

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

Basic Requirements

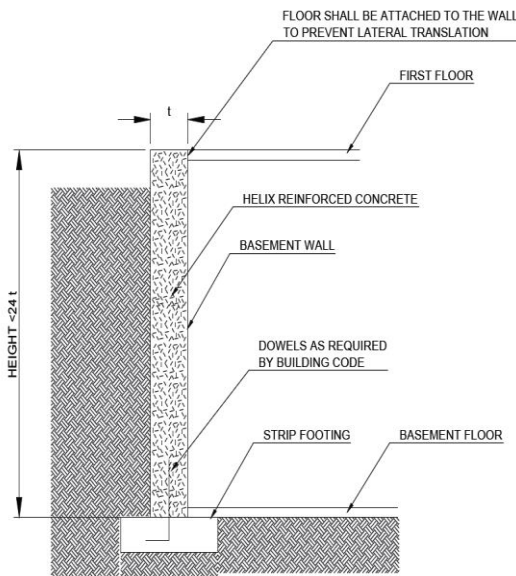
- Wall thickness is 8" Nominal (7.5" Actual).
- Wall is braced against lateral translation. The shortest distance between the vertical or horizontal bracing shall be less than 24 times the wall thickness.
- Minimum (1) #4 bar is provided around all openings.
- Dowels provided at all cold joints at spacing equal to or less than the rebar spacing in table below, but not less than #4@48" spacing.

Approval Method, Design Basis and Class

- Class A (Shrinkage and Temperature): In non-load bearing direction or when original reinforcement ratio is less than 0.002, Uniform-ES ER-0279 Section 4.2.
- Class B (Structural reinforcement): In load bearing direction or when original reinforcement ratio exceeds 0.002, Uniform-ES ER-0279 Section 4.3.

Helix Conversion

- The following table contains dosage rates of Helix that have been calculated to provide the same or higher moment capacity than the moment capacity required based on loads analysis using Uniform-ES ER-0279 and elastic design methods.



Dosage of Helix 5-25 for Nominal 8" Thick Below Grade Walls

| WALL HEIGHT (FEET) | HEIGHT OF UNBALANCED BACKFILL (FEET) | SOIL CLASSES AND LATERAL SOIL LOAD | |
|--------------------|--------------------------------------|---|--|
| | | GM, GC, SM, SM-SC AND ML SOILS (45 PSF PER FOOT OF DEPTH) | SC, MH, ML-CL AND INORGANIC CL SOILS (60 (PSF PER FOOT OF DEPTH) |
| | | HELIX 5-25 DOSAGE RATE (lb/yd ³) | HELIX 5-25 DOSAGE RATE (lb/yd ³) |
| 8 | 6 | 9 | 9 |
| | 7 | 9 | 12 |
| 9 | 6 | 9 | 9 |
| | 7 | 9 | 13 |
| | 8 | 13 | 17 |
| 10 | 6 | 9 | 9 |
| | 7 | 9 | 14 |
| | 8 | 14 | 19 |
| | 9 | 18 | 24 |

Notes:

1. Table is based on concrete with a minimum specified compressive strength of 3,000 psi.
2. Interpolation is not permitted.
3. The thickness that has been used for design is 7.5".
4. Walls must be laterally supported at top and bottom of wall before backfilling.

Instructions for Conversion

- Review Uniform ES ER-0279 to assure compliance with restrictions.
- Determine the dosage in the table above based on the wall thickness, wall height, height of unbalanced backfill and lateral soil load (psf per foot of depth).
- To activate the performance guarantee, submit your design to Helix Steel at sales@helixsteel.com
- Note in the drawing with the Helix alternative: "Use the rebar as shown on the drawing or XX lbs/yd³ of 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 x1 or sales@helixsteel.com.
- This table shows only a sampling of common configurations. Any wall 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.

Example

- Basement wall 8" thick, 10' tall, 8' backfill, 12' long and 60 lateral soil (psf per foot of depth).
- Wall is laterally supported at top and bottom.

Step 1 - Calculate the bracing ratio which must be less than 24 for the least of height/thickness or length/thickness: Height (120") / thickness (7.5") = 16 ; length (144") / thickness (7.5") = 19. The smaller is less than 24 therefore Class B okay.

Step 2 - Read across the table for the wall height and backfill (yellow).

Step 3 - Find the column in the table for 60 psf per foot of depth lateral soil load (blue).

Step 4 - Select the dosage rate at the intersection, 19.0 lb/yd³ (green).

Step 5 - Add note to drawing with the Helix alternative: "Use the rebar as shown on the drawing or 19.0 lb/yd³ Helix 5-25 designed in accordance with Uniform ES ER-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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| | 7 | 9 | 13 |
| | 8 | 13 | 17 |
| 10 | 6 | 9 | 9 |
| | 7 | 9 | 14 |
| | 8 | 14 | 19 |
| | 9 | 18 | 24 |