





CODE

CCMC

53c1911

ICC-ES



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Taper top Reinforcement



CCMC Compliant - Applies in jurisdictions that have not adopted NBC 2005



METRIC STEEL / METRIC SPACING

Wall Height (m)	Backfill Height (m)	Withou Leo	ıt Brick dge	With Lee	Brick dge	STIRRUP SPACING:
		150 mm Wall	200 mm Wall	150 mm Wall	200 mm Wall	1. VENEER – 1000 lb/ft (15kN/m @ 18" (450mm)
	1.22	15M@450	15M@450	15M@450	15M@450	2. VENEER – 1500 lb/ft (22kN/m
	1.53	15M@450	15M@450	15M@450	15M@450	© 12" (300mm)
2.44	1.83	15M@450	15M@450	15M@450	15M@450	9" (6" CORE)
	2.14	15M@450	15M@450	15M@300	15M@450	
	1.22	15M@450	15M@450	15M@450	15M@450	
	1.53	15M@450	15M@450	15M@450	15M@450	
	1.83	15M@450	15M@450	15M@300	15M@450	
3.05	2.14	15M@450	15M@450	15M@300	15M@300	
	2.44	15M@300	15M@450	15M@150	15M@300	
	2.75	15M@150	15M@300	15M@150	15M@150	
	1.22	15M@450	15M@450	15M@450	15M@450	(216 mm)
	1.53	15M@450	15M@450	15M@450	15M@450	#3 (10mm)
	1.83	15M@450	15M@450	15M@300	15M@450	DEFORMED BAR
3.66	2.14	15M@300	15M@450	15M@150	15M@300	#4 SUPPORTING
	2.44	15M@150	15M@300	15M@150	15M@300	BAR (15mm) NOTF:
	2.75	15M@150	15M@300		15M@150	ALL BENDS PER ANSI &
	3.05		15M@150		15M@150	STEEL INSTITUTE STANDARDS -STEEL GRADES AS SPECIFIED
	3.36		15M@150		15M@150	- DIMENSIONS ITPICAL FOR ALL LEDGE BLOCK APPLICATIONS

Notes:

 Table 1-A is based on the following assumptions:

 Loads: earth pressure, surcharge, seismic, and gravity (gravity load includes 2 storeys ICF wall and wood frame roof)

 Snow load: 1.9 kPa

 Floor load: 1.9 kPa

 Concrete: f'c at 28 days 20 MPa

 Reinforcement: fy 400 MPa

 Horizontal reinforcement: 15M@405mm throughout

 Wall Openings: 2-15M all around

BuildBlock Building Systems Typical Veneer Weight (kN/m)

Height (m)	3 ¹ ⁄ ₂ " brick	4" stone/ concrete
2.4	4.5	6
3	5.5	7.5
4	7	10
5	9	12
6	11	15
7	12	17
8	14	20
9	16	22





9701 N. Broadway Extension Oklahoma City, Oklahoma 73114 www.buildblock.com

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Vertical Reinforcement for

6" (150mm) and 8" (200mm)

Below Grade Walls in Seismic Zones 0, 1 & 2

METRIC STEEL / METRIC SPACING

Wall Height (m)	Backfill Height (m)	Without Brick Ledge		With Le	Brick dge	
		150 mm Wall	200 mm Wall	150 mm Wall	200 mm Wall	STIKRUP SPACING: 1. VENEER – 1000 lb/ft (15kN/m @ 18" (450mm)
	1.22	15M@450	15M@450	15M@450	15M@450	2. VENEER – 1500 lb/ft (22kN/m
	1.53	15M@450	15M@450	15M@450	15M@450	@ 12" (300mm)
2.44	1.83	15M@450	15M@450	15M@450	15M@450	9" (6" CORE)
	2.14	15M@450	15M@450	15M@300	15M@450	$1 - 10^{-1} (8 CORE)$
	1.22	15M@450	15M@450	15M@450	15M@450	
	1.53	15M@450	15M@450	15M@450	15M@450	
	1.83	15M@450	15M@450	15M@300	15M@450	
3.05	2.14	15M@300	15M@450	15M@150	15M@300	
	2.44	15M@150	15M@300	15M@150	15M@300	50 0, 5
	2.75	15M@150	15M@300	15M@150	15M@150	
	1.22	15M@450	15M@450	15M@450	15M@450	87
	1.53	15M@450	15M@450	15M@450	15M@450	(216 mm)
	1.83	15M@450	15M@450	15M@300	15M@450	DEFORMED BAR
3.66	2.14	15M@300	15M@450	15M@150	15M@300	
	2.44	15M@150	15M@300	15M@150	15M@150	BAR (15mm)
	2.75	15M@150	15M@150		15M@150	ALL BENDS PER ANSI &
	3.05		15M@150		15M@150	STEEL INSTITUTE STANDARDS —STEEL GRADES AS SPECIFIED
	3.36		15M@150		15M@150	 DIMENSIONS TYPICAL FOR ALL LEDGE BLOCK APPLICATIONS

Notes:

Table 1-B is based on the following assumptions:Loads: earth pressure, surcharge, seismic, and gravity (gravity load includes 2 storeys ICF walland wood frame roof)Snow load: 1.9 kPaFloor load: 1.9 kPaConcrete: fc at 28 days 20 MPaReinforcement: fy 400 MPaHorizontal reinforcement: 15M@405mm throughoutWall Openings: 2-15M all around

