTION TUBES

CONSTRUCTION TUBE COMPANY	CONSTRUCTION TUBE NAME
Sonoco	Builder Tubes
King Packaged Materials Company, Sonoco, Canada	King Builders Tube, Light Wall
Sonoco USA	Builders Tube, Light Wall
Eastern tube/Division of Abzac Canada Inc.	Eastern Tube
Mayers fibre Tube & Core.	Easy Pour; Light Wall
Crown Fibre Tube, Inc.	Econo and Premium Fibre Forms
Caraustar Industrial and Consumer Products Group	Kolumn Form
Newark Paper Board Products	New Form (Standard/Heavy); Quickrete Tubes

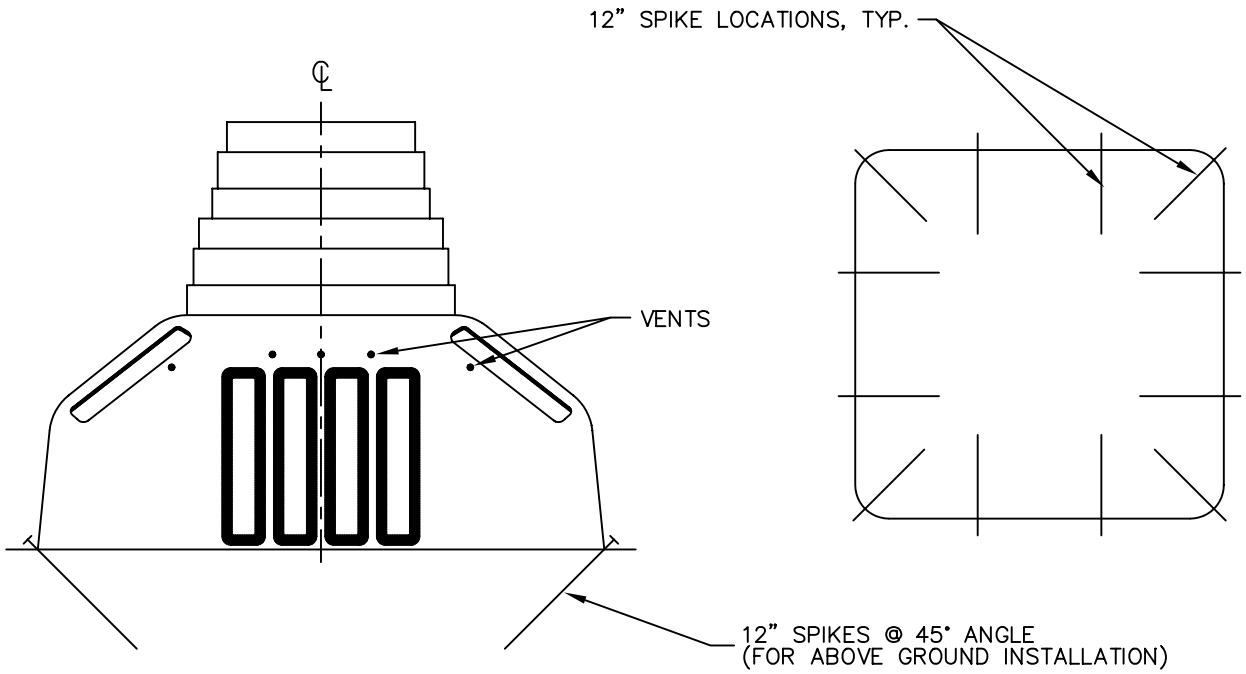

FIGURE 1
N.T.S.

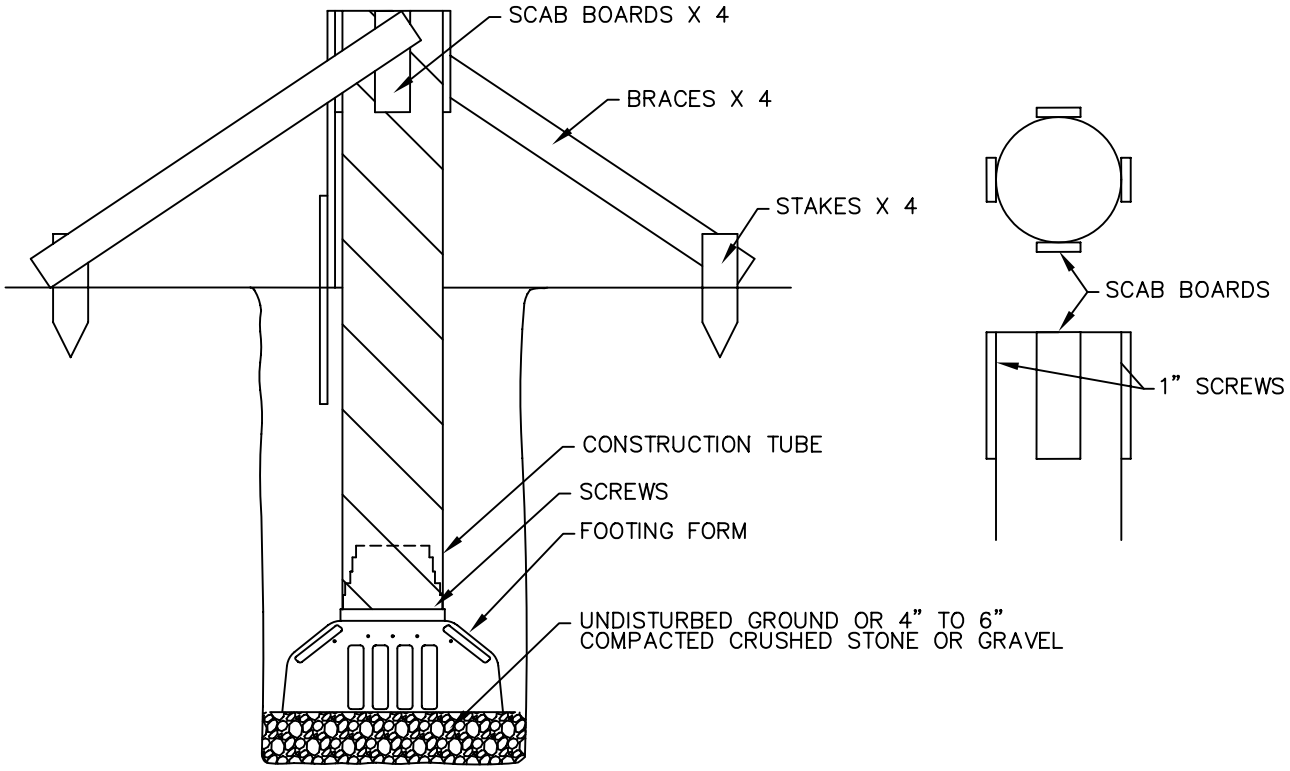

FIGURE 2
N.T.S.