Nexcem Inc. Table W-1a: Basement Wall Design Table - Single Storey

Wall Type	Min. Concrete Thickness (mm)	Bar Size	Vertical Reinforcing Spacing (mm, centre to centre)														
			Specified Snow Load, kPa														
			1.0			1.5			2.0			2.5			3.0		
			Unsupported Height (m)			Unsupported Height (m)			Unsupported Height (m)			Unsupported Height (m)			Unsupported Height (m)		
			2.45	3.05	3.70	2.45	3.05	3.70	2.45	3.05	3.70	2.45	3.05	3.70	2.45	3.05	3.70
8" WF, 10" WF (R-14), 12" WF (R-22), 14" WF (R-28)	120	15M	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		20M	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
10" WF, 12" WF (R-14), 14" WF (R-22)	164	15M	305	305	n/a	305	305	n/a	305	305	n/a	305	305	n/a	305	305	n/a
		20M	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
12" WF, 14" WF (R-14)	200	15M	305	305	n/a	305	305	n/a	305	305	n/a	305	305	n/a	305	305	n/a
		20M	305	305	305	305	305	305	305	305	305	305	305	305	305	305	305
14" WF (R-8)	250	15M	305	305	305	305	305	305	305	305	305	305	305	305	305	305	305
		20M	305	305	305	305	305	305	305	305	305	305	305	305	305	305	305

Nexcem Inc. Table W-1b: Basement Wall Design Table - Single Storey

Wall Type	Min. Concrete Thickness (mm)	Maximum Unsupported Height (m)															
		Specified Snow Load, kPa															
		1.0			1.5			2.0			2.5			3.0			
		Rebar and Spacing			Rebar and Spacing			Rebar and Spacing			Rebar and Spacing			Rebar and Spacing			
		10M @ 305	15M @ 305	20M @ 305	10M @ 305	15M @ 305	20M @ 305	10M @ 305	15M @ 305	20M @ 305	10M @ 305	15M @ 305	20M @ 305	10M @ 305	15M @ 305	20M @ 305	
8" WF, 10" WF (R-14), 12" WF (R-22), 14" WF (R-28)	120	1.90 m	n/a	n/a	1.90 m	n/a	n/a	1.90 m	n/a	n/a	1.90 m	n/a	n/a	1.90 m	n/a	n/a	
10" WF, 12" WF (R-14), 14" WF (R-22)	164	2.15 m	3.40 m	n/a	2.15 m	3.40 m	n/a	2.15 m	3.40 m	n/a	2.15 m	3.40 m	n/a	2.15 m	3.40 m	n/a	
12" WF, 14" WF (R-14)	200	2.45 m	3.40 m	3.70 m	2.45 m	3.40 m	3.70 m	2.45 m	3.40 m	3.70 m	2.45 m	3.40 m	3.70 m	2.45 m	3.40 m	3.70 m	
14" WF (R-8)	250	2.80 m	3.70 m	4.00 m	2.80 m	3.70 m	4.00 m	2.80 m	3.70 m	4.00 m	2.80 m	3.70 m	4.00 m	2.80 m	3.70 m	4.00 m	

Notes:

1. If an insulated block type is used that isn't listed above, for design purposes, use the block above with the equivalent concrete thickness
2. The above design table assumes a concrete strength of 25 MPa at 28 days and a reinforcing steel yield strength of 400 MPa.
3. All concrete materials and testing to conform to CSA A23.1 and A23.2 (latest revision). Reinforcing steel to be deformed bar conforming to CSA G30.18 (latest revision).
4. All walls to be reinforced horizontally with minimum 10M @ 600mm c/c.
5. The above table assumes the backfill height is equal to the unsupported wall height minus 150mm.
6. This design table is valid for a single storey residential building, assuming a roof tributary area of 7.62m (total roof truss span of 15.25m) and ground floor loading assuming residential live load of 1.9 kPa with a tributary of 3.05m (total maximum joist span of 6.1m). Dead loads are assumed to be consistent with conventional timber framed floor and roof construction.
7. This table is meant for gravity and out of plane loading only. Consult Nexcem literature for in plane load and building stability considerations.
8. Consult Nexcem typical details for added reinforcing adjacent openings in wall.
9. This design table is valid for basement walls in seismic locations where $I_E F_a S_a(0.2)$ is less than or equal to 0.35. Consult Nexcem this value is exceeded.
10. Design and construction shall be in accordance with the Ontario Building Code (latest revision).