BuildBlock Building Systems Typical Veneer Weight (kN/m)

Height (m)	3 ¹ ⁄ ₂ " brick	4" stone/ concrete
2.4	4.5	6
3	5.5	7.5
4	7	10
5	9	12
6	11	15
7	12	17
8	14	20
9	16	22





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Vertical Reinforcement for

6" (150mm) and 8" (200mm)

Below Grade Walls in Seismic Zones 3 & 4

METRIC STEEL / METRIC SPACING

Wall Height (m)	Height (m) Backfill Height (m)		lt Brick Ige	With Brick Ledge		
		150 mm Wall	200 mm Wall	150 mm Wall	200 mm Wall	
	1.22	15M@450	15M@450	15M@450	15M@450	
	1.53	15M@450	15M@450	15M@450	15M@450	
2.44	1.83	15M@450	15M@450	15M@300	15M@450	
	2.14	15M@450	15M@450	15M@150	15M@300	
	1.22	15M@450	15M@450	15M@450	15M@450	
	1.53	15M@450	15M@450	15M@450	15M@450	
	1.83	15M@300	15M@450	15M@300	15M@300	
3.05	2.14	15M@150	15M@300	15M@150	15M@300	
	2.44	15M@150	15M@300	15M@150	15M@150	
	2.75		15M@150		15M@150	
	1.22	15M@450	15M@450	15M@450	15M@450	
	1.53	15M@450	15M@450	15M@300	15M@450	
	1.83	15M@300	15M@450	15M@150	15M@300	
3.66	2.14	15M@150	15M@300	15M@150	15M@150	
	2.44		15M@150		15M@150	
	2.75		15M@150		15M@150	
	3.05		15M@150		15M@150	
	3.36					



Notes:

 Table 1-C is based on the following assumptions:

 Loads: earth pressure, surcharge, seismic, and gravity (gravity load includes 2 storeys ICF wall and wood frame roof)

 Snow load: 1.9 kPa

 Floor load: 1.9 kPa

 Concrete: fc at 28 days 20 MPa

 Reinforcement: fy 400 MPa

 Horizontal reinforcement: 15M@405mm throughout

 Wall Openings: 2-15M all around

BuildBlock Building Systems Typical Veneer Weight (kN/m)

Height (m)	31⁄2" brick	4" stone/ concrete
2.4	4.5	6
3	5.5	7.5
4	7	10
5	9	12
6	11	15
7	12	17
8	14	20
9	16	22





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Vertical Reinforcement for

6" (150mm) and 8" (200mm)

Below Grade Walls in

Seismic Zone 5

		METRIC STEEL / ME								
Wall Height (m)	Vertic	al Reinforcement	Horizontal Reinfo	rcement						
	Gr	round floor ICF wall support	ing a wood frame roof struc	cture						
2.44 3.05 3.66		15M@450mm	15M@405m	m						
	Gr	ound floor ICF wall support	ng a second storey wood fi	rame						
2.44 3.05 3.66		15M@450 mm	15M@405mi	m						
2.44	(Ground floor ICF wall suppo and a wood fra	rting a second storey ICF v me roof structure	vall						
3.05		15M@450 mm 15M@405 mm								
<u>Notes:</u> Table 2 is bas Loads: Wind, s Snow load: 1.9 Floor load: 1.9 Concrete: fc a Reinforcemen Wall thickness Wall openings	ed on the followi seismic, and gra kPa t 28 days 20 MF t 28 days 20 MF t fy 400 MPa : 150 mm or 200 : 2-15M all arour	ng assumptions: vity 2a 0 mm nd	2. VENEE © 12' P C S S NOTE ALL E - DI ALL I	R – 1500 lb/ft (22kN/m '(300mm) 9"(6" CORE) 10"(8" CORE) (8" CORE) (8" CORE) (8" CORE) (8" CORE) (8" CORE) (8" CORE) (9" C						
PETER M. NOVATECH BA	JAMES EF	9701 N. Broadway Extension Oklahoma City, Oklahoma 73114 www.buildblock.com	Office: (405) 840-3386 Fax: (831) 597-0792 Toll Free: 1(866) 222-2575	Reinforcement for Above Grade Walls In All Seismic Zones						



ABOVE GRADE WALL TABLES NBC 1995 / OBC 1997

CCMC Compliant - Applies in jurisdictions that have not adopted NBC 2005



METRIC STEEL / IMPERIAL SPACING

	4" V Seismic Z	Valls Cones 0 - 4	6" & 8" Walls All Seismic Zones		
Wall Height	Vertical	Horizontal	Vertical	Horizontal	
8' Max 25% openings	10M @ 12"	10M @ 16"	10M @ 12"	15M @ 16"	
8' Max 50% openings	10M @ 6"	10M @ 16"	10M @ 12"	15M @ 16"	
10' Max 25% openings	10M @ 6"	10M @ 16"	10M @ 12"	15M @ 16"	
12' Max 25% openings	NA	NA	10M @ 12"	15M @ 16"	
12' Max 50% openings	NA	NA	15M @ 18"	15M @ 16"	

Notes:

Table 3-A is based on the following assumptions:

Loads: wind, seismic, and gravitySnow load:1.9 kPaFloor load:1.9 kPaConcrete: f'c at 28 days20 MPaReinforcement: fy400 MPaWall Openings:2-15M all around

