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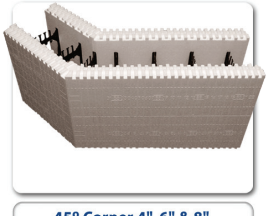
CANADIAN ENGINEERING TABLES

ESR-1911 CODE 13283-R
ICC-ES & CCMC
COMPLIANT

Straight 4", 6" & 8" Concrete Cores

90° Corner 4", 6" & 8" Concrete Cores



45° Corner 4", 6" & 8" Concrete Cores

Brick Ledge 6" & 8" Concrete Cores

Double Taper Top 6" & 8" Concrete Cores

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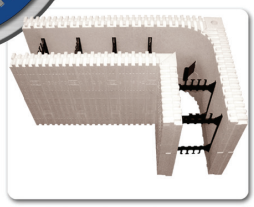
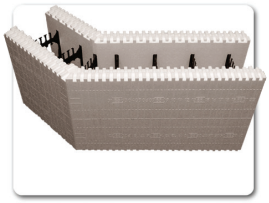
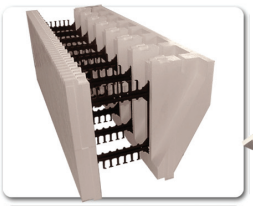
Straight 4", 6" & 8" Concrete Cores



90° Corner 4", 6" & 8" Concrete Cores



45° Corner 4", 6" & 8" Concrete Cores



Brick Ledge 6" & 8" Concrete Cores

Double Taper Top 6" & 8" Concrete Cores

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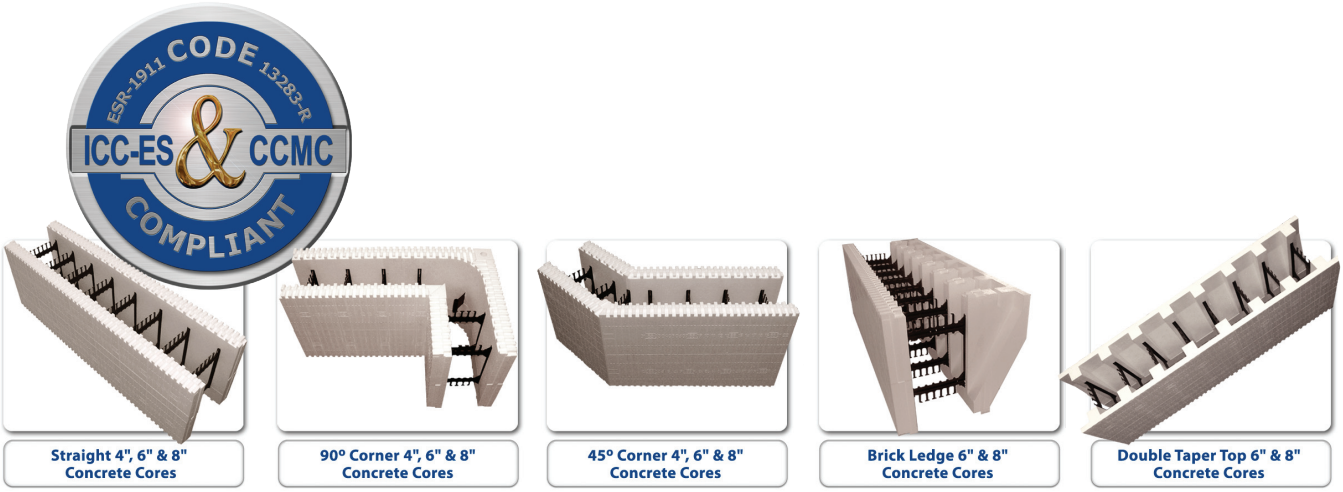
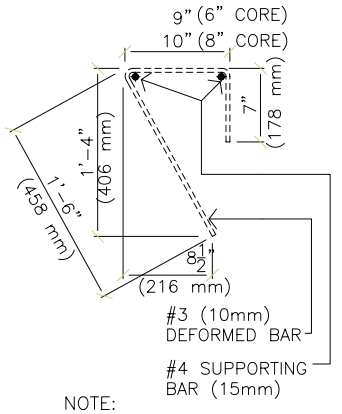


BUILDBLOCK© BUILDING SYSTEMS
CANADIAN ENGINEERING TABLES

METRIC STEEL / METRIC SPACING

Wall Height (m)	Backfill Height (m)	Without Brick Ledge		With Brick Ledge	
		150 mm Wall	200 mm Wall	150 mm Wall	200 mm Wall
2.44	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@450	15M@450
	2.14	15M@450	15M@450	15M@300	15M@450
3.05	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
	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
3.66	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
	2.14	15M@300	15M@450	15M@150	15M@300
	2.44	15M@150	15M@300	15M@150	15M@300
	2.75	15M@150	15M@300		15M@150
	3.05		15M@150		15M@150
	3.36		15M@150		15M@150

STIRRUP SPACING:
1. VENEER – 1000 lb/ft (15kN/m @ 18" (450mm)
2. VENEER – 1500 lb/ft (22kN/m @ 12" (300mm)



NOTE:
ALL BENDS PER ANSI & STEEL INSTITUTE STANDARDS –STEEL GRADES AS SPECIFIED – DIMENSIONS TYPICAL 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)	3½" 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

