

# PRESCRIPTIVE ENGINEERING HELIX REINFORCEMENT (CANADA)

# Build **Anything** Better.™











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#### LOGIX® INSULATED CONCRETE FORMS

#### **DISCLAIMER**

By using the Logix Design Manual, in part or in whole, the user accepts the following terms and conditions.

The Logix Design Manual shall be used for the sole purpose of estimating, design or construction of Logix Insulated Concrete Forms used in residential, commercial or industrial structures.

The information represented herein is to be used as a reference guide only. The user shall check to ensure the information provided in this manual, including updates and amendments, meets local building codes and construction practices by consulting local building officials, construction and design professionals, including any additional requirements.

Logix reserves the right to make changes to the information provided herein without notice and assumes no liability in connection with the use of this manual including modification, copying or distribution.

The user shall check to ensure that any construction projects utilizing the Logix Design Manual includes the latest updates/amendments (related to the version of the Logix Design Manual being used at the time of the construction project). Updates/amendments to the Logix Design Manual are available for download in the "Technical Library" under "Addenda" at www.logixicf.com.



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#### INTRODUCTION

LOGIX walls are intended to be used both above and below grade, and can carry large vertical as well as lateral loads. They are particularly effective for residential, commercial and industrial buildings; providing excellent insulation as well as thermal mass and structural strength. They can be easily adapted to accommodate concrete floors and other "non-standard" building systems.

Construction must be in conformance with the LOGIX Design Manual, including assembly of formwork, bracing, accurate rebar positioning, concrete mix design and placement, and details for interconnection with the other building components.

#### STRUCTURAL DESIGN AND PERFORMANCE

The LOGIX Building System can be used for an infinite variety of building situations with proper engineering. This report, with its load tables and diagrams, is intended to assist with the structural design  $\simeq$ of buildings using the LOGIX system for the basement only, or continuing to a second floor and/or roof. Where unusual conditions are encountered, it is recommended that the user consult a designer who can evaluate the loadings to the various components and who can appreciate the limitations of "prescriptive" design under unusual conditions. Connection details have generally been excluded from this report because of the great variety of floor and roof systems that can be used with the Logix wall system. The designer should refer to the Logix Product Manual and the literature for the various proprietary products that are available for connections, which are an important part of the total design.

#### HELIX TSMR TABLES - ALTERNATIVE TO REBAR REINFORCEMENT TABLES

Helix is steel fibre reinforcement that can significantly reduce the amount of horizontal and vertical reinforcement in above- and below-grade concrete walls, with exception of lintel and shear wall reinforcement.

#### LIMITATIONS

The limitations of Reinforcement apply to Helix reinforcement Tables 1A-H to 1D-H, and Table 2.1-H to 2.5-H.

Building limitations used to develop above- and below-grade Tables include:

Building perimeter = 24.384 m (80 ft) max x 12.192 m (40 ft) max Roof clear span = 12.192 m (40 ft) max Floor clear span = 6.096 m (20 ft) max Number of stories above grade = 2 max Number of stories below grade = 1

More specific design assumptions and limitations are located with the corresponding reinforcement tables.



#### **BELOW-GRADE WALL TABLES**

#### NOTES FOR BELOW-GRADE WALL TABLES

LOGIX below-grade Tables 1A-H to 1D-H, shall be used in conjunction with corresponding Figures 2A to 2D, the notes listed below, and the building limitations noted in the "Reinforcement Tables" and "Helix TSMR Tables - Alternative to Rebar Reinforcement Tables" section, which form the basis of these tables.

- Tables do not consider seismic loads. 1.
- Factored snow load = 3.54 kPa
- Horizontal rebar shall be 10M @ 32" o/c. Provide at least one 10M bar to be placed at the bottom course and top course. 3.
- Steel yield strength = 400 MPa, 28 day concrete compressive strength = 20 MPa 4.
- Deflection criteria = L/240 5.
- Assumed eccentricity = 3" (to account for loads on LOGIX Brick Ledge).
- The basement walls must be supported at the top and bottom of the wall. 7.
- For light vehicles parked or travelling near the wall use reinforcement corresponding to 1 ft higher backfill. 8.
- Where spaces have been left blank, the corresponding bar size is presumed to be less economical and/or practical than that shown. Consult a local licensed engineer to determine proper design.
- Provide two 15M bars (One 15M bar for 4" concrete core thickness) should be placed around all openings (along the vertical sides and bottom of opening), and extend a minimum of 2 ft beyond openings.
- 11. For walls with over 50% of height exposed to wind, also check rebar requirements for above-grade walls.
- Carefully consider floor/wall connection details for lateral loads, especially with higher backfills, walkout basements, and active seismic areas.
- Soil density is often referred to as "equivalent fluid density", and is the density of a liquid which would exert an equivalent horizontal load on a wall. The actual soil density is generally greater - ranging between 90 & 120 pcf.
- Consult a local licensed engineer for design of walls that fall outside the scope of the tables.

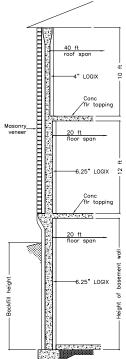


Fig 2A Assumed typical flooring, wall & roof for Table 1A. Height & thickness of above-grade walls, floor & roof spans, including materials (i.e., wood frame control and cladding) frame, concrete, and cladding) can vary provided the total factored load on basement wall does not exceed 6 kips/ft.

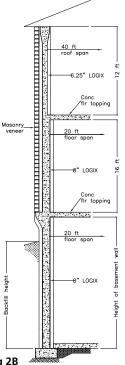


Fig 2B Assumed typical flooring, wall & roof for **Table 1B**. Height & thickness of above-grade walls, floor & roof spans, in-cluding materials (i.e., wood frame, concrete, and cladding) can vary provided the total factored load on basement wall does not exceed 7.5 kips/ft.

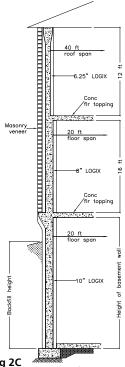


Fig 2C Assumed typical flooring, wall & roof for Table 1C. Height & thickness of above-grade walls, floor & roof spans, including materials (i.e., wood frame control and ladding) frame, concrete, and cladding) can vary provided the total factored load on basement wall does not exceed 7.5 kips/ft.

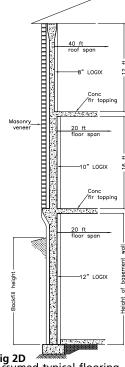


Fig 2D Assumed typical flooring, wall & roof for **Table 1D**. Height & thickness of above-grade walls, floor & roof spans, in-cluding materials (i.e., wood frame, concrete, and cladding) can vary provided the total factored load on basement wall does not exceed 8.3 kips/ft.