ESSIONAL R NGINEER PETER M. JAMES BUILDING SYSTEMS, LLC 9701 N. Broadway Extension Office: (405) 840-3386 INCE OF ON Oklahoma City, Oklahoma 73114 Fax: (831) 597-0792 3 www.buildblock.com Toll Free: 1(866) 222-2575 JOVATECH ENGINEERING

Reinforcement in Above Grade 4", 6", and 8" Walls NBC 1995 / OBC 1997

METRIC STEEL / METRIC SPACING

	4" (100 n Seismic Z	nm) Walls Zones 0 - 4	6" (150 mm) & 8" (200 mm) Walls All Seismic Zones		
Wall Height	Vertical	Horizontal	Vertical	Horizontal	
8' (2.44 m) Max 25% openings	10M @ 300	10M @ 405	10M @ 300	15M @ 405	
8' (2.44 m) Max 50% openings	10M @ 150	10M @ 405	10M @ 300	15M @ 405	
10' (3.05 m) Max 25% openings	10M @ 150	10M @ 405	10M @ 300	15M @ 405	
12' (3.66 m) Max 25% openings	NA	NA	10M @ 300	15M @ 405	
12' (3.66 m) Max 50% openings	NA	NA	15M @ 450	15M @ 405	

Notes:

Table 3-B is based on the following assumptions:

Loads: wind, seismic, and gravity Snow load: Floor load: Concrete: f'c at 28 days 20 MPa Reinforcement: fy 400 MPa Wall Openings:

1.9 kPa 1.9 kPa 2-15M all around



Reinforcement in Above Grade 4", 6", and 8" Walls NBC 1995 / OBC 1997

IMPERIAL STEEL / IMPERIAL SPACING

	4" V Seismic Z	Valls Zones 0 - 4	6" & 8" Walls All Seismic Zones		
Wall Height	Vertical	Vertical Horizontal Vertical		Horizontal	
8' Max 25% openings	#4 @ 12"	#4 @ 16"	#4 @ 12"	#5 @ 16"	
8' Max 50% openings	#4 @ 6"	#4 @ 16"	#4 @ 12"	#5 @ 16"	
10' Max 25% openings	#4 @ 6"	#4 @ 16"	#4 @ 12"	#5 @ 16"	
12' Max 25% openings	NA	NA	#4 @ 12"	#5 @ 16"	
12' Max 50% openings	NA	NA	#5 @ 18"	#5 @ 16"	

Notes:

Table 3-C is based on the following assumptions:

Loads: wind, seismic, and gravity Snow load: 1.9 kPa Floor load: 1.9 kPa Concrete: f'c at 28 days 20 MPa Reinforcement: fy 400 MPa Wall Openings: 2-15M all around

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LINTEL TABLES NBC 1995 / OBC 1997

CCMC Compliant - Applies in jurisdictions that have not adopted NBC 2005



METRIC STEEL / METRIC SPACING / kN/m

	ft)	dr		JCe	(L						0	0	0	0
	40 lb/	Stirru	enc	distar	um)		210	460	710)96	121	146	171	196
	30 (20			Bottom	steel	1-15M	1-15M	1-15M	1-15M	1-20M	2-15M	2-20M	2-25M	2-25M
	00 lb/ft)	Stirrup	end	distance	(mm)		110	360	610	860	1110	1360	1610	1860
m (Ib/ft)	25 (17(2		Bottom	steel	1-15M	1-15M	1-15M	1-15M	1-20M	1-25M	1-25M	2-20M	2-25M
oad kN/	30 lb/sf)	Stirrup	end	distance	(mm)			200	450	700	950	1200	1450	1700
buted Ic	20 (136			Bottom	steel	1-15M	1-15M	1-15M	1-15M	1-15M	1-20M	2-15M	1-25M	2-20M
y distri	20 lb/ft)	Stirrup	end	distance	(mm)				180	430	680	930	1180	1430
Iniform	15 (102			Bottom	steel	1-15M	1-15M	1-15M	1-15M	1-15M	1-15M	1-20M	2-15M	2-15M
stored u) Ib/ft)	Stirrup	end	distance	(mm)						140	390	640	890
Fac	10 (680			Bottom	steel	1-15M	1-20M							
	lb/ft)	Stirrup	end	distance	(mm)									
	5 (340			Bottom	steel	1-15M								
		Opening	width		(mm)	1000	1500	2000	2500	3000	3500	4000	4500	5000

Notes

Table 4-A is based on the following assumptions:

The factored uniformly distributed load includes live and dead loads

The minimum height of the lintel is 400 mm above the bottom steel

The bottom steel has a minimum 50 mm cover and extends 300 mm into the wall at each support

Stirrups are single leg 10M bars with 180° top & bottom hooks

Stirrups are spaced at 200 mm on centre starting at each support for a distance of "Stirrup end distance" from each support