LICENSED PROFESSIONAL ENGINEER
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Vertical Reinforcement for 6" (150mm) and 8" (200mm) Below Grade Walls in Seismic Zones 0, 1 & 2

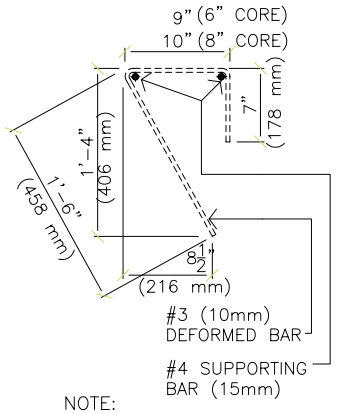
TABLE NUMBER
1-A

BUILDBLOCK© BUILDING SYSTEMS
CANADIAN ENGINEERING TABLES

METRIC STEEL / METRIC SPACING

Wall Height (m)	Backfill Height (m)	Without Brick Ledge		With Brick Ledge	
		150 mm Wall	200 mm Wall	150 mm Wall	200 mm Wall
2.44	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@450	15M@450
	2.14	15M@450	15M@450	15M@300	15M@450
3.05	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
	2.14	15M@300	15M@450	15M@150	15M@300
	2.44	15M@150	15M@300	15M@150	15M@300
	2.75	15M@150	15M@300	15M@150	15M@150
3.66	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
	2.14	15M@300	15M@450	15M@150	15M@300
	2.44	15M@150	15M@300	15M@150	15M@150
	2.75	15M@150	15M@150		15M@150
	3.05		15M@150		15M@150
	3.36		15M@150		15M@150

STIRRUP SPACING:
1. VENEER – 1000 lb/ft (15kN/m @ 18" (450mm)
2. VENEER – 1500 lb/ft (22kN/m @ 12" (300mm)



NOTE:
ALL BENDS PER ANSI & STEEL INSTITUTE STANDARDS –STEEL GRADES AS SPECIFIED – 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 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)	3½" 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

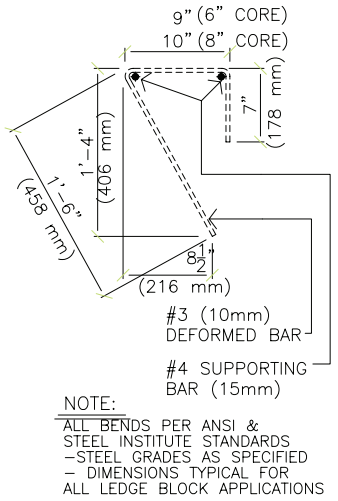
TABLE NUMBER
1-B

BUILDBLOCK© BUILDING SYSTEMS
CANADIAN ENGINEERING TABLES

METRIC STEEL / METRIC SPACING

Wall Height (m)	Backfill Height (m)	Without Brick Ledge		With Brick Ledge	
		150 mm Wall	200 mm Wall	150 mm Wall	200 mm Wall
2.44	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
	2.14	15M@450	15M@450	15M@150	15M@300
3.05	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
	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
3.66	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
	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				

STIRRUP SPACING:
1. VENEER – 1000 lb/ft (15kN/m @ 18" (450mm)
2. VENEER – 1500 lb/ft (22kN/m @ 12" (300mm)



NOTE:
ALL BENDS PER ANSI & STEEL INSTITUTE STANDARDS –STEEL GRADES AS SPECIFIED – DIMENSIONS TYPICAL FOR ALL LEDGE BLOCK APPLICATIONS

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: 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)	3½" 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

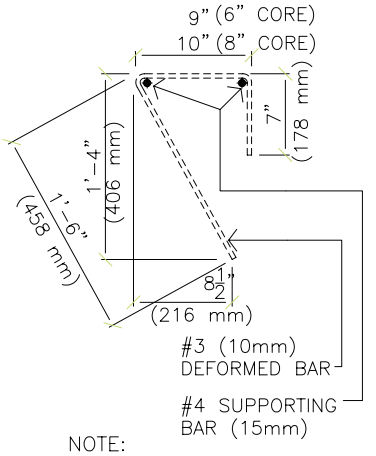
TABLE NUMBER
1-C

BUILDBLOCK© BUILDING SYSTEMS
CANADIAN ENGINEERING TABLES

METRIC STEEL / METRIC SPACING

Wall Height (m)	Vertical Reinforcement	Horizontal Reinforcement
2.44 3.05 3.66	Ground floor ICF wall supporting a wood frame roof structure	
	15M@450 mm	15M@405mm
2.44 3.05 3.66	Ground floor ICF wall supporting a second storey wood frame and a wood frame roof structure	
	15M@450 mm	15M@405mm
2.44 3.05 3.66	Ground floor ICF wall supporting a second storey ICF wall and a wood frame roof structure	
	15M@450 mm	15M@405mm

STIRRUP SPACING:
1. VENEER – 1000 lb/ft (15kN/m @ 18" (450mm)
2. VENEER – 1500 lb/ft (22kN/m @ 12" (300mm)



NOTE:
ALL BENDS PER ANSI & STEEL INSTITUTE STANDARDS
–STEEL GRADES AS SPECIFIED
– DIMENSIONS TYPICAL FOR ALL LEDGE BLOCK APPLICATIONS

Notes:
Table 2 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 thickness: 150 mm or 200 mm
Wall openings: 2-15M all around