# LOGIX® INSULATED CONCRETE FORMS TABLE 1A-H - LOGIX 6.25" BELOW-GRADE WALLS WITH HELIX 5-25 REINF.

Maximum	Maximum	Helix Dosage and Hybrid Vertical Rebar Requirement					
Height of	Unbalanced	Maximum Maximum Maximum		Maximum			
Basement	Backfill	<b>Equivalent Density</b>	<b>Equivalent Density</b>	<b>Equivalent Density</b>	<b>Equivalent Density</b>		
Wall, ft	Height, ft	30 pcf	45 pcf	45 pcf 60 pcf			
8	4	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³		
	5	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³		
	6	9 lb/yd³	9 lb/yd³	16 lb/yd³	20 lb/yd³		
	7	9 lb/yd³	17 lb/yd³	22 lb/yd³	23 lb/yd³		
	8	9 lb/yd³	22 lb/yd³	23 lb/yd³	27 lb/yd³		
9	4	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³		
	5	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³		
	6	9 lb/yd³	9 lb/yd³	18 lb/yd³	22 lb/yd³		
	7	9 lb/yd³	19 lb/yd³	23 lb/yd³	23 lb/yd³		
	8	17 lb/yd³	23 lb/yd³	24 lb/yd³	30 lb/yd³		
	9	21 lb/yd³	23 lb/yd³	30 lb/yd³ + 10M @ 48"	30 lb/yd <sup>3</sup> + 10M @ 24"		
10	4	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³		
	5	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³		
	6	9 lb/yd³	9 lb/yd³	19 lb/yd³	23 lb/yd³		
	7	9 lb/yd³	20 lb/yd³	23 lb/yd³	25 lb/yd³		
	8	18 lb/yd³	23 lb/yd³	27 lb/yd³	30 lb/yd³ + 10M @ 48"		
	9	23 lb/yd³	26 lb/yd³	30 lb/yd³ + 10M @ 48"	30 lb/yd³ + 10M @ 12"		
	10	23 lb/yd³	30 lb/yd³ + 10M @ 48"	30 lb/yd³ + 10M @ 12"	30 lb/yd <sup>3</sup> + 15M @ 12"		
11	4	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³		
	5	9 lb/yd³	9 lb/yd³	9 lb/yd³	16 lb/yd³		
	6	9 lb/yd³	9 lb/yd³	20 lb/yd³	23 lb/yd³		
	7	9 lb/yd³	21 lb/yd³	23 lb/yd³	26 lb/yd³		
	8	19 lb/yd³	23 lb/yd³	29 lb/yd³	30 lb/yd³ + 10M @ 36"		
	9	23 lb/yd³	28 lb/yd³	30 lb/yd <sup>3</sup> + 10M @ 30"	30 lb/yd <sup>3</sup> + 10M @ 12"		
	10	23 lb/yd³	30 lb/yd <sup>3</sup> + 10M @ 42"	30 lb/yd <sup>3</sup> + 10M @ 12"	30 lb/yd <sup>3</sup> + 15M @ 12"		
	11	28 lb/yd³	30 lb/yd <sup>3</sup> + 10M @ 12"	30 lb/yd <sup>3</sup> + 15M @ 12"	30 lb/yd <sup>3</sup> + 20M @ 12"		
12	4	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³		
	5	9 lb/yd³	9 lb/yd³	9 lb/yd³	16 lb/yd³		
	6	9 lb/yd³	16 lb/yd³	20 lb/yd³	23 lb/yd³		
	7	15 lb/yd³	22 lb/yd³	23 lb/yd³	28 lb/yd³		
	8	21 lb/yd³	23 lb/yd³	30 lb/yd³	30 lb/yd <sup>3</sup> + 10M @ 24"		
	9	23 lb/yd³	30 lb/yd³	30 lb/yd <sup>3</sup> + 10M @ 18"	30 lb/yd <sup>3</sup> + 15M @ 18"		
	10	25 lb/yd³	30 lb/yd <sup>3</sup> + 10M @ 24"	30 lb/yd <sup>3</sup> + 15M @ 18"	30 lb/yd <sup>3</sup> + 20M @ 18"		
	11	30 lb/yd <sup>3</sup> + 10M @ 48"	30 lb/yd <sup>3</sup> + 10M @ 12"	30 lb/yd <sup>3</sup> + 15M @ 12"	30 lb/yd <sup>3</sup> + 20M @ 12"		
	12	30 lb/yd³ + 10M @ 30"	30 lb/yd <sup>3</sup> + 15M @ 12"	30 lb/yd <sup>3</sup> + 20M @ 12"	-		

- 1. Design and installation of Helix 5-25 Micro-Rebar reinforced concrete must be in accordance with Uniform Evaluation Service, ER-279. Designs given in above table are Helix Design Class B, and walls must conform to all restrictions of Section 4.3.5 of ER-279.
- 2. Conventional reinforcement (as required) to be placed on interior face of concrete wall. Effective depth of vertical rebar (exterior face of concrete to center of vertical rebar) = 4.375"
- 3. Table shall be read in conjunction with Fig 2A, and section "Notes for Below-grade Wall Tables."
- 4. Conventional rebar yield strength = 400 MPa, 28 day concrete compressive strength = 20.7 MPa (3000 psi).
- 5. Modulus of rupture of Helix reinforced concrete with 9 lb/yd³ Helix 5-25 = 7.5 v(3000 psi) = 410 psi = 2.83 MPa.
- 6. Walls must be laterally supported at top and bottom of wall before backfilling.
- 7. The listed Helix 5-25 dosage rate is adequate to replace the required horizontal 10M bars at 32 inches.
- 8. Tables do not consider seismic loads.
- 9. For more information contact your local Logix rep.



# **LOGIX® INSULATED CONCRETE FORMS** TABLE 1B-H - LOGIX 8" BELOW-GRADE WALLS WITH HELIX 5-25 REINF.

Maximum	Maximum	Helix Dosage and Hybrid Vertical Rebar Requirement					
Height of	Unbalanced	Maximum	Maximum	Maximum	Maximum		
Basement	Backfill	<b>Equivalent Density</b>	<b>Equivalent Density</b>	<b>Equivalent Density</b>	<b>Equivalent Density</b>		
Wall, ft	Height, ft	30 pcf	45 pcf	60 pcf	75 pcf		
8	4	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³		
	5	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³		
	6	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³		
	7	9 lb/yd³	9 lb/yd³	9 lb/yd³	17 lb/yd³		
	8	9 lb/yd³	9 lb/yd³	18 lb/yd³	22 lb/yd³		
9	4	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³		
	5	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³		
	6	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³		
	7	9 lb/yd³	9 lb/yd³	15 lb/yd³	19 lb/yd³		
	8	9 lb/yd³	15 lb/yd³	20 lb/yd³	25 lb/yd³		
	9	9 lb/yd³	19 lb/yd³	25 lb/yd³	26 lb/yd³		
10	4	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³		
	5	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³		
	6	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³		
	7	9 lb/yd³	9 lb/yd³	17 lb/yd³	20 lb/yd³		
	8	9 lb/yd³	17 lb/yd³	22 lb/yd³	26 lb/yd³		
	9	9 lb/yd³	21 lb/yd <sup>3</sup>	26 lb/yd³	26 lb/yd³		
	10	18 lb/yd³	26 lb/yd <sup>3</sup>	26 lb/yd³	30 lb/yd <sup>3</sup> + 10M @ 48"		
11	4	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³		
	5	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³		
	6	9 lb/yd³	9 lb/yd³	9 lb/yd³	15 lb/yd³		
	7	9 lb/yd³	9 lb/yd³	17 lb/yd³	22 lb/yd³		
	8	9 lb/yd³	18 lb/yd³	23 lb/yd³	26 lb/yd³		
	9	16 lb/yd³	23 lb/yd <sup>3</sup>	26 lb/yd³	28 lb/yd³		
	10	19 lb/yd³	26 lb/yd³	28 lb/yd³	30 lb/yd³ + 10M @ 30"		
	11	23 lb/yd³	26 lb/yd³	30 lb/yd³ + 10M @ 42"	30 lb/yd <sup>3</sup> + 10M @ 12"		
12	4	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd <sup>3</sup>		
	5	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³		
	6	9 lb/yd³	9 lb/yd³	9 lb/yd³	16 lb/yd³		
	7	9 lb/yd³	9 lb/yd³	18 lb/yd³	23 lb/yd³		
	8	9 lb/yd³	19 lb/yd³	25 lb/yd³	26 lb/yd³		
	9	17 lb/yd <sup>3</sup>	24 lb/yd <sup>3</sup>	26 lb/yd³	30 lb/yd³		
	10	21 lb/yd <sup>3</sup>	26 lb/yd <sup>3</sup>	30 lb/yd³ + 10M @ 48"	30 lb/yd <sup>3</sup> + 10M @ 18"		
	11	25 lb/yd³	28 lb/yd³	30 lb/yd³ + 10M @ 24"	30 lb/yd <sup>3</sup> + 15M @ 18"		
	12	26 lb/yd³	30 lb/yd³ + 10M @ 48"	30 lb/yd³ + 10M @ 12"	30 lb/yd <sup>3</sup> + 15M @ 12"		
14	4	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd <sup>3</sup>		
	5	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³		
	6	9 lb/yd³	9 lb/yd³	9 lb/yd³	17 lb/yd³		
	7	9 lb/yd³	9 lb/yd³	20 lb/yd³	24 lb/yd³		
	8	9 lb/yd³	21 lb/yd³	26 lb/yd³	26 lb/yd³		
9		18 lb/yd³	26 lb/yd³	27 lb/yd <sup>3</sup>	30 lb/yd³ + 10M @ 48"		
	10	23 lb/yd³	26 lb/yd³	30 lb/yd³ + 10M @ 42"	30 lb/yd <sup>3</sup> + 10M @ 12"		
	11	26 lb/yd³	30 lb/yd³ + 10M @ 48"	30 lb/yd <sup>3</sup> + 10M @ 12"	30 lb/yd <sup>3</sup> + 15M @ 12"		
	12	26 lb/yd³	30 lb/yd <sup>3</sup> + 10M @ 18"	30 lb/yd + 15M @ 12"	30 lb/yd + 13M @ 12"		
	13	30 lb/yd³	30 lb/yd <sup>3</sup> + 15M @ 18"	30 lb/yd + 13W @ 12"			
	14	30 lb/yd³ + 10M @ 36"	30 lb/yd <sup>3</sup> + 15M @ 12"	30 lb/yd + 20M @ 12"	-		
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#### TABLE 1B-H - LOGIX 8" BELOW-GRADE WALL WITH HELIX 5-25 REINF. Cont'd