METRIC STEEL / METRIC SPACING / kN/m

			Fa	ctored (uniform	ly distri	ibuted I	oad kN	/m (Ib/ft	t)		
	5 (340) Ib/ft)	10 (68() Ib/ft)	15(102	20 lb/ft)	20(13	60 lb/sf)	25(17)	00 lb/ft)	30(20	40 lb/ft)
ening		Stirrup		Stirrup		Stirrup		Stirrup		Stirrup		Stirrup
vidth C		end		end		end		end		end		end
	Bottom	distance	Bottom	distance	Bottom	distance	Bottom	distance	Bottom	distance	Bottom	distance
(mu	steel	(mm)	steel	(mm)	steel	(mm)	steel	(mm)	steel	(mm)	steel	(mm)
000	1-15M		1-15M		1-15M		1-15M		1-15M		1-15M	
500	1-15M		1-15M		1-15M		1-15M		1-15M		1-15M	30
2000	1-15M		1-15M		1-15M		1-15M		1-15M	140	1-15M	280
2500	1-15M		1-15M		1-15M		1-15M	180	1-15M	390	1-15M	530
3000	1-15M		1-15M		1-15M	70	1-15M	430	1-20M	640	1-20M	180
3500	1-15M		1-15M		1-15M	320	1-20M	680	2-15M	890	2-15M	1030
000t	1-15M		1-15M		1-20M	570	2-15M	930	1-25M	1140	1-25M	1280
1500	1-15M		1-15M	100	1-20M	820	1-25M	1180	2-20M	1390	2-25M	1530
5000	1-15M		1-20M	350	2-15M	1070	2-20M	1430	2-25M	1640	2-25M	1780

Notes:

Table 4-B is based on the following assumptions:

The factored uniformly distributed load includes live and dead loads

The minimum height of the lintel is 400 mm above the bottom steel

The bottom steel has a minimum 50 mm cover and extends 300 mm into the wall at each support

Stirrups are single leg 10M bars with 180° top & bottom hooks

Stirrups are spaced at 200 mm on centre starting at each support for a distance of "Stirrup end distance" from each support





6" (150mm) and 8" (200mm) BELOW GRADE WALL TABLES NBC 2005 / OBC 2006 part.9

NBC 2005 - Applies in jurisdictions that have adopted NBC 2005, or equivalent



METRIC STEEL / IMPERIAL SPACING

Wall	Backfill	Without B	rick Ledge
Height	Height	6" Walls	8" Walls
8'-0"	4'-6" 5'-3" 6'-6" 7'-3"	10M@12" 10M@12" 10M@12" 15M@18"	not required not required not required not required
9'-0"	4'-6" 5'-3" 6'-6" 7'-3" 7'-9" 8'-6"	10M@12" 10M@12" 10M@12" 15M@18" 15M@18" 15M@18"	not required not required not required 10M@12" 10M@12" 10M@12"
10'-0"	4'-6" 5'-3" 6'-6" 7'-3" 7'-9" 8'-6" 9'-4"	10M@12" 10M@12" 10M@12" 15M@18" 15M@18" 15M@18" 15M@12"	not required not required not required 10M@12" 10M@12" 15M@12"

Notes:

Table based on NBC/OBC 9.15.4.5. Conditions of 9.15 apply. Provide vertical reinforcement shown for selected wall height and backfill height. Provide horizontal reinforcement 10M@16" for all walls.





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TABLE NUMBER

METRIC STEEL / METRIC SPACING

W/all	Backfill	Height	Without B	rick Ledge
Height	(ft)	(m)	150 mm Walls	200 mm Walls
8'-0" 2.44 m	4'-6" 5'-3" 6'-6" 7'-3"	1.35 1.60 2.00 2.20	10M@300 10M@300 10M@300 15M@450	not required not required not required not required
9'-0" 2.75 m	4'-6" 5'-3" 6'-6" 7'-3" 7'-9" 8'-6"	1.35 1.60 2.00 2.20 2.35 2.60	10M@300 10M@300 10M@300 15M@450 15M@450 15M@450	not required not required not required 10M@300 10M@300 10M@300
10'-0" 3 m	4'-6" 5'-3" 6'-6" 7'-3" 7'-9" 8'-6" 9'-4"	1.35 1.60 2.00 2.20 2.35 2.60 2.85	10M@300 10M@300 10M@300 15M@450 15M@450 15M@450 15M@300	not required not required not required 10M@300 10M@300 15M@300

Notes:

Table based on NBC/OBC 9.15.4.5. Conditions of 9.15 apply. Provide vertical reinforcement shown for selected wall height and backfill height. Provide horizontal reinforcement 10M@405 for all walls.





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TABLE NUMBER

5-B

IMPERIAL STEEL / IMPERIAL SPACING

Wall	Backfill	Without B	rick Ledge
Height	Height	6" Walls	8" Walls
8'-0"	4'-6"	#4@18"	not required
	5'-3"	#4@18"	not required
	6'-6"	#4@18"	not required
	7'-3"	#5@18"	not required
9'-0"	4'-6"	#4@18"	not required
	5'-3"	#4@18"	not required
	6'-6"	#4@18"	not required
	7'-3"	#5@18"	#5@18
	7'-9"	#5@18"	#5@18
	8'-6"	#5@18"	#5@18
10'-0"	4'-6"	#4@18"	not required
	5'-3"	#4@18"	not required
	6'-6"	#4@18"	not required
	7'-3"	#5@18"	#5@18
	7'-9"	#5@18"	#5@18
	8'-6"	#5@18"	#5@12
	9'-4"	#5@12"	#5@12

Notes:

Table based on NBC/OBC 9.15.4.5. Conditions of 9.15 apply. Provide vertical reinforcement shown for selected wall height and backfill height. Provide horizontal reinforcement #4@16" for all walls.