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Reinforcement for Above Grade Walls In All Seismic Zones

TABLE NUMBER
2

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ABOVE GRADE WALL TABLES
NBC 1995 / OBC 1997

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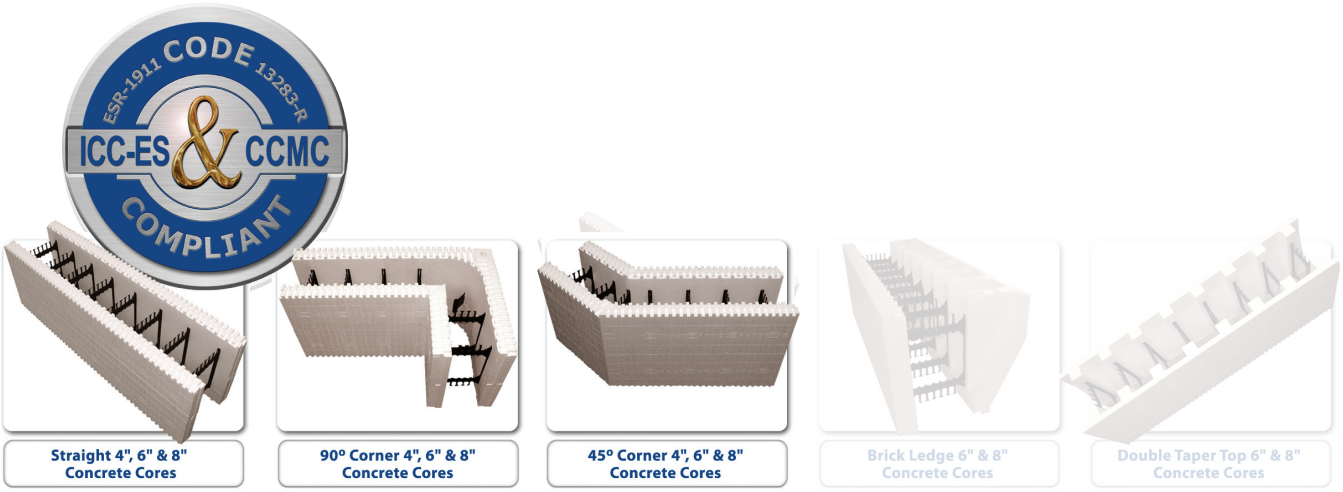

BUILDBLOCK© BUILDING SYSTEMS
CANADIAN ENGINEERING TABLES

METRIC STEEL / IMPERIAL SPACING

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

TABLE NUMBER
3-A

BUILDBLOCK© BUILDING SYSTEMS
CANADIAN ENGINEERING TABLES

METRIC STEEL / METRIC SPACING

	4" (100 mm) Walls Seismic 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: 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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Reinforcement in Above Grade 4", 6", and 8" Walls
NBC 1995 / OBC 1997

TABLE NUMBER
3-B

BUILDBLOCK© BUILDING SYSTEMS
CANADIAN ENGINEERING TABLES

IMPERIAL STEEL / IMPERIAL SPACING

	4" Walls Seismic Zones 0 - 4		6" & 8" Walls All Seismic Zones	
Wall Height	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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Reinforcement in Above Grade 4", 6", and 8" Walls
NBC 1995 / OBC 1997

TABLE NUMBER
3-C

BuildBlock®
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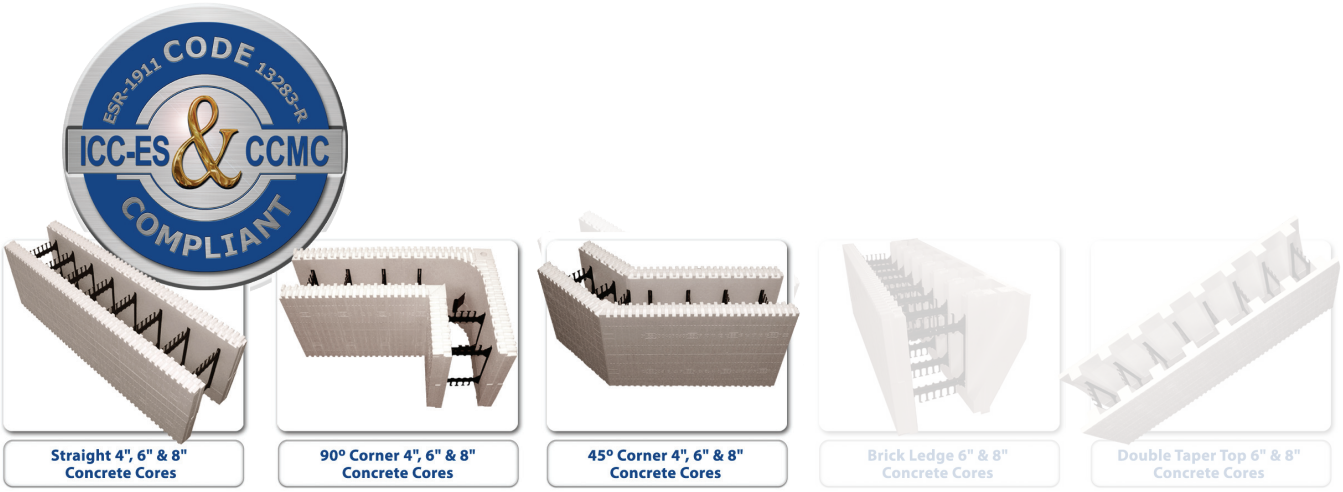
LINTEL TABLES
NBC 1995 / OBC 1997