Nexcem Inc. Table W-2a: Basement Wall Design Table - Two Storey

Wall Type	Min. Concrete Thickness (mm)	Bar Size	Vertical Reinforcing Spacing (mm, centre to centre)														
			Specified Snow Load, kPa														
			1.0			1.5			2.0			2.5			3.0		
			Unsupported Height (m)			Unsupported Height (m)			Unsupported Height (m)			Unsupported Height (m)			Unsupported Height (m)		
			2.45	3.05	3.70	2.45	3.05	3.70	2.45	3.05	3.70	2.45	3.05	3.70	2.45	3.05	3.70
8" WF, 10" WF (R-14), 12" WF (R-22), 14" WF (R-28)	120	15M	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		20M	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
10" WF, 12" WF (R-14), 14" WF (R-22)	164	15M	305	305	n/a	305	305	n/a	305	305	n/a	305	305	n/a	305	305	n/a
		20M	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
12" WF, 14" WF (R-14)	200	15M	305	305	n/a	305	305	n/a	305	305	n/a	305	305	n/a	305	305	n/a
		20M	305	305	305	305	305	305	305	305	305	305	305	305	305	305	305
14" WF (R-8)	250	15M	305	305	305	305	305	305	305	305	305	305	305	305	305	305	305
		20M	305	305	305	305	305	305	305	305	305	305	305	305	305	305	305

Nexcem Inc. Table W-2b: Basement Wall Design Table - Two Storey

Wall Type	Min. Concrete Thickness (mm)	Maximum Unsupported Height (m)															
		Specified Snow Load, kPa															
		1.0			1.5			2.0			2.5			3.0			
		Rebar and Spacing			Rebar and Spacing			Rebar and Spacing			Rebar and Spacing			Rebar and Spacing			
		10M @ 305	15M @ 305	20M @ 305	10M @ 305	15M @ 305	20M @ 305	10M @ 305	15M @ 305	20M @ 305	10M @ 305	15M @ 305	20M @ 305	10M @ 305	15M @ 305	20M @ 305	
8" WF, 10" WF (R-14), 12" WF (R-22), 14" WF (R-28)	120	1.90 m	n/a	n/a	1.90 m	n/a	n/a	1.90 m	n/a	n/a	1.90 m	n/a	n/a	1.90 m	n/a	n/a	
10" WF, 12" WF (R-14), 14" WF (R-22)	164	2.15 m	3.40 m	n/a	2.15 m	3.40 m	n/a	2.15 m	3.40 m	n/a	2.15 m	3.40 m	n/a	2.15 m	3.40 m	n/a	
12" WF, 14" WF (R-14)	200	2.45 m	3.40 m	3.70 m	2.45 m	3.40 m	3.70 m	2.45 m	3.40 m	3.70 m	2.45 m	3.40 m	3.70 m	2.45 m	3.40 m	3.70 m	
14" WF (R-8)	250	2.80 m	3.70 m	3.70 m	2.80 m	3.70 m	3.70 m	2.80 m	3.70 m	3.70 m	2.80 m	3.70 m	3.70 m	2.80 m	3.70 m	3.70 m	

Notes:

1. If an insulated block type is used that isn't listed above, for design purposes, use the block above with the equivalent concrete thickness
2. The above design table assumes a concrete strength of 25 MPa at 28 days and a reinforcing steel yield strength of 400 MPa.
3. All concrete materials and testing to conform to CSA A23.1 and A23.2 (latest revision). Reinforcing steel to be deformed bar conforming to CSA G30.18 (latest revision).
4. All walls to be reinforced horizontally with minimum 10M @ 610mm c/c.
5. The above table assumes the backfill height is equal to the unsupported wall height minus 150mm.
6. This design table is valid for a two storey residential building, assuming a roof tributary area of 7.62m (total roof truss span of 15.25m) as well as ground and second floor loading assuming residential live load of 1.9 kPa with a tributary of 3.05m (total maximum joist span of 6.1m). Dead loads are assumed to be consistent with conventional timber framed floor and roof construction.
7. This table is meant for gravity and out of plane loading only. Consult Nexcem literature for in plane load and building stability considerations.
8. Consult Nexcem typical details for added reinforcing adjacent openings in wall.
9. This design table is valid for basement walls in seismic locations where $I_E F_a S_a(0.2)$ is less than or equal to 0.35. Consult Nexcem if this value is exceeded.