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6" (150mm) BELOW GRADE WITH BRICK LEDGE

NBC 2005 - Applies in jurisdictions that have adopted NBC 2005, or equivalent



METRIC STEEL / IMPERIAL SPACING / Ib/ft

Wall	Backfill		Vertical Re	inforcement	
Height	Height	10M@12"	15M@18"	15M@12"	15M@6"
	4'-6"	390	950	1500	1500
8' 0"	5'-3"	390	950	1500	1500
0-0	6'-6"	330	880	1500	1500
	7'-3"	NA	0	1300	1500
	4'-6"	390	950	1500	1500
	5'-3"	330	880	1500	1500
0' 0"	6'-6"	330	880	1500	1500
9-0	7'-3"	NA	0	1300	1500
	7'-9"	NA	0	1300	1500
	8'-6"	NA	0	1300	1500
	4'-6"	390	950	1500	1500
	5'-3"	330	880	1500	1500
	6'-6"	330	880	1500	1500
10'-0"	7'-3"	NA	0	1300	1500
	7'-9"	NA	0	1300	1500
	8'-6"	NA	0	1300	1500
	9'-4"	NA	NA	0	1500

Notes:

Table derived from NBC/OBC 9.15.4.5. Conditions of 9.15 apply.

Table shows maximum weight of veneer for each combination of wall height, backfill height and vertical reinforcement.

Check weight of veneer from side table.

Provide vertical reinforcement shown for selected wall height, backfill height and veneer weight. Provide horizontal reinforcement 10M@16" for all walls.

1. VENEER - @ 18" (4	SPACING: - 1000 lb/ft I50mm)	(15kN/m				
2. VENEER - @ 12" (3	- 1500 lb/ft 300mm)	(22kN/m				
· ·	9"(6" CC	RE)				
1	<u>10" (8"</u> CC	RE)				
		Ē				
4"		178				
106						
58 6.	"'\ <u>\</u>					
3	81,					
	(216 mm)					
	#3 (10mn DEFORMED					
	#4 SUPPC					
NOTE:	DAR (1511) DS PER ANISI &					
STEEL IN -STEEL	GRADES AS SPE	ARDS ECIFIED				
– DIMENSIONS TYPICAL FOR ALL LEDGE BLOCK APPLICATIONS						
ALL LEDO	GE BLOCK APPL	ICATIONS				
ALL LEDO	GE BLOCK APPL	Svstems				
ALL LEDO BuildBloo Typical V	GE BLOCK APPL ck Building /eneer Weig	Systems				
ALL LEDO BuildBloo Typical V Height	GE BLOCK APPL ck Building /eneer Weig 31⁄2" brick	Systems ht (Lb/ft) 4" stone/				
ALL LEDO BuildBloo Typical V Height (ft)	CK Building Ck Building Ceneer Weig 3½" brick	Systems ht (Lb/ft) 4" stone/ concrete				
ALL LEDO BuildBloo Typical V Height (ft) 8 10	CK Building Veneer Weig 3½" brick 290 360	Systems ht (Lb/ft) 4" stone/ concrete 400				
ALL LEDO BuildBloo Typical V Height (ft) 8 10 12	CK Building Veneer Weig 3 ¹ / ₂ " brick 290 360 440	Systems ht (Lb/ft) 4" stone/ concrete 400 500 600				
ALL LEDO BuildBloo Typical V Height (ft) 8 10 12 14	CK Building CK Building Ceneer Weig 3½" brick 290 360 440 510	Systems ht (Lb/ft) 4" stone/ concrete 400 500 600 700				
ALL LEDO BuildBloo Typical V Height (ft) 8 10 12 14 16	GE BLOCK APPL ck Building Yeneer Weig 3½" brick 290 360 340 510 580	Systems ht (Lb/ft) 4" stone/ concrete 400 500 600 700 800				
ALL LEDO BuildBloo Typical V Height (ft) 8 10 12 14 16 18	GE BLOCK APPL ck Building Yeneer Weig 3½" brick 290 360 440 510 580 660	Systems ht (Lb/ft) 4" stone/ concrete 400 500 600 700 800 900				
ALL LEDO BuildBloo Typical V Height (ft) 8 10 12 14 16 18 20	GE BLOCK APPL Ck Building Yeneer Weig 3½" brick 290 360 440 510 580 660 730 730 730	Systems ht (Lb/ft) 4" stone/ concrete 400 500 600 700 800 900 1000				
ALL LEDO BuildBloo Typical V Height (ft) 8 10 12 14 16 18 20 22	SE BLOCK APPL Ck Building Yeneer Weig 3½" brick 290 360 440 510 580 660 730 800	Systems ht (Lb/ft) 4" stone/ concrete 400 500 600 700 800 900 1000 1100				
ALL LEDO BuildBlog Typical V Height (ft) 8 10 12 14 16 18 20 22 24	GE BLOCK APPL Ck Building Yeneer Weig 3½" brick 290 360 360 440 510 580 660 730 800 880	Systems ht (Lb/ft) 4" stone/ concrete 400 500 600 700 800 900 1000 1100 1200				
ALL LEDO BuildBloo Typical V Height (ft) 8 10 12 14 16 18 20 22 24 26	SE BLOCK APPL Ck Building Yeneer Weig 3½" brick 290 360 440 510 580 660 730 800 880 950	Systems ht (Lb/ft) 4" stone/ concrete 400 500 600 700 800 900 1000 1100 1200 1300				
ALL LEDO BuildBlog Typical V Height (ft) 8 10 12 14 16 18 20 22 24 26 28	GE BLOCK APPL Ck Building Yeneer Weig 3½" brick 290 360 340 510 580 660 730 800 880 950 1020	Systems ht (Lb/ft) 4" stone/ concrete 400 500 600 700 800 900 1000 1100 1200 1300 1400				