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

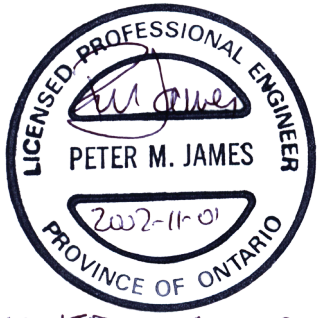


BUILDBLOCK© BUILDING SYSTEMS
CANADIAN ENGINEERING TABLES

METRIC STEEL / METRIC SPACING / kN/m

Opening width (mm)	Factored uniformly distributed load kN/m (lb/ft)											
	5 (340 lb/ft)		10 (680 lb/ft)		15 (1020 lb/ft)		20 (1360 lb/sf)		25 (1700 lb/ft)		30 (2040 lb/ft)	
	Bottom steel	Stirrup end distance (mm)	Bottom steel	Stirrup end distance (mm)	Bottom steel	Stirrup end distance (mm)	Bottom steel	Stirrup end distance (mm)	Bottom steel	Stirrup end distance (mm)	Bottom steel	Stirrup end distance (mm)
1000	1-15M		1-15M		1-15M		1-15M		1-15M		1-15M	
1500	1-15M		1-15M		1-15M		1-15M		1-15M	110	1-15M	210
2000	1-15M		1-15M		1-15M		1-15M	200	1-15M	360	1-15M	460
2500	1-15M		1-15M		1-15M	180	1-15M	450	1-15M	610	1-15M	710
3000	1-15M		1-15M		1-15M	430	1-15M	700	1-20M	860	1-20M	960
3500	1-15M		1-15M	140	1-15M	680	1-20M	950	1-25M	1110	2-15M	1210
4000	1-15M		1-15M	390	1-20M	930	2-15M	1200	1-25M	1360	2-20M	1460
4500	1-15M		1-15M	640	2-15M	1180	1-25M	1450	2-20M	1610	2-25M	1710
5000	1-15M		1-20M	890	2-15M	1430	2-20M	1700	2-25M	1860	2-25M	1960

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



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Minimum Steel Reinforcement for Lintels in 150mm (6") Walls

TABLE NUMBER
4-A

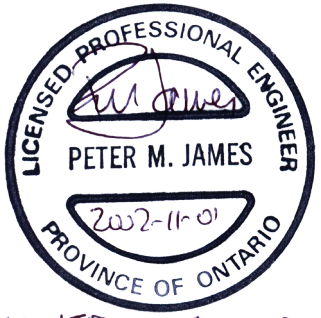
BUILDBLOCK© BUILDING SYSTEMS
CANADIAN ENGINEERING TABLES

METRIC STEEL / METRIC SPACING / kN/m

Opening width (mm)	Factored uniformly distributed load kN/m (lb/ft)											
	5 (340 lb/ft)		10 (680 lb/ft)		15 (1020 lb/ft)		20 (1360 lb/sf)		25 (1700 lb/ft)		30 (2040 lb/ft)	
	Bottom steel	Stirrup end distance (mm)	Bottom steel	Stirrup end distance (mm)	Bottom steel	Stirrup end distance (mm)	Bottom steel	Stirrup end distance (mm)	Bottom steel	Stirrup end distance (mm)	Bottom steel	Stirrup end distance (mm)
1000	1-15M		1-15M		1-15M		1-15M		1-15M		1-15M	
1500	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	780
3500	1-15M		1-15M		1-15M	320	1-20M	680	2-15M	890	2-15M	1030
4000	1-15M		1-15M		1-20M	570	2-15M	930	1-25M	1140	1-25M	1280
4500	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



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Minimum Steel Reinforcement for Lintels in 200mm (8") Walls

TABLE NUMBER
4-B

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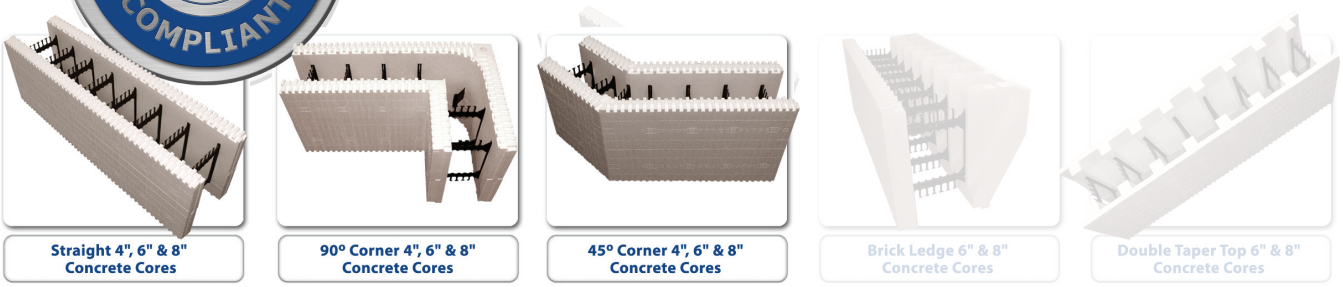
6" (150mm) and 8" (200mm) BELOW GRADE WALL TABLES NBC 2005 / OBC 2006 part.9

