

Helix Micro-Rebar Application Guide

Slab on Grade

Basic Requirements

- Soil Supported
- Joints spacing meets ACI 360 R10
- Original rebar or mesh design available
- Installed in accordance with ACI 302.1

Approval Method

- Slabs that do not support building structure: ACI 360 chapter 11 method 1 (Elastic Design), UES ER-0279 Section 4
- Slabs that support building or roof structure: ACI 318-08 or 11 section 1.4, UES ER-0279 Section 4

Design Basis and Class

- Class A (Shrinkage and Temperature): When original reinforcement ratio is less than 0.018
- Class B (Structural Slabs): When original reinforcement ratio exceeds 0.018

Instructions:

- Select the dosage in the table below based on the original 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 to register.
- Note the drawing with the Helix alternative. "Use the rebar as shown on the drawing or XX lb/yd Helix 5-25 designed in accordance with Uniform ES ER-0279"
- Instruct contractor to contact Helix for pricing, delivery and installation instructions at 734-322-2114 or sales@helixsteel.com

Common Mesh Arrangements Imperial Units

3000 psi Concrete		4 inch	5 inch	6 inch	7 inch	8 inch	10 inch
Grade 60 WWF		Minimum Helix 5-25 Micro Rebar Dosage (lb/yd ³)					
6x6	W1.4XW1.4	4.5	4.5	4.5	4.5	4.5	4.5
6X6	W2.0XW2.0	5.9	4.5	4.5	4.5	4.5	4.5
6X6	W2.9XW2.9	8.3	6.4	5.8	4.5	4.5	4.5
6X6	W4XW4	11.2	9.1	7.7	6.4	5.6	4.5
4X4	W2.9XW2.9	12.2	9.8	8.2	6.9	5.8	4.7
6X6	W5.5XW5.5	17.7	12.3	10.0	8.2	7.5	6.0
4X3	W4XW4	19.0	15.5	10.5	9.0	8.2	6.4
4X4	W5.5XW5.5	25.6	20.7	15.0	12.5	10.7	9.0

Single Layer Rebar Imperial Units

3000 psi Concrete		4 inch	5 inch	6 inch	7 inch	8 inch	10 inch
Grade 60 Rebar		Minimum Helix 5-25 Micro Rebar Dosage (lb/yd ³)					
#3	24" OC	7.5	6.1	4.8	4.5	4.5	4.5
#3	18" OC	9.5	7.8	6.4	5.5	5.0	4.5
#3	16" OC	10.7	8.6	7.2	6.4	5.5	4.5
#3	12" OC		11.8	10.0	8.2	7.5	5.0
#4	24" OC	16.4	11.3	9.0	7.5	6.7	5.3
#4	18" OC	20.0	16.4	12.0	10.0	9.0	7.0
#4	16" OC	22.5	18.0	15.0	11.3	10.0	8.2
#4	12" OC	35.0	25.0	20.0	18.0	15.0	11.3
#5	12" OC		47.2	33.8	27.0	22.5	18.4

Common Mesh Arrangements Metric Units

20 MPa Concrete		100 mm	150 mm	200 mm	250 mm
Grade 500 WWF		Helix Micro Rebar Dose (kg/m ³)			
200mm	4.75mm	4.5	3.2	3.0	3.0
200mm	6mm	7.0	4.8	3.7	3.0
200mm	6.75mm	8.6	5.8	4.5	3.7
200mm	7.6mm	12.4	7.3	5.6	4.5
200mm	8.6mm	15.6	9.3	7.0	5.7
200mm	9.5mm		12.6	8.5	6.9
100mm	7.6mm			12.1	8.7

Single Layer Rebar Metric Units

20 MPa Concrete		100 mm	150 mm	200 mm	250 mm
Grade 500 Rebar		Helix Micro Rebar Dose (kg/m ³)			
10mm	400 mm	9.3	6.3	4.8	3.9
10mm	300 mm	14.0	8.3	6.3	5.1
10mm	200 mm		13.6	9.3	7.5
12mm	400 mm	15.1	9.0	6.8	5.5
12mm	300 mm		13.3	9.0	7.3
12mm	200 mm			14.8	11.9
16mm	400 mm			13.3	10.7
16mm	300 mm				14.0

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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 for further details

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HELIXTM
Micro-Rebar

Given

- Slab on ground, 5" thick
- Reinforcement is #3 @ 16" on center

Calculation

Step 1 - Find the column in the table for the slab thickness (yellow)

Step 2 - Read across the table for #3 at 16" spacing or steel reinforcement ratio (blue)

Step 3 - Select the dosage rate at the intersection, 8.6 lb/yd³ (green)

Step 4 - Add note to drawing with the Helix alternative: "Use the rebar as shown on the drawing or 8.6 lb yd³ Helix 5-25 designed in accordance with Uniform ES ER-0279"

Step 5 - If required, a calculation can be provided for the result shown in the table. Contact your local Helix representative.

Single Layer Rebar Imperial Units

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