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Below Grade 6" Walls with

Brick Ledges Maximum Weight of Brick

Veneer (lb/ft)

METRIC STEEL / METRIC SPACING / kN/m

1		i			Vortical Po	inforcomont	
	Wall Height	Backfill (ft)	Height (m)	10M@300	15M@450	15M@300	15M@150
	8'-0" 2.44 m	4'-6" 5'-3" 6'-6" 7'-3"	1.35 1.60 2.00 2.20	6 6 5 NA	14 14 13 0	22 22 22 19	22 22 22 22 22
	9'-0" 2.75 m	4'-6" 5'-3" 6'-6" 7'-3" 7'-9" 8'-6"	1.35 1.60 2.00 2.20 2.35 2.60	6 5 5 NA NA NA	14 13 13 0 0 0	22 22 22 19 19 19	22 22 22 22 22 22 22 22
	10'-0" 3 m	4'-6" 5'-3" 6'-6" 7'-3" 7'-9" 8'-6" 9'-4"	1.35 1.60 2.00 2.20 2.35 2.60 2.85	6 5 5 NA NA NA NA	14 13 13 0 0 0 NA	22 22 19 19 19 19 0	22 22 22 22 22 22 22 22 22 22

Notes:

Table derived from NBC/OBC 9.15.4.5. Conditions of 9.15 apply.

Table shows maximum weight of veneer for each combination of wall height, backfill height and vertical reinforcement.

Check weight of veneer from side table.

Provide vertical reinforcement shown for selected wall height, backfill

height and veneer weight.

Provide horizontal reinforcement 10M@405 for all walls.



BuildBlock Building Systems Typical Veneer Weight (kN/m)

Height (m)	31/2" brick	4" stone/ concrete
2.4	4.5	6
3	5.5	7.5
4	7	10
5	9	12
6	11	15
7	12	17
8	14	20
9	16	22





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IMPERIAL STEEL / IMPERIAL SPACING / Ib/ft

Wall	Backfill	Vertic	al Reinforce	ement
Height	Height	#5@18"	#5@12"	#5@6"
8'-0"	4'-6" 5'-3" 6'-6" 7'-3"	890 890 820 0	1500 1500 1500 1220	1500 1500 1500 1500
9'-0"	4'-6" 5'-3" 6'-6" 7'-3" 7'-9" 8'-6"	890 820 820 0 0 0	1500 1500 1500 1220 1220 1220	1500 1500 1500 1500 1500 1500
10'-0"	4'-6" 5'-3" 6'-6" 7'-3" 7'-9" 8'-6" 9'-4"	890 820 820 0 0 0 0 NA	1500 1500 1500 1220 1220 1220 NA	1500 1500 1500 1500 1500 1500 1500



Table derived from NBC/OBC 9.15.4.5. Conditions of 9.15 apply.

Table shows maximum weight of veneer for each combination of wall height, backfill height and vertical reinforcement.

Check weight of veneer from side table.

Provide vertical reinforcement shown for selected wall height, backfill height and veneer weight. Provide horizontal reinforcement #4@16" for all walls.





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1020

1090

30

STIRRUP SPACING: 1. VENEER – 1000 lb/ft (15kN/m

2. VENEER - 1500 lb/ft (22kN/m

₩<u></u>

9"(6" CORE) 10" (8"

CORE) um m

@ 18" (450mm)

@ 12" (300mm)

Below Grade 6" Walls with Brick Ledges Maximum Weight of Brick Veneer (lb/ft)

1400

1500





8" (200mm) BELOW GRADE WITH BRICK LEDGE

NBC 2005 - Applies in jurisdictions that have adopted NBC 2005, or equivalent



METRIC STEEL / IMPERIAL SPACING / Ib/ft

Wall	Backfill		Vertical Rei	inforcement	
Height	Height	10M@12"	15M@18"	15M@12"	15M@6"
	4'-6"	1500	1500	1500	1500
o! 0"	5'-3"	1500	1500	1500	1500
8-0	6'-6"	1500	1500	1500	1500
	7'-3"	1500	1500	1500	1500
	4'-6"	1500	1500	1500	1500
	5'-3"	1500	1500	1500	1500
	6'-6"	1500	1500	1500	1500
9-0	7'-3"	530	1260	1500	1500
	7'-9"	0	710	1500	1500
	8'-6"	0	710	1500	1500
	4'-6"	1500	1500	1500	1500
	5'-3"	1500	1500	1500	1500
	6'-6"	1500	1500	1500	1500
10'-0"	7'-3"	530	1260	1500	1500
	7'-9"	0	710	1500	1500
	8'-6"	NA	NA	1080	1500
	9'-4"	NA	NA	1080	1500

Notes:

Table derived from NBC/OBC 9.15.4.5. Conditions of 9.15 apply.

Table shows maximum weight of veneer for each combination of wall height, backfill height and vertical reinforcement.

Check weight of veneer from side table.

Provide vertical reinforcement shown for selected wall height, backfill height and veneer weight. Provide horizontal reinforcement 10M@16" for all walls.