Maximum	Maximum	Helix Dosage and Hybrid Vertical Rebar Requirement						
Height of	Unbalanced	Maximum	Maximum	Maximum	Maximum			
Basement	Backfill	<b>Equivalent Density</b>	<b>Equivalent Density</b>	<b>Equivalent Density</b>	<b>Equivalent Density</b>			
Wall, ft	Height, ft	30 pcf	45 pcf	60 pcf	75 pcf			
16	4	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³			
	5	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³			
	6	9 lb/yd³	9 lb/yd³	9 lb/yd³	18 lb/yd³			
	7	9 lb/yd³	16 lb/yd³	21 lb/yd³	26 lb/yd³			
	8	9 lb/yd³	22 lb/yd³	26 lb/yd³	27 lb/yd³			
	9	20 lb/yd³	26 lb/yd³	29 lb/yd³	30 lb/yd <sup>3</sup> + 10M @ 24"			
	10	25 lb/yd³	28 lb/yd³	30 lb/yd³ + 10M @ 24"	30 lb/yd <sup>3</sup> + 15M @ 18"			
	11	26 lb/yd³	30 lb/yd³ + 10M @ 30"	30 lb/yd <sup>3</sup> + 15M @ 18"	30 lb/yd³ + 20M @ 12"			
	12	29 lb/yd³	30 lb/yd <sup>3</sup> + 10M @ 12"	30 lb/yd³ + 15M @ 12"	-			
	13 30 lb/yd³ + 10M @		30 lb/yd3 + 15M @ 12"	30 lb/yd³ + 20M @ 12"	=			
	14	30 lb/yd3 + 10M @ 12"	30 lb/yd <sup>3</sup> + 20M @ 12"	=	=			
	15	30 lb/yd³ + 15M @ 18"	30 lb/yd³ + 20M @ 12"	-	-			
	16	30 lb/yd <sup>3</sup> + 15M @ 12"	-	-	-			

#### Notes:

- 1. Design and installation of Helix 5-25 Micro-Rebar reinforced concrete must be in accordance with Uniform Evaluation Service, ER-279. Designs given in above table are Helix Design Class B, and walls must conform to all restrictions of Section 4.3.5 of ER-279.
- 2. Conventional reinforcement (as required) to be placed on interior face of concrete wall. Effective depth of vertical rebar (exterior face of concrete to center of vertical rebar) = 6"
- 3. Table shall be read in conjunction with Fig 2B, and section "Notes for Below-grade Wall Tables."
- 4. Conventional rebar yield strength = 400 MPa, 28 day concrete compressive strength = 20.7 MPa (3000 psi).
- 5. Modulus of rupture of Helix reinforced concrete with 9 lb/yd³ Helix 5-25 = 7.5 v(3000 psi) = 410 psi = 2.83 MPa.
- 6. Walls must be laterally supported at top and bottom of wall before backfilling.
- 7. The listed Helix 5-25 dosage rate is adequate to replace the required horizontal 10M bars at 32 inches.
- 8. Tables do not consider seismic loads.
- 9. For more information contact your local Logix rep.



# LOGIX® INSULATED CONCRETE FORMS TABLE 1C-H - LOGIX 10" BELOW-GRADE WALL WITH HELIX 5-25 REINF.

Maximum	Maximum	Helix Dosage and Hybrid Vertical Rebar Requirement					
Height of	Unbalanced	Maximum Maximum		Maximum	Maximum		
Basement	Backfill	<b>Equivalent Density</b>	<b>Equivalent Density</b>	<b>Equivalent Density</b>	<b>Equivalent Density</b>		
Wall, ft	Height, ft	30 pcf	45 pcf	60 pcf	75 pcf		
14	4	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³		
	5	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³		
	6	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³		
	7	9 lb/yd³	9 lb/yd³	9 lb/yd³	16 lb/yd³		
	8	9 lb/yd³	9 lb/yd³	18 lb/yd³	22 lb/yd³		
	9	9 lb/yd³	18 lb/yd³	23 lb/yd³	29 lb/yd³		
	10	15 lb/yd³	22 lb/yd³	29 lb/yd³	29 lb/yd³		
	11	19 lb/yd³	27 lb/yd³	29 lb/yd³	30 lb/yd <sup>3</sup> + 10M @ 36"		
	12	22 lb/yd³	29 lb/yd³	30 lb/yd <sup>3</sup> + 10M @ 48"	30 lb/yd <sup>3</sup> + 10M @ 12"		
	13	26 lb/yd³	29 lb/yd³	30 lb/yd <sup>3</sup> + 10M @ 12"	30 lb/yd <sup>3</sup> + 15M @ 12"		
	14	29 lb/yd³	30 lb/yd <sup>3</sup> + 10M @ 42"	30 lb/yd <sup>3</sup> + 15M @ 18"	30 lb/yd <sup>3</sup> + 20M @ 12"		
16	4	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³		
	5	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³		
	6	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³		
	7	9 lb/yd³	9 lb/yd³	9 lb/yd³	17 lb/yd³		
	8	9 lb/yd³	9 lb/yd³	19 lb/yd³	23 lb/yd³		
	9	9 lb/yd³	19 lb/yd³	25 lb/yd³	29 lb/yd³		
	10	17 lb/yd³	24 lb/yd³	29 lb/yd³	30 lb/yd³		
	11	20 lb/yd³	29 lb/yd³	30 lb/yd³	30 lb/yd <sup>3</sup> + 10M @ 18"		
	12	25 lb/yd³	29 lb/yd³	30 lb/yd <sup>3</sup> + 10M @ 18"	30 lb/yd <sup>3</sup> + 15M @ 18"		
	13	29 lb/yd³	30 lb/yd <sup>3</sup> + 10M @ 48"	30 lb/yd <sup>3</sup> + 15M @ 18"	30 lb/yd <sup>3</sup> + 20M @ 12"		
	14	29 lb/yd³	30 lb/yd <sup>3</sup> + 10M @ 18"	30 lb/yd <sup>3</sup> + 15M @ 12"	30 lb/yd <sup>3</sup> + 20M @ 12"		
	15	30 lb/yd³	30 lb/yd <sup>3</sup> + 15M @ 18"	30 lb/yd <sup>3</sup> + 20M @ 12"	-		
	16	30 lb/yd <sup>3</sup> + 10M @ 48"	30 lb/yd <sup>3</sup> + 15M @ 12"	-	-		
18	4	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³		
	5	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³		
	6	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³		
	7	9 lb/yd³	9 lb/yd³	9 lb/yd³	18 lb/yd³		
	8	9 lb/yd³	15 lb/yd³	20 lb/yd³	24 lb/yd³		
	9	9 lb/yd³	20 lb/yd³	26 lb/yd³	29 lb/yd³		
	10	18 lb/yd³	26 lb/yd³	29 lb/yd³	30 lb/yd <sup>3</sup> + 10M @ 48"		
	11	22 lb/yd³	29 lb/yd³	30 lb/yd <sup>3</sup> + 10M @ 48"	30 lb/yd <sup>3</sup> + 10M @ 12"		
	12	27 lb/yd³	30 lb/yd³	30 lb/yd <sup>3</sup> + 10M @ 12"	30 lb/yd <sup>3</sup> + 15M @ 12"		
13 14		29 lb/yd³	30 lb/yd <sup>3</sup> + 10M @ 24"	30 lb/yd <sup>3</sup> + 15M @ 12"	30 lb/yd <sup>3</sup> + 20M @ 12"		
		29 lb/yd³	30 lb/yd³ + 10M @ 12"	30 lb/yd³ + 20M @ 12"	-		
	15	30 lb/yd³ + 10M @ 48"	30 lb/yd <sup>3</sup> + 15M @ 12"	30 lb/yd <sup>3</sup> + 20M @ 12"	-		
	16	30 lb/yd³ + 10M @ 18"	30 lb/yd³ + 20M @ 12"	-	-		
	17	30 lb/yd³ + 10M @ 12"	30 lb/yd³ + 20M @ 12"	-	-		
	18	30 lb/yd³ + 15M @ 12"	-	-	-		

NOTES:

See next page.