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

ESR-1911 CODE 13283-R ICC-ES & CCMC COMPLIANT



Straight 4", 6" & 8" Concrete Cores

90° Corner 4", 6" & 8" Concrete Cores

45° Corner 4", 6" & 8" Concrete Cores

Brick Ledge 6" & 8" Concrete Cores

Double Taper Top 6" & 8" Concrete Cores

BUILDBLOCK© BUILDING SYSTEMS
CANADIAN ENGINEERING TABLES

METRIC STEEL / IMPERIAL SPACING

Wall Height	Backfill Height	Without Brick Ledge	
		6" Walls	8" Walls
8'-0"	4'-6"	10M@12"	not required
	5'-3"	10M@12"	not required
	6'-6"	10M@12"	not required
	7'-3"	15M@18"	not required
9'-0"	4'-6"	10M@12"	not required
	5'-3"	10M@12"	not required
	6'-6"	10M@12"	not required
	7'-3"	15M@18"	10M@12"
	7'-9"	15M@18"	10M@12"
	8'-6"	15M@18"	10M@12"
10'-0"	4'-6"	10M@12"	not required
	5'-3"	10M@12"	not required
	6'-6"	10M@12"	not required
	7'-3"	15M@18"	10M@12"
	7'-9"	15M@18"	10M@12"
	8'-6"	15M@18"	15M@12"
	9'-4"	15M@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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Below Grade 150mm (6") and 200mm (8") Walls - Vertical Reinforcement Based on NBC / OBC 9.15.4.5 Without Brick Ledge

TABLE NUMBER
5-A

BUILDBLOCK© BUILDING SYSTEMS
CANADIAN ENGINEERING TABLES

METRIC STEEL / METRIC SPACING

Wall Height	Backfill Height (ft)	Backfill Height (m)	Without Brick Ledge: 150 mm Walls	Without Brick Ledge: 200 mm Walls
8'-0" 2.44 m	4'-6"	1.35	10M@300	not required
	5'-3"	1.60	10M@300	not required
	6'-6"	2.00	10M@300	not required
	7'-3"	2.20	15M@450	not required
9'-0" 2.75 m	4'-6"	1.35	10M@300	not required
	5'-3"	1.60	10M@300	not required
	6'-6"	2.00	10M@300	not required
	7'-3"	2.20	15M@450	10M@300
	7'-9"	2.35	15M@450	10M@300
	8'-6"	2.60	15M@450	10M@300
10'-0" 3 m	4'-6"	1.35	10M@300	not required
	5'-3"	1.60	10M@300	not required
	6'-6"	2.00	10M@300	not required
	7'-3"	2.20	15M@450	10M@300
	7'-9"	2.35	15M@450	10M@300
	8'-6"	2.60	15M@450	15M@300
	9'-4"	2.85	15M@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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Below Grade 150mm and 200mm Walls - Vertical Reinforcement Based on NBC / OBC 9.15.4.5 Without Brick Ledge

TABLE NUMBER
5-B

BUILDBLOCK© BUILDING SYSTEMS
CANADIAN ENGINEERING TABLES

IMPERIAL STEEL / IMPERIAL SPACING

Wall Height	Backfill Height	Without Brick Ledge	
		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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Below Grade 6" and 8" Walls
- Vertical Reinforcement
Based on NBC / OBC
9.15.4.5
Without Brick Ledge

TABLE NUMBER
5-C

BuildBlock®
BUILDING SYSTEMS, LLC

6" (150mm) BELOW GRADE WITH BRICK LEDGE

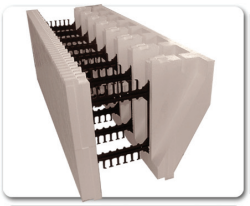
NBC 2005 - Applies in jurisdictions that have adopted NBC 2005, or equivalent

ESR-1911 CODE 13283-R
ICC-ES & CCMC
COMPLIANT


Straight 4", 6" & 8" Concrete Cores


90° Corner 4", 6" & 8" Concrete Cores

45° Corner 4", 6" & 8" Concrete Cores


Brick Ledge 6" & 8" Concrete Cores

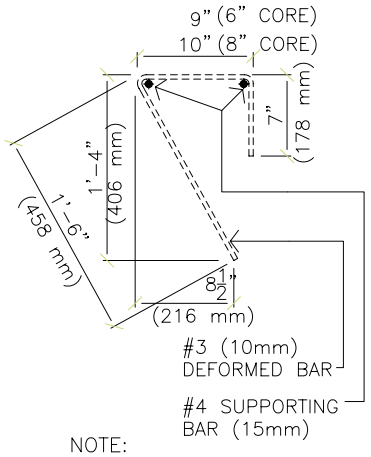
Double Taper Top 6" & 8" Concrete Cores

BUILDBLOCK© BUILDING SYSTEMS
CANADIAN ENGINEERING TABLES

METRIC STEEL / IMPERIAL SPACING / lb/ft

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

STIRRUP SPACING:
1. VENEER – 1000 lb/ft (15kN/m @ 18" (450mm)
2. VENEER – 1500 lb/ft (22kN/m @ 12" (300mm)



NOTE:
ALL BENDS PER ANSI & STEEL INSTITUTE STANDARDS
–STEEL GRADES AS SPECIFIED
– DIMENSIONS TYPICAL FOR ALL LEDGE BLOCK APPLICATIONS

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.