STIRRUP 1. VENEER - @ 18" (4	SPACING: - 1000 lb/ft \$50mm)	(15kN/m				
2. VENEER - @ 12" (3	– 1500 lb/ft 300mm)	(22kN/m				
× ×	9"(6" CC	RE)				
, T	<u>10" (8"</u> CC	DRE)				
, (E		178				
		<u> </u>				
(40 (40)						
	$\frac{8_{2}}{216}$					
\swarrow	#3 (10mn	n)				
	DEFORMED	BAR				
	#4 SUPPC BAR (15m	NRTING — Im)				
ALL BEN	DS PER ANSI &	c				
STEEL IN -STEEL	ISTITUTE STANDA GRADES AS SPE	ARDS ECIFIED				
– DIMENSIONS TYPICAL FOR ALL LEDGE BLOCK APPLICATIONS						
ALL LEDO	GE BLOCK APPL	ICATIONS				
	ck Building	Svstems				
BuildBlo Typical V	ck Building	Systems ht (Lb/ft)				
BuildBloo Typical V Height	ck Building /eneer Weig 3 ¹ ⁄2" brick	Systems ht (Lb/ft) 4" stone/				
BuildBloo Typical V Height (ft)	ck Building /eneer Weig 3½" brick	Systems ht (Lb/ft) 4" stone/ concrete				
ALL LEDO BuildBloo Typical V Height (ft) 8	ck Building /eneer Weig 31/2" brick 290	Systems ht (Lb/ft) 4" stone/ concrete 400				
ALL LEDO BuildBloo Typical V Height (ft) 8 10	ck Building /eneer Weig 3½" brick 290 360	Systems ht (Lb/ft) 4" stone/ concrete 400 500				
ALL LEDO BuildBloo Typical V Height (ft) 8 10 12	ck Building /eneer Weig 3½" brick 290 360 440	Systems ht (Lb/ft) 4" stone/ concrete 400 500 600				
ALL LEDO BuildBloo Typical V Height (ft) 8 10 12 14	GE BLICK APPL ck Building ////////////////////////////////////	Systems ht (Lb/ft) 4" stone/ concrete 400 500 600 700				
ALL LEDO BuildBloo Typical V Height (ft) 8 10 12 14 16	SE BLOCK APPL ck Building Yeneer Weig 3½" brick 290 360 440 510 580	Systems ht (Lb/ft) 4" stone/ concrete 400 500 600 700 800				
ALL LEDO BuildBloo Typical V Height (ft) 8 10 12 14 16 18	GE BLICK APPL ck Building ////////////////////////////////////	Systems ht (Lb/ft) 4" stone/ concrete 400 500 600 700 800 900				
ALL LEDO BuildBlog Typical V Height (ft) 8 10 12 14 16 18 20	SE BLOCK APPL ck Building Yeneer Weig 3½" brick 290 360 440 510 580 660 730 730 730	Systems ht (Lb/ft) 4" stone/ concrete 400 500 600 700 800 900 1000				
BuildBlog Typical V Height (ft) 8 10 12 14 16 18 20 22	GE BLIOCK APPL Ck Building Yeneer Weig 3½" brick 290 360 340 510 580 660 730 800 800	Systems ht (Lb/ft) 4" stone/ concrete 400 500 600 700 800 900 1000 1100				
BuildBlog Typical V Height (ft) 8 10 12 14 16 18 20 22 24	SE BLOCK APPL ck Building Yeneer Weig 3½" brick 290 360 360 440 510 580 580 660 730 800 880 880 880	Systems ht (Lb/ft) 4" stone/ concrete 400 500 600 700 800 900 1000 1100 1200				
BuildBlog Typical V Height (ft) 8 10 12 14 16 18 20 22 24 26	GE BLOCK APPL Ck Building Yeneer Weig 3½" brick 290 360 342" brick 290 360 440 510 580 660 730 800 880 950	Systems ht (Lb/ft) 4" stone/ concrete 400 500 600 700 800 900 1000 1100 1200 1300				
BuildBlog Typical V Height (ft) 8 10 12 14 16 18 20 22 24 26 28	SE BLOCK APPL ck Building Yeneer Weig 3½" brick 290 360 340 510 580 660 730 800 880 950 1020	Systems ht (Lb/ft) 4" stone/ concrete 400 500 600 700 800 900 1000 1100 1200 1300 1400				





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Below Grade 8" Walls with

Brick Ledges

Maximum Weight of Brick Veneer (lb/ft)

METRIC STEEL / METRIC SPACING / kN/m

Wall	Backfill	Height		Vertical Rei	inforcement	
Height	(ft)	(m)	10M@300	15M@450	15M@300	15M@150
8'-0" 2.44 m	4'-6" 5'-3" 6'-6" 7'-3"	1.35 1.60 2.00 2.20	22 22 22 22 22	22 22 22 22	22 22 22 22	22 22 22 22 22
9'-0" 2.75 m	4'-6" 5'-3" 6'-6" 7'-3" 7'-9" 8'-6"	1.35 1.60 2.00 2.20 2.35 2.60	22 22 22 8 0 0	22 22 22 18 10 10	22 22 22 22 22 22 22 22	22 22 22 22 22 22 22 22
10'-0" 3 m	4'-6" 5'-3" 6'-6" 7'-3" 7'-9" 8'-6" 9'-4"	1.35 1.60 2.00 2.20 2.35 2.60 2.85	22 22 22 8 0 NA NA	22 22 22 18 10 NA NA	22 22 22 22 22 22 16 16	22 22 22 22 22 22 22 22 22 22

Notes:

Table derived from NBC/OBC 9.15.4.5. Conditions of 9.15 apply.