Nexcem Inc. Table W-3a: Above Grade Wall Design Table - Single Storey

(To be used also for the second storey walls of a two storey house)

Wall Type	Min. Concrete Thickness (mm)	Bar Size	Vertical Reinforcing Spacing (mm, centre to centre)														
			Specified Snow Load, kPa														
			1.0			1.5			2.0			2.5			3.0		
			Unsupported Height (m)			Unsupported Height (m)			Unsupported Height (m)			Unsupported Height (m)			Unsupported Height (m)		
			2.44	4.57	6.10	2.44	4.57	6.00	2.44	4.57	6.10	2.44	4.57	6.10	2.44	4.57	6.10
8" WF, 10" WF (R-14), 12" WF (R-22), 14" WF (R-28)	120	10M	305	n/a	n/a	305	n/a	n/a	305	n/a	n/a	305	n/a	n/a	305	n/a	n/a
		15M	610	n/a	n/a	610	n/a	n/a	610	n/a	n/a	610	n/a	n/a	610	n/a	n/a
10" WF, 12" WF (R-14), 14" WF (R-22)	164	10M	305	305	n/a	305	305	n/a	305	305	n/a	305	305	n/a	305	305	n/a
		15M	610	610	n/a	610	610	n/a	610	610	n/a	610	610	n/a	610	610	n/a
12" WF, 14" WF (R-14)	200	10M	305	305	305	305	305	305	305	305	305	305	305	n/a	305	305	n/a
		15M	610	610	610	610	610	610	610	610	610	610	610	305	610	610	305
14" WF (R-8)	250	10M	305	305	305	305	305	305	305	305	305	305	305	305	305	305	305
		15M	610	610	610	610	610	610	610	610	610	610	610	610	610	610	610

Nexcem Inc. Table W-3b: Above Grade Wall Design Table - Single Storey

Wall Type	Min. Concrete Thickness (mm)	Maximum Unsupported Height (m)														
		Specified Snow Load, kPa														
		1.0			1.5			2.0			2.5			3.0		
		Rebar and Spacing			Rebar and Spacing			Rebar and Spacing			Rebar and Spacing			Rebar and Spacing		
		10M @ 305	15M @ 610	15M @ 305	10M @ 305	15M @ 610	15M @ 305	10M @ 305	15M @ 610	15M @ 305	10M @ 305	15M @ 610	15M @ 305	10M @ 305	15M @ 610	15M @ 305
8" WF, 10" WF (R-14), 12" WF (R-22), 14" WF (R-28)	120	3.70 m	3.70 m	4.00 m	3.70 m	3.70 m	3.70 m	3.70 m	3.70 m	3.70 m	3.40	3.40	3.70 m	3.10 m	3.10 m	3.70 m
10" WF, 12" WF (R-14), 14" WF (R-22)	164	4.90 m	4.90 m	4.90 m	4.90 m	4.90 m	4.90 m	4.90 m	4.90 m	4.90 m	4.90 m	4.90 m	4.90 m	4.60 m	4.60 m	4.90 m
12" WF, 14" WF (R-14)	200	6.10 m	6.10 m	6.10 m	5.80 m	5.80 m	6.10 m	5.50 m	5.50 m	6.10 m	5.50 m	5.50 m	6.10 m	5.50 m	5.50 m	6.10 m
14" WF (R-8)	250	6.75 m	6.75 m	7.65 m	6.75 m	6.75 m	7.65 m	6.10 m	6.10 m	7.65 m	6.10 m	6.10 m	7.65 m	6.10 m	6.10 m	7.65 m

Notes:

1. If an insulated block type is used that isn't listed above, for design purposes, use the block above with the equivalent concrete thickness
2. The above design table assumes a concrete strength of 25 MPa at 28 days and a reinforcing steel yield strength of 400 MPa.
3. All concrete materials and testing to conform to CSA A23.1 and A23.2 (latest revision). Reinforcing steel to be deformed bar conforming to CSA G30.18 (latest revision).
4. All walls to be reinforced horizontally with minimum 10M @ 600mm c/c.
5. This design table is valid for a single storey residential building, assuming a roof tributary area of 7.62m (total roof truss span of 15.25m) . Dead load is assumed to be consistent with conventional timber framed roof construction.
6. This table is meant for gravity and out of plane loading only. Consult Nexcem literature for in plane load and building stability considerations.
7. Consult Nexcem typical details for added reinforcing adjacent openings in wall.
8. This design is acceptable for areas in Canada where wind pressure, q 1/50 does not exceed 0.8 kPa as well as for all seismic areas in Canada.
9. Design and construction shall be in accordance with the Ontario Building Code (latest revision).