BuildBlock Building Systems Typical Veneer Weight (Lb/ft)		
Height (ft)	3½" brick	4" stone/ concrete
8	290	400
10	360	500
12	440	600
14	510	700
16	580	800
18	660	900
20	730	1000
22	800	1100
24	880	1200
26	950	1300
28	1020	1400
30	1090	1500

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

TABLE NUMBER
6-A

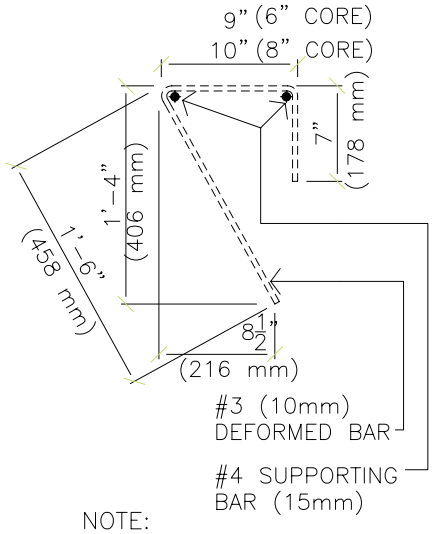
BUILDBLOCK© BUILDING SYSTEMS
CANADIAN ENGINEERING TABLES

METRIC STEEL / METRIC SPACING / kN/m

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

STIRRUP SPACING:

1. VENEER – 1000 lb/ft (15kN/m @ 18" (450mm)
2. VENEER – 1500 lb/ft (22kN/m @ 12" (300mm)



NOTE:
ALL BENDS PER ANSI & STEEL INSTITUTE STANDARDS
–STEEL GRADES AS SPECIFIED
– DIMENSIONS TYPICAL FOR ALL LEDGE BLOCK APPLICATIONS

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)	3½" 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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Below Grade 150 mm Walls with Brick Ledges Maximum Weight of Brick Veneer (kN/m)

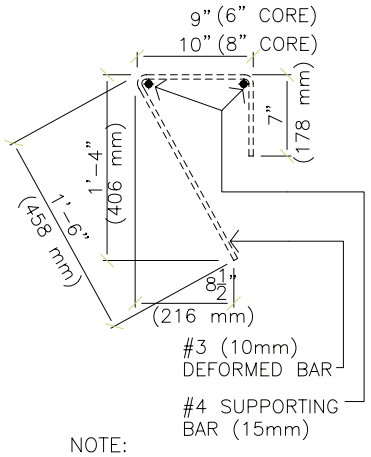
TABLE NUMBER
6-B

BUILDBLOCK© BUILDING SYSTEMS
CANADIAN ENGINEERING TABLES

IMPERIAL STEEL / IMPERIAL SPACING / lb/ft

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

STIRRUP SPACING:
1. VENEER – 1000 lb/ft (15kN/m @ 18" (450mm)
2. VENEER – 1500 lb/ft (22kN/m @ 12" (300mm)



NOTE:
ALL BENDS PER ANSI & STEEL INSTITUTE STANDARDS
–STEEL GRADES AS SPECIFIED
– DIMENSIONS TYPICAL FOR ALL LEDGE BLOCK APPLICATIONS

BuildBlock Building Systems Typical Veneer Weight (Lb/ft)

Height (ft)	3½" brick	4" stone/ concrete
8	290	400
10	360	500
12	440	600
14	510	700
16	580	800
18	660	900
20	730	1000
22	800	1100
24	880	1200
26	950	1300
28	1020	1400
30	1090	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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Below Grade 6" Walls with Brick Ledges
Maximum Weight of Brick Veneer (lb/ft)

TABLE NUMBER
6-C

BB BuildBlock®
BUILDING SYSTEMS, LLC

8" (200mm) BELOW GRADE WITH BRICK LEDGE

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

ESR-1911 CODE 13283-R
ICC-ES & CCMC
COMPLIANT

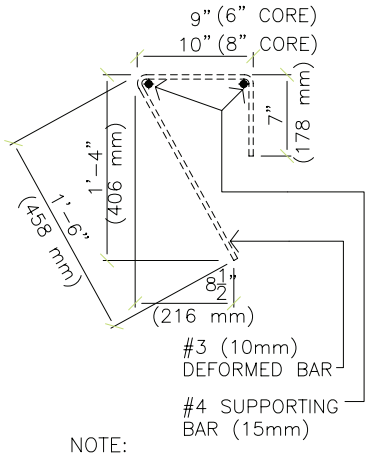
Straight 4", 6" & 8" Concrete Cores | 90° Corner 4", 6" & 8" Concrete Cores | 45° Corner 4", 6" & 8" Concrete Cores | **Brick Ledge 6" & 8" Concrete Cores** | Double Taper Top 6" & 8" Concrete Cores

BUILDBLOCK© BUILDING SYSTEMS
CANADIAN ENGINEERING TABLES

METRIC STEEL / IMPERIAL SPACING / lb/ft

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

STIRRUP SPACING:
1. VENEER – 1000 lb/ft (15kN/m @ 18" (450mm)
2. VENEER – 1500 lb/ft (22kN/m @ 12" (300mm)



NOTE:
ALL BENDS PER ANSI & STEEL INSTITUTE STANDARDS
–STEEL GRADES AS SPECIFIED
– DIMENSIONS TYPICAL FOR ALL LEDGE BLOCK APPLICATIONS

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.