Table shows maximum weight of veneer for each combination of wall height, backfill height and vertical reinforcement.

Check weight of veneer from side table.

Provide vertical reinforcement shown for selected wall height, backfill

height and veneer weight.

Provide horizontal reinforcement 10M@405 for all walls.



STIRRUP SPACING:

@ 18" (450mm)

@ 12" (300mm)

1. VENEER - 1000 lb/ft (15kN/m

2. VENEER - 1500 lb/ft (22kN/m

9"(6" CORE)





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TABLE NUMBER

IMPERIAL STEEL / IMPERIAL SPACING / Ib/ft

Wall	Backfill	Vertical Reinforcement		
Height	Height	#5@18"	#5@12"	#5@6"
8'-0"	4'-6"	1500	1500	1500
	5'-3"	1500	1500	1500
	6'-6"	1500	1500	1500
	7'-3"	1500	1500	1500
9'-0"	4'-6"	1500	1500	1500
	5'-3"	1500	1500	1500
	6'-6"	1500	1500	1500
	7'-3"	1190	1500	1500
	7'-9"	640	1500	1500
	8'-6"	640	1500	1500
10'-0"	4'-6"	1500	1500	1500
	5'-3"	1500	1500	1500
	6'-6"	1500	1500	1500
	7'-3"	1190	1500	1500
	7'-9"	640	1500	1500
	8'-6"	NA	970	1500
	9'-4"	NA	970	1500

Notes:

Table derived from NBC/OBC 9.15.4.5. Conditions of 9.15 apply.

Table shows maximum weight of veneer for each combination of wall height, backfill height and vertical reinforcement.

Check weight of veneer from side table.

Provide vertical reinforcement shown for selected wall height, backfill height and veneer weight. Provide horizontal reinforcement #4@16" for all walls.





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STIRRUP SPACING: 1. VENEER – 1000 lb/ft (15kN/m

2. VENEER - 1500 lb/ft (22kN/m

ēz====_3

9" (6" CORE) 10" (8" CORE)

CORE)

@ 18" (450mm)

@ 12" (300mm)

Below Grade 8" Walls with Brick Ledges Maximum Weight of Brick Veneer (lb/ft)





ABOVE GRADE WALL TABLES NBC 2005 / OBC 2006 part.9

NBC 2005 - Applies in jurisdictions that have adopted NBC 2005, or equivalent



METRIC STEEL / IMPERIAL SPACING

		6" & 8" Walls		
Wall Height		Vertical	Horizontal	
10' Max 25% openings		10M @ 12"	10M @ 16"	
able based on NBC/OBC	9 20 17	Conditions of 9 20 apply		
Table based on NBC/OBC Applicable only where: Nalls exceeding these lim	C 9.20.17 Se Sto nits requir	Conditions of 9.20 apply. Sismic Spectral Response Acceleration or the system of the syste	ation Sa(0.2) does not exceed 0.4 exceed 10'	



METRIC STEEL / METRIC SPACING

	6" (150 mm) & 8" (200 mm) Walls		
Wall Height	Vertical	Horizontal	
10' (3.05 m) Max 25% openings	10M @ 300	10M @ 405	

Table based on NBC/OBC 9.20.17. Conditions of 9.20 apply.

Applicable only where: Seismic Spectral Response Acceleration Sa(0.2) does not exceed 0.4 Storey height floor to floor does not exceed 3 m (10') Walls exceeding these limits require engineered design

Table 8-B is based on the following assumptions:

Snow load:	1.9 kPa
Floor load:	1.9 kPa
Concrete: f'c at 28 days	20 MPa
Reinforcement: fy	400 MPa
Wall Openings:	2-15M all around



IMPERIAL STEEL / IMPERIAL SPACING

Γ					
	6" & 8" Walls				
Wall	Wall Height			Horizontal	
Max 25%	10' % openings	#4 @ 12"	,	#4 @ 16"	
Table based on	NBC/OBC 9.20.17	. Conditions of 9.20 ap	ply.		
Applicable only	where: Se	eismic Spectral Respon torev height floor to floo	ise Accelera er does not e	tion Sa(0.2) does not ex xceed 3 m (10')	cceed 0.4
Walls exceeding	g these limits requi	re engineered design			
Snow load: Floor load: Concrete: f'c at Reinforcement: Wall Openings:	1.9 kPa 1.9 kPa 28 days 20 MPa fy 400 MF 2-15M	a a Pa all around			
PETER M. JAMES	B	BUILDING	B SYST	IOCK Ems, llc	Reinforcement in 6" and 8" Above Grade Walls NBC 2005 / OBC 2006 Subsection 9.20.17
OVATECH ENGINEERINC	9701 N. Broad Oklahoma City www.buildblod	dway Extension y, Oklahoma 73114 ck.com	Office: Fax: Toll Free	(405) 840-3386 (831) 597-0792 1(866) 222-2575	TABLE NUMBER

NOVATECH ENGINEERING



CANADIAN ENGINEERING TAPER TOP TABLES



TAPER TOP LOAD CAPACITIES