#### TABLE 1C-H - LOGIX 10" BELOW-GRADE WALL WITH HELIX 5-25 REINF. Cont'd

Maximum	Maximum	Helix Dosage and Hybrid Vertical Rebar Requirement					
Height of Basement Wall, ft	Unbalanced Backfill Height, ft	Maximum Equivalent Density 30 pcf	Maximum Equivalent Density 45 pcf	Maximum Equivalent Density 60 pcf	Maximum Equivalent Density 75 pcf		
20	4	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³		
	5	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³		
	6	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³		
	7	9 lb/yd³	9 lb/yd³	9 lb/yd³	18 lb/yd³		
	8	9 lb/yd³	16 lb/yd³	21 lb/yd³	25 lb/yd³		
	9	9 lb/yd³	21 lb/yd³	28 lb/yd³	29 lb/yd³		
	10	18 lb/yd³	27 lb/yd³	29 lb/yd³	30 lb/yd <sup>3</sup> + 10M @ 42"		
	11	23 lb/yd³	29 lb/yd³	30 lb/yd³ + 10M @ 36"	30 lb/yd <sup>3</sup> + 15M @ 18"		
	12	28 lb/yd³	30 lb/yd <sup>3</sup> + 10M @ 48"	30 lb/yd³ + 10M @ 12"	30 lb/yd <sup>3</sup> + 15M @ 12"		
	13	29 lb/yd³	30 lb/yd³ + 10M @ 18"	30 lb/yd³ + 15M @ 12"	30 lb/yd <sup>3</sup> + 20M @ 12"		
	14	30 lb/yd³ + 10M @ 48"	30 lb/yd³ + 15M @ 18"	30 lb/yd³ + 20M @ 12"	-		
	15	30 lb/yd <sup>3</sup> + 10M @ 24"	30 lb/yd <sup>3</sup> + 15M @ 12"	-	-		
	16	30 lb/yd <sup>3</sup> + 10M @ 12"	30 lb/yd <sup>3</sup> + 20M @ 12"	-	-		
	17	30 lb/yd <sup>3</sup> + 15M @ 12"	-	-	-		
	18	30 lb/yd <sup>3</sup> + 15M @ 12"	-	-	-		
	19	30 lb/yd <sup>3</sup> + 20M @ 12"	-	-	-		
	20	30 lb/yd <sup>3</sup> + 20M @ 12"	-	-	-		

- 1. Design and installation of Helix 5-25 Micro-Rebar reinforced concrete must be in accordance with Uniform Evaluation Service, ER-279. Designs given in above table are Helix Design Class B, and walls must conform to all restrictions of Section 4.3.5 of ER-279.
- 2. Conventional reinforcement (as required) to be placed on interior face of concrete wall. Effective depth of vertical rebar (exterior face of concrete
- 3. Table shall be read in conjunction with Fig 2C, and section "Notes for Below-grade Wall Tables."
- 4. Conventional rebar yield strength = 400 MPa, 28 day concrete compressive strength = 20.7 MPa (3000 psi).
- 5. Modulus of rupture of Helix reinforced concrete with 9 lb/yd³ Helix 5-25 = 7.5 V(3000 psi) = 410 psi = 2.83 MPa.
- 6. Walls must be laterally supported at top and bottom of wall before backfilling.
- 7. The listed Helix 5-25 dosage rate is adequate to replace the required horizontal 10M bars at 32 inches.
- 8. Tables do not consider seismic loads.
- 9. For more information contact your local Logix rep.



# **LOGIX® INSULATED CONCRETE FORMS** TABLE 1D-H - LOGIX 12" BELOW-GRADE WALL WITH HELIX 5-25 REINF.

Maximum	Maximum	Helix Dosage and Hybrid Vertical Rebar Requirement					
Height of	Unbalanced	Maximum	Maximum	Maximum	Maximum		
Basement	Backfill	<b>Equivalent Density</b>	<b>Equivalent Density</b>	<b>Equivalent Density</b>	<b>Equivalent Density</b>		
Wall, ft	Height, ft	30 pcf	45 pcf	60 pcf	75 pcf		
14	4	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³		
	5	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³		
	6	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³		
	7	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³		
	8	9 lb/yd³	9 lb/yd³	9 lb/yd³	16 lb/yd³		
	9	9 lb/yd³	9 lb/yd³	16 lb/yd³	20 lb/yd³		
	10	9 lb/yd³	16 lb/yd³	21 lb/yd³	26 lb/yd³		
	11	9 lb/yd³	19 lb/yd³	25 lb/yd³	30 lb/yd <sup>3</sup> + 10M @ 48"		
	12	16 lb/yd³	23 lb/yd³	30 lb/yd³ + 10M @ 48"	30 lb/yd³ + 10M @ 48"		
	13	18 lb/yd³	27 lb/yd³	30 lb/yd³ + 10M @ 48"	30 lb/yd³ + 10M @ 36"		
	14	21 lb/yd³	30 lb/yd³ + 10M @ 48"	30 lb/yd³ + 10M @ 48"	30 lb/yd³ + 10M @ 12"		
16	4	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³		
	5	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³		
	6	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³		
	7	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³		
	8	9 lb/yd³	9 lb/yd³	9 lb/yd³	17 lb/yd³		
	9	9 lb/yd³	9 lb/yd³	18 lb/yd³	22 lb/yd³		
	10	9 lb/yd³	17 lb/yd³	22 lb/yd³	28 lb/yd³		
	11	9 lb/yd³	21 lb/yd³	28 lb/yd³	30 lb/yd3 + 10M @ 48"		
	12	17 lb/yd³	26 lb/yd³	30 lb/yd³ + 10M @ 48"	30 lb/yd3 + 10M @ 48"		
	13	21 lb/yd³	30 lb/yd <sup>3</sup> + 10M @ 48"	30 lb/yd <sup>3</sup> + 10M @ 48"	30 lb/yd3 + 10M @ 12"		
	14	24 lb/yd³	30 lb/yd³ + 10M @ 48"	30 lb/yd³ + 10M @ 24"	30 lb/yd3 + 15M @ 18"		
	15	27 lb/yd³	30 lb/yd³ + 10M @ 48"	30 lb/yd³ + 10M @ 12"	30 lb/yd³ + 15M @ 12"		
	16	30 lb/yd³ + 10M @ 48"	30 lb/yd³ + 10M @ 24"	30 lb/yd³ + 15M @ 12"	30 lb/yd <sup>3</sup> + 20M @ 12"		
18	4	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³		
	5	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³		
	6	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³		
	7	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³		
	8	9 lb/yd³	9 lb/yd³	9 lb/yd³	17 lb/yd³		
	9	9 lb/yd³	9 lb/yd³	19 lb/yd³	23 lb/yd³		
	10	9 lb/yd³	18 lb/yd³	24 lb/yd³	30 lb/yd³		
	11	16 lb/yd³	23 lb/yd³	30 lb/yd³	30 lb/yd³ + 10M @ 48"		
	12	19 lb/yd³	28 lb/yd³	30 lb/yd <sup>3</sup> + 10M @ 48"	30 lb/yd <sup>3</sup> + 10M @ 30"		
	13	22 lb/yd³	30 lb/yd³ + 10M @ 48"	30 lb/yd³ + 10M @ 42"	30 lb/yd <sup>3</sup> + 15M @ 18"		
	14	26 lb/yd³	30 lb/yd³ + 10M @ 48"	30 lb/yd <sup>3</sup> + 10M @ 12"	30 lb/yd <sup>3</sup> + 15M @ 12"		
	15	30 lb/yd³ + 10M @ 48"	30 lb/yd³ + 10M @ 30"	30 lb/yd <sup>3</sup> + 15M @ 12"	30 lb/yd <sup>3</sup> + 20M @ 12"		
	16	30 lb/yd³ + 10M @ 48"	30 lb/yd³ + 10M @ 12"	30 lb/yd³ + 20M @ 12"	-		
	17	30 lb/yd³ + 10M @ 48"	30 lb/yd <sup>3</sup> + 15M @ 18"	30 lb/yd³ + 20M @ 12"	-		
	18	30 lb/yd³ + 10M @ 48"	30 lb/yd <sup>3</sup> + 15M @ 12"	-	-		