BuildBlock Building Systems Typical Veneer Weight (Lb/ft)		
Height (ft)	3½" brick	4" stone/ concrete
8	290	400
10	360	500
12	440	600
14	510	700
16	580	800
18	660	900
20	730	1000
22	800	1100
24	880	1200
26	950	1300
28	1020	1400
30	1090	1500

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

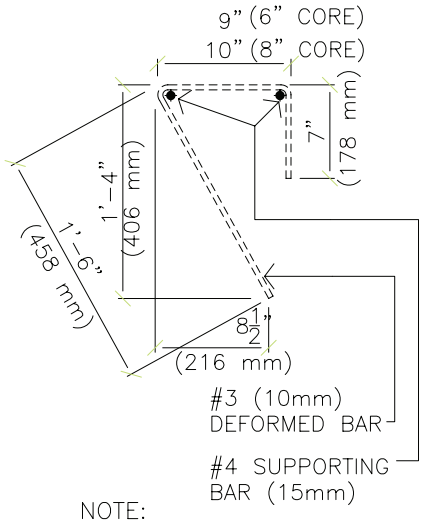
TABLE NUMBER
7-A

BUILDBLOCK© BUILDING SYSTEMS
CANADIAN ENGINEERING TABLES

METRIC STEEL / METRIC SPACING / kN/m

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

STIRRUP SPACING:
1. VENEER – 1000 lb/ft (15kN/m @ 18" (450mm)
2. VENEER – 1500 lb/ft (22kN/m @ 12" (300mm)



NOTE:
ALL BENDS PER ANSI & STEEL INSTITUTE STANDARDS
–STEEL GRADES AS SPECIFIED
– DIMENSIONS TYPICAL FOR ALL LEDGE BLOCK APPLICATIONS

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)	3½" 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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Below Grade 200mm Walls with Brick Ledges Maximum Weight of Brick Veneer (kN/m)

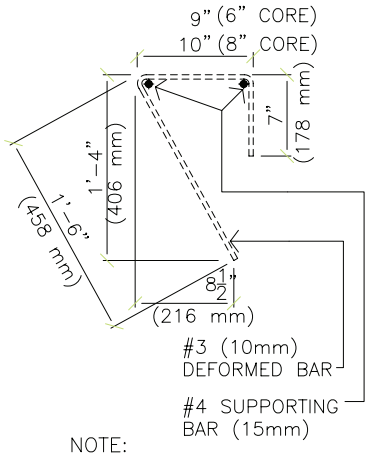
TABLE NUMBER
7-B

BUILDBLOCK© BUILDING SYSTEMS
CANADIAN ENGINEERING TABLES

IMPERIAL STEEL / IMPERIAL SPACING / lb/ft

Wall Height	Backfill Height	Vertical Reinforcement		
		#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

STIRRUP SPACING:
1. VENEER – 1000 lb/ft (15kN/m @ 18" (450mm)
2. VENEER – 1500 lb/ft (22kN/m @ 12" (300mm)



NOTE:
ALL BENDS PER ANSI & STEEL INSTITUTE STANDARDS
–STEEL GRADES AS SPECIFIED
– DIMENSIONS TYPICAL FOR ALL LEDGE BLOCK APPLICATIONS

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.

BuildBlock Building Systems Typical Veneer Weight (Lb/ft)		
Height (ft)	3½" brick	4" stone/ concrete
8	290	400
10	360	500
12	440	600
14	510	700
16	580	800
18	660	900
20	730	1000
22	800	1100
24	880	1200
26	950	1300
28	1020	1400
30	1090	1500

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

TABLE NUMBER
7-C

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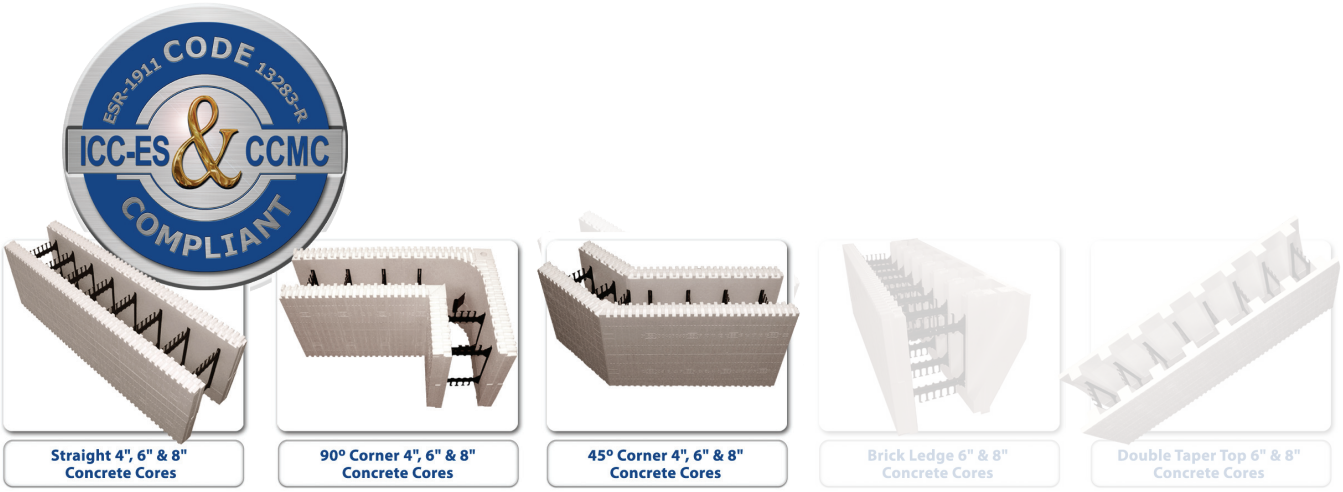
ABOVE GRADE WALL TABLES
NBC 2005 / OBC 2006
part.9