Nexcem Inc. Table W-4a: Above Grade Wall Design Table - Two Storey

(To be used for the first storey walls of a two storey house)

Wall Type	Min. Concrete Thickness (mm)	Bar Size	Vertical Reinforcing Spacing (mm, centre to centre)														
			Specified Snow Load, kPa														
			1.0			1.5			2.0			2.5			3.0		
			Unsupported Height (m)			Unsupported Height (m)			Unsupported Height (m)			Unsupported Height (m)			Unsupported Height (m)		
			2.44	4.57	6.10	2.44	4.57	6.10	2.44	4.57	6.10	2.44	4.57	6.10	2.44	4.57	6.10
8" WF, 10" WF (R-14), 12" WF (R-22), 14" WF (R-28)	120	10M	305	n/a	n/a	305	n/a	n/a	305	n/a	n/a	305	n/a	n/a	305	n/a	n/a
		15M	610	n/a	n/a	610	n/a	n/a	610	n/a	n/a	610	n/a	n/a	610	n/a	n/a
10" WF, 12" WF (R-14), 14" WF (R-22)	164	10M	305	305	n/a	305	305	n/a	305	n/a	n/a	305	n/a	n/a	305	n/a	n/a
		15M	610	610	n/a	610	610	n/a	610	305	n/a	610	305	n/a	610	305	n/a
12" WF, 14" WF (R-14)	200	10M	305	305	305	305	305	305	305	305	305	305	305	n/a	305	n/a	n/a
		15M	610	610	610	610	610	610	610	610	610	610	610	305	610	305	305
14" WF (R-8)	250	10M	305	305	305	305	305	305	305	305	305	305	305	305	305	305	305
		15M	610	610	610	610	610	610	610	610	610	610	610	610	610	610	610

Nexcem Inc. Table W-4b: Above Grade Wall Design Table - Two Storey

Wall Type	Min. Concrete Thickness (mm)	Maximum Unsupported Height (m)														
		Specified Snow Load, kPa														
		1.0			1.5			2.0			2.5			3.0		
		Rebar and Spacing			Rebar and Spacing			Rebar and Spacing			Rebar and Spacing			Rebar and Spacing		
		10M @ 305	15M @ 610	15M @ 305	10M @ 305	15M @ 610	15M @ 305	10M @ 305	15M @ 610	15M @ 305	10M @ 305	15M @ 610	15M @ 305	10M @ 305	15M @ 610	15M @ 305
8" WF, 10" WF (R-14), 12" WF (R-22), 14" WF (R-28)	120	3.70 m	3.70 m	3.70 m	3.40 m	3.40 m	3.70 m	3.10 m	3.10 m	3.70 m	2.80 m	2.80 m	3.70 m	2.45 m	2.45 m	3.70 m
10" WF, 12" WF (R-14), 14" WF (R-22)	164	4.90 m	4.90 m	4.90 m	4.60 m	4.60 m	4.90 m	4.00 m	4.00 m	4.90 m	4.00 m	4.00 m	4.90 m	3.70 m	3.70 m	4.90 m
12" WF, 14" WF (R-14)	200	5.80 m	5.80 m	6.10 m	5.20 m	5.20 m	6.10 m	4.90 m	4.90 m	6.10 m	4.60 m	4.60 m	6.10 m	4.30 m	4.30 m	6.10 m
14" WF (R-8)	250	6.75 m	6.75 m	7.65 m	6.40 m	6.40 m	7.65 m	6.10 m	6.10 m	7.65 m	5.50 m	5.50 m	7.65 m	5.50 m	5.50 m	7.65 m

Notes:

1. If an insulated block type is used that isn't listed above, for design purposes, use the block above with the equivalent concrete thickness
2. The above design table assumes a concrete strength of 25 MPa at 28 days and a reinforcing steel yield strength of 400 MPa.
3. All concrete materials and testing to conform to CSA A23.1 and A23.2 (latest revision). Reinforcing steel to be deformed bar conforming to CSA G30.18 (latest revision).
4. All walls to be reinforced horizontally with minimum 10M @ 600mm c/c.
5. This design table is meant for the first storey walls of a two storey residential building, assuming a roof tributary area of 7.62m (total roof truss span of 15.25m) as well as second floor loading assuming residential live load of 1.9 kPa with a tributary area of 3.05m (total max. joist span of 6.1m). Dead loads to be consistent with conventional timber framed floor and roof construction.
6. This table is meant for gravity and out of plane loading only. Consult Nexcem literature for in plane load and building stability considerations.
7. Consult Nexcem typical details for added reinforcing adjacent openings in wall.
8. This design is acceptable for areas in Canada where wind pressure, q 1/50 does not exceed 0.8 kPa as well as for all seismic areas in Canada.
9. Design and construction shall be in accordance with the Ontario Building Code (latest revision).