NOTES: See next page.



#### TABLE 1D-H - LOGIX 12" BELOW-GRADE WALL WITH HELIX 5-25 REINF. Cont'd

Maximum	Maximum	Helix Dosage and Hybrid Vertical Rebar Requirement						
Height of	Unbalanced	Maximum	Maximum	Maximum	Maximum			
Basement	Backfill	<b>Equivalent Density</b>	<b>Equivalent Density</b>	<b>Equivalent Density</b>	<b>Equivalent Density</b>			
Wall, ft	Height, ft	30 pcf	45 pcf	60 pcf	75 pcf			
20	4	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³			
	5	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³			
	6	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³			
	7	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³			
	8	9 lb/yd³	9 lb/yd³	9 lb/yd³	18 lb/yd³			
	9	9 lb/yd³	9 lb/yd³	19 lb/yd³	24 lb/yd³			
	10	9 lb/yd³	19 lb/yd³	25 lb/yd³	30 lb/yd³ + 10M @ 48"			
	11	16 lb/yd³	24 lb/yd³	30 lb/yd³ + 10M @ 48"	30 lb/yd³ + 10M @ 48"			
	12	20 lb/yd³	30 lb/yd³	30 lb/yd³ + 10M @ 48"	30 lb/yd³ + 10M @ 18"			
	13	24 lb/yd³	30 lb/yd³ + 10M @ 48"	30 lb/yd³ + 10M @ 24"	30 lb/yd³ + 15M @ 12"			
	14	28 lb/yd³	30 lb/yd³ + 10M @ 48"	30 lb/yd³ + 15M @ 18"	30 lb/yd³ + 20M @ 12"			
	15	30 lb/yd <sup>3</sup> + 10M @ 48"	30 lb/yd <sup>3</sup> + 10M @ 18"	30 lb/yd <sup>3</sup> + 15M @ 12"	-			
	16	30 lb/yd <sup>3</sup> + 10M @ 48"	30 lb/yd <sup>3</sup> + 15M @ 18"	30 lb/yd <sup>3</sup> + 20M @ 12"	-			
	<b>17</b> 30 lb/yd³ + 10M @ 48"		30 lb/yd <sup>3</sup> + 15M @ 12"	-	-			
	18	<b>18</b> 30 lb/yd³ + 10M @ 18" 30 lb/yd³		-	-			
	19	30 lb/yd³ + 10M @ 12"	30 lb/yd³ + 20M @ 12"	-	-			
	20	30 lb/yd³ + 15M @ 12"	-	-	=			

- 1. Design and installation of Helix 5-25 Micro-Rebar reinforced concrete must be in accordance with Uniform Evaluation Service, ER-279. Designs given in above table are Helix Design Class B, and walls must conform to all restrictions of Section 4.3.5 of ER-279.
- 2. Conventional reinforcement (as required) to be placed on interior face of concrete wall. Effective depth of vertical rebar (exterior face of concrete to center of vertical rebar) = 10"
- 3. Table shall be read in conjunction with Fig 2D, and section "Notes for Below-grade Wall Tables."
- 4. Conventional rebar yield strength = 400 MPa, 28 day concrete compressive strength = 20.7 MPa (3000 psi).
- 5. Modulus of rupture of Helix reinforced concrete with 9 lb/yd $^3$  Helix 5-25 = 7.5  $\nu$ (3000 psi) = 410 psi = 2.83 MPa.
- 6. Walls must be laterally supported at top and bottom of wall before backfilling.
- 7. The listed Helix 5-25 dosage rate is adequate to replace the required horizontal 10M bars at 32 inches.
- 8. Tables do not consider seismic loads.
- 9. For more information contact your local Logix rep.



# LOGIX® INSULATED CONCRETE FORMS ABOVE-GRADE WALL REINFORCEMENT

LOGIX above-grade tables cover three different construction types:

- One storey LOGIX supporting wood roof frame (Fig. 3A)
- One storey LOGIX supporting 2nd storey wood frame plus wood roof frame (Fig. 3B)
- Two storey LOGIX supporting wood roof frame (Fig. 3C)

For two story buildings, the height of the second story wall is equal to the height of the first story provided the height of the first storey wall is not more than 12 feet high.

For first story walls greater than 12 feet high, the second story wall height is a maximum of 12 feet.

With the exception of 4" LOGIX, the second story concrete wall thickness is one size less than the concrete core thickness used for the first storey wall.

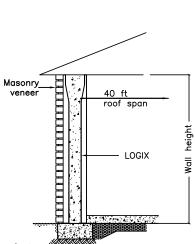
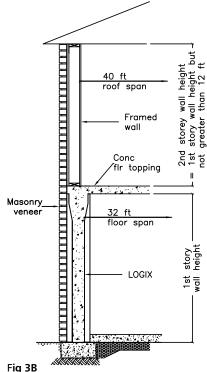
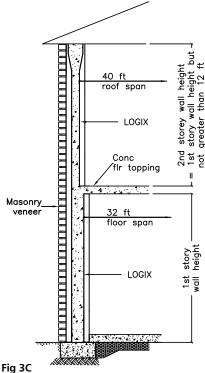


Fig 3A Assumed typical flooring, wall & roof section for Tables 3A and 3B, Logix Supporting Roof Only.



Assumed typical flooring, wall & roof section for Tables 3A and 3B, Logix Supporting 2nd Story Wood Frame & Roof Structure.



Assumed typical flooring, wall & roof section for Tables 3A and 3B, Logix Supporting 2nd Story Logix & Roof Structure.



#### **NOTES FOR ABOVE-GRADE WALL TABLES**

The above-grade tables shall be used in conjunction with the notes listed below, the building limitations noted in the "Reinforcement Tables", "Helix TSMR Tables - Alternative to Rebar Reinforcement Tables" section, and Figures 3A to 3B, which form the basis of this table.

- 1. 28 day concrete compressive strength = 20 MPa. Steel yield strength = 400 MPa.
- 2. Vertical rebar to be placed in middle of wall. Minimum horizontal rebar shall be:
  - 4" & 6.25" LOGIX = 10M @ 32" o/c
  - 8", 10" & 12" LOGIX = 10M @ 16" o/c.