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



BUILDBLOCK© BUILDING SYSTEMS
CANADIAN ENGINEERING TABLES

METRIC STEEL / IMPERIAL SPACING

	6" & 8" Walls	
Wall Height	Vertical	Horizontal
10' Max 25% openings	10M @ 12"	10M @ 16"

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 10'
Walls exceeding these limits require engineered design

Table 8-A 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

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Reinforcement in 6" and 8" inAbove Grade Walls
NBC 2005 / OBC 2006
Subsection 9.20.17

TABLE NUMBER
8-A

BUILDBLOCK© BUILDING SYSTEMS
CANADIAN ENGINEERING TABLES

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

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Reinforcement in 6" and 8"
Above Grade Walls
NBC 2005 / OBC 2006
Subsection 9.20.17

TABLE NUMBER
8-B

BUILDBLOCK© BUILDING SYSTEMS
CANADIAN ENGINEERING TABLES

IMPERIAL STEEL / IMPERIAL SPACING

	6" & 8" Walls	
Wall Height	Vertical	Horizontal
10' Max 25% openings	#4 @ 12"	#4 @ 16"

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-C 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

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Reinforcement in 6" and 8"
Above Grade Walls
NBC 2005 / OBC 2006
Subsection 9.20.17

TABLE NUMBER
8-C

BuildBlock®
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CANADIAN ENGINEERING TAPER TOP TABLES

ESR-1911 CODE 13283-R
ICC-ES & CCMC
COMPLIANT


Straight 4", 6" & 8" Concrete Cores


90° Corner 4", 6" & 8" Concrete Cores

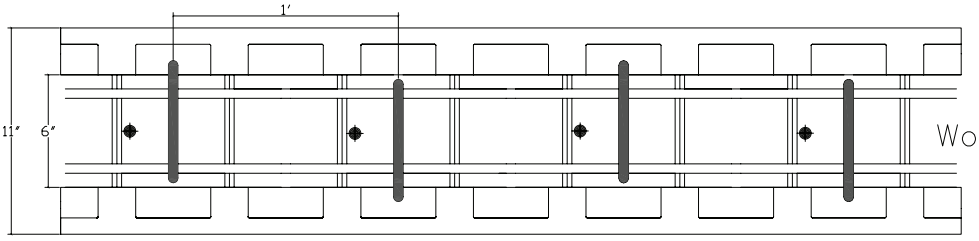
45° Corner 4", 6" & 8" Concrete Cores

Brick Ledge 6" & 8" Concrete Cores

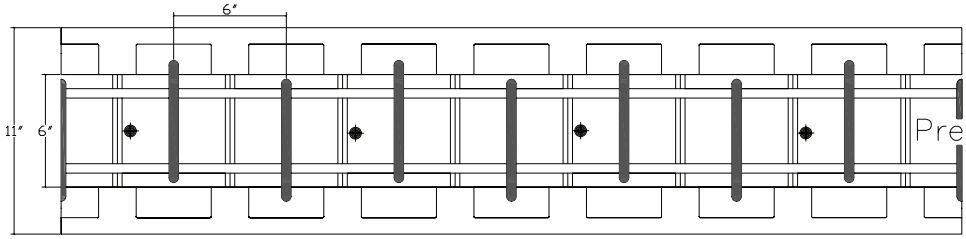

Double Taper Top 6" & 8" Concrete Cores

BUILDBLOCK© BUILDING SYSTEMS
CANADIAN ENGINEERING TABLES

TAPER TOP LOAD CAPACITIES



Wood floors

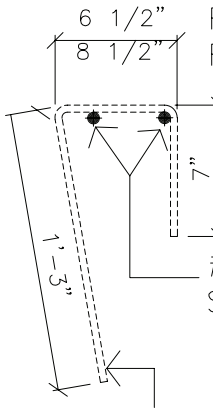


Precast floors

Wood Floors 32' (9.75M) span	
Dead	15 psf (0.72 kPa)
Live	40 psf (1.9 kPa)

Precast Floors 32' (9.75M) span	
Dead	75 psf (3.6 kPa)
Live	50 psf (2.4 kPa)

Precast Floors 24' (7.3M) span	
Dead	75 psf (3.6 kPa)
Live	100 psf (4.8 kPa)



RESPECTIVELY FOR 6" OR 8"

#4 (15M) SUPPORTING BAR

Imperial Rebar:
#3 Grade 60
or #4 Grade 40

Metric Rebar:
10m Grade 400

Notes:

75 psf dead load = 6" Hollow Core Slab + 2" Topping

Wood floors Install stirrups in alternating directions @ 12" OC

Precast floors Install stirrups in alternating directions @ 6" OC

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Taper top Reinforcement

TABLE NUMBER
9