

# Helix Micro-Rebar Application Guide

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## Footings

### Basic Requirements

- Footing designed according to IRC or IBC

### Approval Method, Design Basis and Class

- Class A: Shrinkage and temperature - Uniform ES ER-0279 Section 4.2
- Class B: Structural reinforcement - Uniform ES ER-0279 Section 4.3

### Instructions

- If needed, calculate the rebar spacing by dividing the width or the length of the footing by the number of rebar provided.
- Select the dosage in the table below based on the footing thickness and reinforcement detail.
- Review Uniform ES ER-0279 to assure compliance with restrictions.
- To activate the performance guarantee\* submit your design to [www.helixsteel.com/technical](http://www.helixsteel.com/technical) to register.
- Note the drawing with the Helix alternative "use the rebar as shown on the drawing or XX lb/yd<sup>3</sup> Helix 5-25 designed in accordance with Uniform ES ER-0279".
- Instruct the contractor to contact Helix for pricing, delivery and installation instructions at 734-322-2114 or [sales@helixsteel.com](mailto:sales@helixsteel.com).
- This table shows only a sampling of common configurations. Any footing configuration meeting the basic requirements above may be designed with Helix in accordance with Uniform ES ER-0279 using Class B Design, Section 4.3, and using the methods described in section 4.6.

**Dosage of Helix 5-25 Based on Footing and Rebar Configuration (lb/yd<sup>3</sup>)**

Rebar Configuration	Steel reinforcement ratio (in <sup>2</sup> /ft)	Footing thickness				
		8 inches	10 inches	12 inches	14 inches	16 inches
#4 at 6"	0.40	Note 4	33.5	30.1	27.4	25.0
#4 at 8"	0.30	27.4	25.1	22.9	19.0	17.3
#4 at 10"	0.24	22.2	20.4	16.8	15.1	13.7
#4 at 12"	0.20	18.7	15.4	13.9	12.6	11.5
#5 at 8"	0.47	Note 4	Note 4	34.9	Note 4	29.0
#5 at 10"	0.37	33.1	Note 4	27.9	25.4	21.5
#5 at 12"	0.31	27.9	25.8	23.5	19.6	17.8

Notes:

1. Table is based on concrete with a minimum specified compressive strength of 3,000 psi.
2. Table values are calculated using a concrete cover for the rebar of 3 inches from the bottom of the footing
3. If rebar is placed at the center of the thickness, Helix dosage may be multiplied by a factor of 0.75
4. Contact Helix Steel for dosage because configuration may require a hybrid design.

The PE stamp signifies that the design tables have been prepared in accordance with Uniform ES ER-0279

\*See [www.helixsteel.com/technical/specify-helix](http://www.helixsteel.com/technical/specify-helix) for further details

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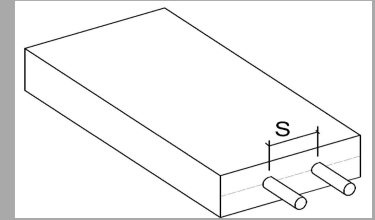
**HELIX**<sup>TM</sup>  
**Micro-Rebar**

**Given:**

- Strip footing 10" thick and 20" wide
- Reinforcement is 2 - #4 bar located 3 " off the bottom (concrete cover)

**Calculation:**

- Step 1 - Calculate the rebar spacing by dividing the width or the length of the footing by the number of rebar provided :  $20" / 2 = 10"$  Spacing
- Step 2 - Find the column in the table for the footing thickness (yellow)
- Step 3 - Read across the table for #4 at 10" spacing or steel reinforcement ratio (blue)
- Step 4 - Select the dosage rate at the intersection , 20.4 lb/yd<sup>3</sup> (green)
- Step 5 - Add note to drawing with the Helix alternative: "Use the rebar as shown on the drawing or 20.4 lb/yd<sup>3</sup> Helix 5-25 designed in accordance with Uniform ES Report 0279"
- Step 6 - If required, a calculation can be provided for the result shown in the table.. Contact your local Helix representative.



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