Provide additional mat of rebar for 12" LOGIX

- Horizontal rebar = 10M @ 16" o/c
- Vertical rebar = to match appropriate vertical bar spacing in Tables 2.1-H to 2.5-H.
- 3. Provide at least one 10M bar to be placed at the bottom course and top course.
- 4. Max roof clear span = 40 ft. Max floor clear span = 20 ft.
- 5. Deflection criteria = L/240
- 6. Assumed eccentricity = 1".
- 7. Provide two 15M bars (One 15M bar for 4" concrete core thickness) to be placed around all openings (along the vertical sides and bottom of opening), and extend a minimum of 2 ft beyond
- 8. The walls must be supported at the top and bottom of the wall.
- 9. Where spaces have been left blank, the corresponding bar size is presumed to be less economical and/or practical than that shown. Consult a local licensed engineer to determine proper design.
- 10. Carefully consider floor/wall connection details for lateral loads, especially with higher backfills, walkout basements, and active seismic areas.
- 11. Consult a local licensed engineer for design of walls that fall outside the scope of the above table.
- 12. 1 psf = 0.0479 kPa.
- 13. Governing load case is predominantly wind loading. Factored wind loading applicable by Provinces:

British Columbia: 35 psf

Alberta: 40 psf Saskatchewan: 30 psf Manitoba: 30 psf Ontario: 25 psf Quebec: 45 psf

New Brunswick: 35 psf Nova Scotia: 35 psf New Foundland: 55 psf Prince Edward Island: 35 psf



# LOGIX® INSULATED CONCRETE FORMS TABLE 2.1-H - 4" LOGIX ABOVE-GRADE WALL WITH HELIX 5-25 REINF.

### (FOR RESIDENTIAL CONSTRUCTION)

<b>Ground Flo</b>	Ground Floor LOGIX Supporting Roof Only							
Wall	Factored Wind Load, psf  t 25 30 35 40 45 55							
Height, ft								
8	12 lb/yd³	12 lb/yd³	12 lb/yd³	12 lb/yd³	13.5 lb/yd³	16 lb/yd³		
9	12 lb/yd³	12 lb/yd³	13.5 lb/yd³	13.5 lb/yd³	16 lb/yd³	21 lb/yd³		
10	12 lb/yd³	13.5 lb/yd³	16 lb/yd³	16 lb/yd³	21 lb/yd³	30 lb/yd³		
12	15 lb/yd3 + 10M @ 18"	15 lb/yd3 + 10M @ 18"	15 lb/yd3 + 10M @ 18"	30 lb/yd3 + 10M @ 18"	30 lb/yd3 + 10M @ 18"	30 lb/yd3 + 15M @ 18"		
14	30 lb/yd3 + 10M @ 18"	30 lb/yd3 + 10M @ 18"	30 lb/yd3 + 15M @ 18"	30 lb/yd3 + 15M @ 18"	30 lb/yd3 + 15M @ 12"	30 lb/yd3 + 15M @ 12"		
16	30 lb/yd3 + 15M @ 18"	30 lb/yd3 + 15M @ 18"	30 lb/yd3 + 15M @ 12"	22.5 lb/yd3 + 15M @ 8"	-	-		
18	22.5 lb/yd³ + 15M @ 8"	22.5 lb/yd³ + 15M @ 8"	-	-	-	-		
20	-	-	-	-	-	-		

Ground Flo	Ground Floor LOGIX Supporting 2nd Storey Wood Frame & Roof Structure							
Wall	Factored Wind Load, psf							
Height, ft	25	30	35	40	45	55		
8	13.5 lb/yd³	13.5 lb/yd³	13.5 lb/yd³	13.5 lb/yd³	13.5 lb/yd³	16 lb/yd³		
9	16 lb/yd³	16 lb/yd³	16 lb/yd³	16 lb/yd³	16 lb/yd³	21 lb/yd³		
10	16 lb/yd³	16 lb/yd³	16 lb/yd³	21 lb/yd³	21 lb/yd³	30 lb/yd³		
12	30 lb/yd3 + 10M @ 18"	30 lb/yd3 + 10M @ 18"	30 lb/yd3 + 10M @ 18"	30 lb/yd3 + 10M @ 18"	30 lb/yd3 + 15M @ 18"	30 lb/yd3 + 15M @ 12"		
14	30 lb/yd3 + 15M @ 12"	30 lb/yd3 + 15M @ 12"	30 lb/yd3 + 15M @ 12"	30 lb/yd3 + 15M @ 12"	22.5 lb/yd3 + 15M @ 8"			
16	•	-			-	-		
18	•	•	•	•	•			
20		-	-	-	-	-		

Wall	Factored Wind Load, psf							
Height, ft	25	30	35	40	45	55		
8	21 lb/yd³	21 lb/yd³	21 lb/yd³	21 lb/yd³	21 lb/yd³	21 lb/yd³		
9	21 lb/yd³	21 lb/yd³	21 lb/yd³	21 lb/yd³	21 lb/yd³	30 lb/yd³		
10	21 lb/yd³	21 lb/yd³	21 lb/yd³	30 lb/yd³	30 lb/yd³	30 lb/yd³		
12	30 lb/yd³ + 15M @ 18"	30 lb/yd3 + 15M @ 18"	30 lb/yd3 + 15M @ 18"	30 lb/yd3 + 15M @ 18"	30 lb/yd3 + 15M @ 12"	30 lb/yd3 + 15M @ 12"		
14	•	•	•	•	•	٠		
16	•	•	•	•	•	٠		
18	-	-	-	-	-	-		
20	-	-	-	-	-	-		

- 1. Design and installation of Helix 5-25 Micro-Rebar reinforced concrete must be in accordance with Uniform Evaluation Service, ER-279.
- 2. Designs given in the unshaded rows of the above table are Helix Design Class B, and walls must conform to all restrictions of Section 4.3.6 of ER-279.
- 3. Designs given in the shaded rows of the above table are Helix Design Class C, and walls must conform to all restrictions of Section 4.3.5 or Section 4.3.6 of ER-279 except for the minimum wall thickness requirement. In addition, Helix Design Class C must meet the requirements of Section 5.6 of ER-279.
- 4. Designs given in the shaded rows are not allowed in Seismic Design Categories C, D, E or F.
- 5. Table shall be read in conjunction with Fig 3A, Fig 3B, Fig 3C, and section "NOTES FOR ABOVE-GRADE WALL TABLES."
- 6. Table shall be used for residential construction only. Additional tables provide designs for commercial construction.
- 7. Dowels shall be used at connection of wall to footing; the use of a keyway with this table is prohibited.
- 8. Conventional reinforcement (as required) to be placed at mid-depth of the concrete wall.
- 9. Conventional rebar yield strength = 400 MPa, 28 day concrete compressive strength = 20.7 MPa (3000 psi) for Helix Design Class B and 27.6 MPa (4000 psi) for Helix Design Class B.
- 10. Walls must be laterally supported at top and bottom of wall.
- 11. The listed Helix 5-25 dosage rate is adequate to replace the required horizontal 10M bars at 32 inches.
- 12. Where spaces have been left blank, the Helix design is outside the scope of this table. Contact Helix Steel to determine proper design.
- 13. For more information contact your local Logix rep.



# LOGIX® INSULATED CONCRETE FORMS TABLE 2.2-H - 4" LOGIX ABOVE-GRADE WALL WITH HELIX 5-25 REINF.

## (FOR COMMERCIAL CONSTRUCTION)

<b>Ground Flo</b>	oor LOGIX Supporting	Roof Only				
Wall			Factored Wi	nd Load, psf		
Height, ft	25	30	35	40	45	55
8	15 lb/yd3 + 10M @ 18"	15 lb/yd3 + 10M @ 18"	15 lb/yd3 + 10M @ 18"	15 lb/yd3 + 10M @ 18"	15 lb/yd3 + 10M @ 18"	15 lb/yd <sup>3</sup> + 10M @ 18"
9	15 lb/yd3 + 10M @ 18"	15 lb/yd3 + 10M @ 18"	15 lb/yd3 + 10M @ 18"	15 lb/yd3 + 10M @ 18"	15 lb/yd3 + 10M @ 18"	15 lb/yd3 + 10M @ 18"
10	15 lb/yd3 + 10M @ 18"	15 lb/yd3 + 10M @ 18"	15 lb/yd3 + 10M @ 18"	15 lb/yd³ + 10M @ 18"	15 lb/yd3 + 10M @ 18"	30 lb/yd <sup>3</sup> + 10M @ 18"
12	15 lb/yd3 + 10M @ 18"	15 lb/yd3 + 10M @ 18"	15 lb/yd3 + 10M @ 18"	30 lb/yd3 + 10M @ 18"	30 lb/yd3 + 10M @ 18"	30 lb/yd <sup>3</sup> + 15M @ 18"
14	30 lb/yd3 + 10M @ 18"	30 lb/yd3 + 10M @ 18"	30 lb/yd3 + 15M @ 18"	30 lb/yd3 + 15M @ 18"	30 lb/yd3 + 15M @ 12"	30 lb/yd3 + 15M @ 12"
16	30 lb/yd3 + 15M @ 18"	30 lb/yd3 + 15M @ 18"	30 lb/yd3 + 15M @ 12"	22.5 lb/yd3 + 15M @ 8"	-	-
18	22.5 lb/yd3 + 15M @ 8"	22.5 lb/yd3 + 15M @ 8"	-	-		-
20	-	-	-	-	-	-

