

Knox County Code Administration & Inspection

2018 IRC Residential Footing Information



REV.022019

1. Footings are required on all exterior walls, beneath each end of interior girder beams, and beneath all posts supporting decks.
2. Minimum sizes for concrete and masonry footings are based on the load-bearing value of the soil, type of construction, and height of construction. **Table 1** below can be used to size footings.
3. Spread footings shall be at least 8" thick and shall have projections (P) at least 2" on each side of the foundation wall but not more than the thickness of the footing.
4. All exterior footings shall be placed such that the bottom of the footing is 12" minimum below the undisturbed ground surface or finished grade.
5. Additional footing information and requirements can be obtained in Section R403 of the 2018 International Residential Code ®.
6. Slab footings shall be protected against frost by installing insulation per Section R403.3 of the 2018 International Residential Code ®.

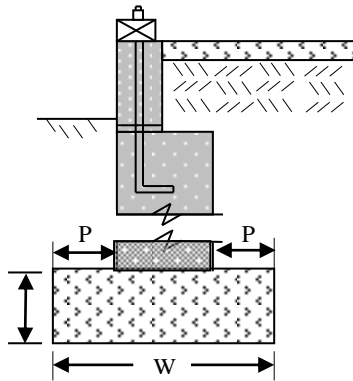
TABLE 1: MINIMUM WIDTH (W) AND THICKNESS (T) OF CONCRETE OR MASONRY FOOTINGS (inches)

MINIMUM WIDTH AND THICKNESS FOR CONCRETE FOOTINGS FOR LIGHT-FRAME CONSTRUCTION (inches)						
20 psf SNOW LOAD OR ROOF LIVE LOAD	LOAD-BEARING VALUE OF SOIL (psf)					
	1,500	2,000	2,500	3000	3,500	4,000
1-Story – Slab-on-grade	12 X 6	12 x 6	12 x 6	12 x 6	12 x 6	12 x 6
1-Story – with crawl space	12 X 6	12 x 6	12 x 6	12 x 6	12 x 6	12 x 6
1-Story – plus basement	18 x 6	14 x 6	12 x 6	12 x 6	12 x 6	12 x 6
2-Story – Slab-on-grade	12 x 6	12 x 6	12 x 6	12 x 6	12 x 6	12 x 6
2-Story – with crawl space	16 x 6	12 x 6	12 x 6	12 x 6	12 x 6	12 x 6
2-Story – plus basement	22 x 6	16 x 6	13 x 6	12 x 6	12 x 6	12 x 6
3-Story – Slab-on-grade	14 x 6	12 x 6	12 x 6	12 x 6	12 x 6	12 x 6
3-Story – with crawl space	19 x 6	14 x 6	12 x 6	12 x 6	12 x 6	12 x 6
3-Story – plus basement	25 x 8	19 x 6	15 x 6	13 x 6	12 x 6	12 x 6

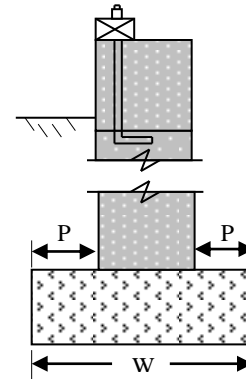
MINIMUM WIDTH AND THICKNESS FOR CONCRETE FOR LIGHT FRAME CONSTRUCTION WITH BRICK VENEER (inches)						
20 psf SNOW LOAD OR ROOF LIVE LOAD	LOAD-BEARING VALUE OF SOIL (psf)					
	1,500	2,000	2,500	3000	3,500	4,000
1-Story – Slab-on-grade	12 X 6	12 x 6	12 x 6	12 x 6	12 x 6	12 x 6
1-Story – with crawl space	15 X 6	12 x 6	12 x 6	12 x 6	12 x 6	12 x 6
1-Story – plus basement	21 x 6	15 x 6	12 x 6	12 x 6	12 x 6	12 x 6
2-Story – Slab-on-grade	15 x 6	12 x 6	12 x 6	12 x 6	12 x 6	12 x 6
2-Story – with crawl space	20 x 6	15 x 6	12 x 6	12 x 6	12 x 6	12 x 6
2-Story – plus basement	26 x 8	20 x 6	16 x 6	13 x 6	12 x 6	12 x 6
3-Story – Slab-on-grade	20 x 6	15 x 6	12 x 6	12 x 6	12 x 6	12 x 6
3-Story – with crawl space	26 x 8	19 x 6	15 x 6	13 x 6	12 x 6	12 x 6
3-Story – plus basement	32 x 11	24 x 7	19 x 6	16 x 6	14 x 6	12 x 6

MINIMUM WIDTH AND THICKNESS FOR CONCRETE FOOTINGS WITH CAST-IN-PLACE CONCRETE OR FULLY GROUTED MASONRY WALL CONSTRUCTION (inches)

20 psf SNOW LOAD OR ROOF LIVE LOAD	LOAD-BEARING VALUE OF SOIL (psf)					
	1,500	2,000	2,500	3000	3,500	4,000
1-Story – Slab-on-grade	14 X 6	12 x 6	12 x 6	12 x 6	12 x 6	12 x 6
1-Story – with crawl space	19 X 6	14 x 6	12 x 6	12 x 6	12 x 6	12 x 6
1-Story – plus basement	25 x 8	19 x 6	15 x 6	13 x 6	12 x 6	12 x 6
2-Story – Slab-on-grade	23 x 7	18 x 6	14 x 6	12 x 6	12 x 6	12 x 6
2-Story – with crawl space	29 x 9	22 x 6	17 x 6	14 x 6	12 x 6	12 x 6
2-Story – plus basement	35 x 12	26 x 8	21 x 6	17 x 6	15 x 6	13 x 6
3-Story – Slab-on-grade	32 x 11	24 x 7	19 x 6	16 x 6	14 x 6	12 x 6
3-Story – with crawl space	38 x 14	28 x 9	23 x 6	19 x 6	16 x 6	14 x 6
3-Story – plus basement	43 x 17	33 x 11	26 x 8	22 x 6	19 x 6	16 x 6



GROUND SUPPORT SLAB WITH MASONRY WALL AND SPREAD FOOTING



BASEMENT OR CRAWL SPACE WITH MASONRY WALL AND SPREAD FOOTING

Owner is responsible for scheduling footing inspections.