<b>Ground Flo</b>	oor LOGIX Supporting	2nd Storey Wood Fra	ame & Roof Structure	!		
Wall			Factored Wi	nd Load, psf		
Height, ft	25	30	35	40	45	55
8	15 lb/yd3 + 10M @ 18"	15 lb/yd <sup>3</sup> + 10M @ 18"				
9	15 lb/yd3 + 10M @ 18"	15 lb/yd <sup>3</sup> + 10M @ 18"				
10	15 lb/yd3 + 10M @ 18"	30 lb/yd <sup>3</sup> + 10M @ 18"				
12	30 lb/yd3 + 10M @ 18"	30 lb/yd3 + 15M @ 18"	30 lb/yd <sup>3</sup> + 15M @ 12"			
14	30 lb/yd3 + 15M @ 12"	30 lb/yd3 + 15M @ 12"	30 lb/yd³ + 15M @ 12"	30 lb/yd³ + 15M @ 12"	22.5 lb/yd3 + 15M @ 8"	-
16	•	-	•	•	•	-
18	-	-	-	-	-	-
20	-	-	-	-	-	-

Wall	Factored Wind Load, psf						
Height, ft	25	30	35	40	45	55	
8	15 lb/yd3 + 10M @ 18"	15 lb/yd3 + 10M @ 18"	15 lb/yd3 + 10M @ 18"	15 lb/yd3 + 10M @ 18"	15 lb/yd3 + 10M @ 18"	15 lb/yd3 + 10M @ 18"	
9	15 lb/yd3 + 10M @ 18"	15 lb/yd3 + 10M @ 18"	15 lb/yd3 + 10M @ 18"	15 lb/yd3 + 10M @ 18"	15 lb/yd3 + 10M @ 18"	30 lb/yd3 + 10M @ 18"	
10	15 lb/yd3 + 10M @ 18"	15 lb/yd3 + 10M @ 18"	15 lb/yd3 + 10M @ 18"	30 lb/yd3 + 10M @ 18"	30 lb/yd3 + 10M @ 18"	30 lb/yd3 + 10M @ 18"	
12	30 lb/yd³ + 15M @ 18"	30 lb/yd3 + 15M @ 18"	30 lb/yd3 + 15M @ 18"	30 lb/yd³ + 15M @ 18"	30 lb/yd3 + 15M @ 12"	30 lb/yd3 + 15M @ 12"	
14	-		-		-	•	
16	-	•	-	•	•	•	
18	-	-	-	-	-	-	
20	_	-	-	-	_	-	

- 1. Design and installation of Helix 5-25 Micro-Rebar reinforced concrete must be in accordance with Uniform Evaluation Service, ER-279.
- 2. Designs given in the above table are Helix Design Class C, and walls must conform to all restrictions of Section 4.3.5 of ER-279 except for the minimum wall thickness requirement. In addition, Helix Design Class C must meet the requirements of Section 5.6 of ER-279.
- 3. Helix designs are not allowed in Seismic Design Categories C, D, E or F.
- 4. Table shall be read in conjunction with Fig 3A, Fig 3B, Fig 3C, and section "NOTES FOR ABOVE-GRADE WALL TABLES."
- 5. Conventional reinforcement (as required) to be placed at mid-depth of the concrete wall.
- 6. Conventional rebar yield strength = 400 MPa, 28 day concrete compressive strength = 27.6 MPa (4000 psi) for Helix Design Class C.
- 7. Walls must be laterally supported at top and bottom of wall.
- 8. The listed Helix 5-25 dosage rate is adequate to replace the required horizontal 10M bars at 32 inches.
- 9. Where spaces have been left blank, the Helix design is outside the scope of this table. Contact Helix Steel to determine proper design.
- 10. For more information contact your local Logix rep.



#### TABLE 2.3-H - 6.25" LOGIX ABOVE-GRADE WALL WITH HELIX 5-25 REINF.

### (FOR RESIDENTIAL CONSTRUCTION)

Wall	Factored Wind Load, psf							
Height, ft	25	30	35	40	45	55		
8	9 lb/yd³	9 lb/yd³						
9	9 lb/yd³	9 lb/yd³						
10	9 lb/yd³	9 lb/yd³						
12	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³	11 lb/yd³	14 lb/yd³		
14	15 lb/yd3 + 10M @ 14"	15 lb/yd3 + 15M @ 24"						
16	15 lb/yd3 + 10M @ 14"	15 lb/yd3 + 10M @ 14"	15 lb/yd3 + 10M @ 14"	15 lb/yd3 + 15M @ 24"	15 lb/yd3 + 15M @ 24"	30 lb/yd3 + 15M @ 24"		
18	15 lb/yd3 + 15M @ 24"	30 lb/yd3 + 15M @ 24"	22.5 lb/yd3 + 15M @ 12					
20	22.5 lb/yd3 + 15M @ 12"	22.5 lb/yd3 + 15M @ 12						

Wall	Factored Wind Load, psf							
Height, ft	25	30	35	40	45	55		
8	9 lb/yd³	9 lb/yd³						
9	9 lb/yd³	9 lb/yd³						
10	9 lb/yd³	9 lb/yd³						
12	11 lb/yd³	14 lb/yd³						
14	15 lb/yd3 + 10M @ 14"	15 lb/yd³ + 15M @ 24"	15 lb/yd3 + 15M @ 24"					
16	15 lb/yd3 + 15M @ 24"	30 lb/yd3 + 15M @ 24"						
18	22.5 lb/yd3 + 15M @ 12"	22.5 lb/yd3 + 15M @ 12						
20	22.5 lb/yd3 + 15M @ 8"	22.5 lb/yd3 + 15M @ 8"						

Wall	Factored Wind Load, psf							
Height, ft	25	30	35	40	45	55		
8	9 lb/yd³	9 lb/yd³						
9	11 lb/yd³	11 lb/yd³						
10	11 lb/yd³	11 lb/yd³						
12	14 lb/yd³	14 lb/yd³						
14	15 lb/yd3 + 15M @ 24"	15 lb/yd3 + 15M @ 24"	15 lb/yd3 + 15M @ 24"	15 lb/yd³ + 15M @ 24"	15 lb/yd³ + 15M @ 24"	15 lb/yd3 + 15M @ 24"		
16	22.5 lb/yd3 + 15M @ 12"	22.5 lb/yd3 + 15M @ 12						
18	22.5 lb/yd3 + 15M @ 8"	22.5 lb/yd3 + 15M @ 8'						
20	-	-	-	-	-	-		

#### Notes:

- 1. Design and installation of Helix 5-25 Micro-Rebar reinforced concrete must be in accordance with Uniform Evaluation Service, ER-279.
- 2. Designs given in the unshaded rows of the above table are Helix Design Class B, and walls must conform to all restrictions of Section 4.3.5 or Section 4.3.6 of ER-279.
- 3. Designs given in the shaded rows of the above table are Helix Design Class C, and walls must conform to all restrictions of Section 4.3.5 or Section 4.3.6 of ER-279 except for the minimum wall thickness requirement. In addition, Helix Design Class C must meet the requirements of Section 5.6 of ER-279.
- 4. Designs given in the shaded rows are not allowed in Seismic Design Categories C, D, E or F.
- 5. Table shall be read in conjunction with Fig 3A, Fig 3B, Fig 3C, and section "NOTES FOR ABOVE-GRADE WALL TABLES."
- 6. Conventional reinforcement (as required) to be placed at mid-depth of the concrete wall.
- 7. Conventional rebar yield strength = 400 MPa, 28 day concrete compressive strength = 20.7 MPa (3000 psi) for Helix Design Class B and 27.6 MPa (4000 psi) for Helix Design Class C.
- 8. Walls must be laterally supported at top and bottom of wall.
- $9. \ \ The \ listed \ Helix 5-25 \ dosage \ rate \ is \ adequate \ to \ replace \ the \ required \ horizontal \ 10M \ bars \ at \ 32 \ inches.$
- 10. Where spaces have been left blank, the Helix design is outside the scope of this table. Contact Helix Steel to determine proper design.
- $11. \ \, \text{For more information contact your local Logix rep.}$



# LOGIX® INSULATED CONCRETE FORMS TABLE 2.4-H - 8" LOGIX ABOVE-GRADE WALL WITH HELIX 5-25 REINF.

## (FOR RESIDENTIAL CONSTRUCTION)

<b>Ground Flo</b>	oor LOGIX Supporting	Roof Only							
Wall	Factored Wind Load, psf								
Height, ft	25	30	35	40	45	55			
8	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³			
9	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³			
10	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³			
12	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³			
14	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³	12 lb/yd³			
16	12 lb/yd³	12 lb/yd³	12 lb/yd³	12 lb/yd³	12 lb/yd³	16 lb/yd³			
18	15 lb/yd³ + 15M @ 22"	15 lb/yd³ + 15M @ 22"	15 lb/yd³ + 15M @ 22"	15 lb/yd³ + 15M @ 22"	15 lb/yd³ + 15M @ 22"	15 lb/yd³ + 15M @ 22"			
20	15 lb/yd3 + 15M @ 18"	15 lb/yd3 + 15M @ 18"	15 lb/yd3 + 15M @ 18"	15 lb/yd3 + 15M @ 18"	15 lb/yd3 + 15M @ 18"	15 lb/yd3 + 15M @ 18"			

Wall	Factored Wind Load, psf							
Height, ft	25	30	35	40	45	55		
8	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³		
9	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³		
10	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³		
12	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³		
14	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³	12 lb/yd³		
16	16 lb/yd³	16 lb/yd³	16 lb/yd³	16 lb/yd³	16 lb/yd³	16 lb/yd³		
18	15 lb/yd³ + 15M @ 18"	15 lb/yd3 + 15M @ 18"	15 lb/yd3 + 15M @ 18"	15 lb/yd3 + 15M @ 18"	15 lb/yd3 + 15M @ 18"	15 lb/yd3 + 15M @ 18"		
20	30 lb/yd3 + 15M @ 18"	30 lb/yd3 + 15M @ 18"	30 lb/yd3 + 15M @ 18"	30 lb/yd3 + 15M @ 18"	30 lb/yd3 + 15M @ 18"	30 lb/yd3 + 15M @ 18"		

Wall	Factored Wind Load, psf								
Height, ft	25	30	35	40	45	55			
8	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³			
9	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³			
10	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³			
12	12 lb/yd³	12 lb/yd³	12 lb/yd³	12 lb/yd³	12 lb/yd³	12 lb/yd³			
14	16 lb/yd³	16 lb/yd³	16 lb/yd³	16 lb/yd³	16 lb/yd³	16 lb/yd³			
16	21 lb/yd³	21 lb/yd³	21 lb/yd³	21 lb/yd³	21 lb/yd³	21 lb/yd³			
18	30 lb/yd³ + 15M @ 18"	30 lb/yd3 + 15M @ 18"	30 lb/yd3 + 15M @ 18"	30 lb/yd3 + 15M @ 18"	30 lb/yd³ + 15M @ 18"	30 lb/yd3 + 15M @ 18"			
20	30 lb/yd <sup>3</sup> + 15M @ 10"	30 lb/yd3 + 15M @ 10"							

#### Notes:

- 1. Design and installation of Helix 5-25 Micro-Rebar reinforced concrete must be in accordance with Uniform Evaluation Service, ER-279.
- 2. Designs given in the unshaded rows of the above table are Helix Design Class B, and walls must conform to all restrictions of Section 4.3.5 or Section 4.3.6 of ER-279.
- 3. Designs given in the shaded rows of the above table are Helix Design Class C, and walls must conform to all restrictions of Section 4.3.5 or Section 4.3.6 of ER-279 except for the minimum wall thickness requirement. In addition, Helix Design Class C must meet the requirements of Section 5.6 of ER-279.
- 4. Designs given in the shaded rows are not allowed in Seismic Design Categories C, D, E or F.
- 5. Table shall be read in conjunction with Fig 3A, Fig 3B, Fig 3C, and section "NOTES FOR ABOVE-GRADE WALL TABLES."
- 6. Conventional reinforcement (as required) to be placed at mid-depth of the concrete wall.
- 7. Conventional rebar yield strength = 400 MPa, 28 day concrete compressive strength = 20.7 MPa (3000 psi) for Helix Design Class B and 27.6 MPa (4000 psi) for Helix Design Class C.
- 8. Walls must be laterally supported at top and bottom of wall.
- 9. The listed Helix 5-25 dosage rate is adequate to replace the required horizontal 10M bars at 16 inches.
- 10. For more information contact your local Logix rep.



#### TABLE 2.5-H - 10" LOGIX ABOVE-GRADE WALL WITH HELIX 5-25 REINF.

## (FOR RESIDENTIAL CONSTRUCTION)

Wall		Factored Wind Load, psf								
Height, ft	25	30	35	40	45	55				
8	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³				
9	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³				
10	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³				
12	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³				
14	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³				
16	10 lb/yd³	10 lb/yd³	10 lb/yd³	10 lb/yd³	10 lb/yd³	10 lb/yd³				
18	13.5 lb/yd³	13.5 lb/yd³	13.5 lb/yd³	13.5 lb/yd³	13.5 lb/yd³	13.5 lb/yd <sup>3</sup>				
20	17 lb/yd³	17 lb/yd³	17 lb/yd³	17 lb/yd³	17 lb/yd³	17 lb/yd³				

Wall	Factored Wind Load, psf								
Height, ft	25	30	35	40	45	55			
8	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³			
9	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³			
10	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³			
12	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³			
14	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³			
16	10 lb/yd³	10 lb/yd³	10 lb/yd³	10 lb/yd³	10 lb/yd³	10 lb/yd³			
18	13.5 lb/yd³	13.5 lb/yd³	13.5 lb/yd³	13.5 lb/yd³	13.5 lb/yd³	13.5 lb/yd <sup>3</sup>			
20	17 lb/yd³	17 lb/yd³	17 lb/yd³	17 lb/yd³	17 lb/yd³	17 lb/yd³			

Wall	Factored Wind Load, psf					
Height, ft	25	30	35	40	45	55
8	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³
9	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³
10	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³
12	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³	9 lb/yd³
14	13.5 lb/yd³	13.5 lb/yd³	13.5 lb/yd³	13.5 lb/yd³	13.5 lb/yd³	13.5 lb/yd <sup>3</sup>
16	13.5 lb/yd <sup>3</sup>	13.5 lb/yd³				
18	17 lb/yd³	17 lb/yd³	17 lb/yd³	17 lb/yd³	17 lb/yd³	17 lb/yd³
20	25 lb/yd³	25 lb/yd³	25 lb/yd³	25 lb/yd³	25 lb/yd³	25 lb/yd³

- 1. Design and installation of Helix 5-25 Micro-Rebar reinforced concrete must be in accordance with Uniform Evaluation Service, ER-279.
- 2. Designs given in the above table are Helix Design Class B, and walls must conform to all restrictions of Section 4.3.5 or Section 4.3.6 of ER-279.
- 3. Table shall be read in conjunction with Fig 3A, Fig 3B, Fig 3C, and section "NOTES FOR ABOVE-GRADE WALL TABLES."
- 4. Conventional reinforcement (as required) to be placed at mid-depth of the concrete wall.
- 5. Conventional rebar yield strength = 400 MPa, 28 day concrete compressive strength = 20.7 MPa (3000 psi) for Helix Design Class B.
- 6. Walls must be laterally supported at top and bottom of wall.
- 7. The listed Helix 5-25 dosage rate is adequate to replace the required horizontal 10M bars at 16 inches.
- 8. For more information contact your local Logix rep.







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