

# BUILDBLOCK BUILDING SYSTEMS GLOBALBLOCK ENGINEERING TABLES

## GlobalBlock 300 High Wind Load Reinforcement Requirements 1 Story Structure

Wall Height	Wind Speed - Exposure Category B											
	100 mph		120 mph		140 mph		160 mph		180 mph		200 mph	
	Vasd = 77 mph		Vasd = 93 mph		Vasd = 108 mph		Vasd = 124 mph		Vasd = 139 mph		Vasd = 155 mph	
	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal
8'	#4 @ 12"	#3 @ 16"	#4 @ 12"	#3 @ 16"	#4 @ 12"	#3 @ 16"	-	-	-	-	-	-
10'	-	-	-	-	-	-	-	-	-	-	-	-
12'	-	-	-	-	-	-	-	-	-	-	-	-

Wall Height	WIND SPEED - EXPOSURE CATEGORY C											
	100 mph		120 mph		140 mph		160 mph		180 mph		200 mph	
	Vasd = 77 mph		Vasd = 93 mph		Vasd = 108 mph		Vasd = 124 mph		Vasd = 139 mph		Vasd = 155 mph	
	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal
8'	#4 @ 12"	#3 @ 16"	#4 @ 12"	#3 @ 16"	#4 @ 12"	#3 @ 16"	-	-	-	-	-	-
10'	-	-	-	-	-	-	-	-	-	-	-	-
12'	-	-	-	-	-	-	-	-	-	-	-	-

**ASSUMPTIONS:**

Dead load = 25 psf.  
 Live floor load = 40 psf.  
 Live roof load = 20 psf.  
 No snow load.  
 No seismic load.  
 Maximum clear span for floor trusses is 24'-0".  
 Maximum clear span for roof trusses is 40'-0".  
 Maximum mean roof height is 30'-0".  
 Maximum (1) stories.  
 Concrete strength:  $f'_c = 3,000$  psi  
 Reinforcement steel strength:  $f_y = 60,000$  psi

	 <p><b>BUILDBLOCK BUILDING SYSTEMS, LLC</b>                  9705 N. Broadway Extension, Suite 200, Oklahoma City, OK 73114                  Office: 405-840-3386   Toll Free: 866-222-2575   Fax: 831-597-0792                  buildblock.com   store.buildblock.com</p>	<p><b>TABLE NUMBER</b> <b>10-A</b></p>
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# BUILDBLOCK BUILDING SYSTEMS GLOBALBLOCK ENGINEERING TABLES

## GLOBALBLOCK 400 High Wind Load Reinforcement Requirements 1 Story Structure

Wall Height	WIND SPEED - EXPOSURE CATEGORY B											
	100 mph		120 mph		140 mph		160 mph		180 mph		200 mph	
	Vasd = 77 mph		Vasd = 93 mph		Vasd = 108 mph		Vasd = 124 mph		Vasd = 139 mph		Vasd = 155 mph	
	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal
8'	#4 @ 24"	#3 @ 16"	#4 @ 24"	#3 @ 16"	#4 @ 24"	#3 @ 16"	#4 @ 24"	#3 @ 16"	#4 @ 24"	#3 @ 16"	#4 @ 24"	#3 @ 16"
10'	#4 @ 12"	#3 @ 16"	#4 @ 12"	#3 @ 16"	#4 @ 12"	#3 @ 16"	#4 @ 12"	#3 @ 16"	#4 @ 12"	#3 @ 16"	#4 @ 12"	#3 @ 16"
12'	-	-	-	-	-	-	-	-	-	-	-	-

Wall Height	WIND SPEED - EXPOSURE CATEGORY C											
	100 mph		120 mph		140 mph		160 mph		180 mph		200 mph	
	Vasd = 77 mph		Vasd = 93 mph		Vasd = 108 mph		Vasd = 124 mph		Vasd = 139 mph		Vasd = 155 mph	
	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal
8'	#4 @ 24"	#3 @ 16"	#4 @ 24"	#3 @ 16"	#4 @ 24"	#3 @ 16"	#4 @ 24"	#3 @ 16"	#4 @ 24"	#3 @ 16"	#4 @ 24"	#3 @ 16"
10'	#4 @ 12"	#3 @ 16"	#4 @ 12"	#3 @ 16"	#4 @ 12"	#3 @ 16"	#4 @ 12"	#3 @ 16"	#4 @ 12"	#3 @ 16"	#4 @ 12"	#3 @ 16"
12'	-	-	-	-	-	-	-	-	-	-	-	-

**ASSUMPTIONS:**

- Dead load = 25 psf.
- Live floor load = 40 psf.
- Live roof load = 20 psf.
- No snow load.
- No seismic load.
- Maximum clear span for floor trusses is 24'-0".
- Maximum clear span for roof trusses is 40'-0".
- Maximum mean roof height is 30'-0".
- Maximum (1) stories.
- Concrete strength:  $f'c = 3,000$  psi
- Reinforcement steel strength:  $f_y = 60,000$  psi

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# BUILDBLOCK BUILDING SYSTEMS GLOBALBLOCK ENGINEERING TABLES

## GLOBALBLOCK 400 High Wind Load Reinforcement Requirements 2 Story Structure

Wall Height	WIND SPEED - EXPOSURE CATEGORY B											
	100 mph		120 mph		140 mph		160 mph		180 mph		200 mph	
	Vasd = 77 mph		Vasd = 93 mph		Vasd = 108 mph		Vasd = 124 mph		Vasd = 139 mph		Vasd = 155 mph	
	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal
8'	#4 @ 12"	#3 @ 16"	#4 @ 12"	#3 @ 16"	#4 @ 12"	#3 @ 16"	#4 @ 12"	#3 @ 16"	#4 @ 12"	#3 @ 16"	#4 @ 12"	#3 @ 16"
10'	-	-	-	-	-	-	-	-	-	-	-	-
12'	-	-	-	-	-	-	-	-	-	-	-	-

Wall Height	WIND SPEED - EXPOSURE CATEGORY C											
	100 mph		120 mph		140 mph		160 mph		180 mph		200 mph	
	Vasd = 77 mph		Vasd = 93 mph		Vasd = 108 mph		Vasd = 124 mph		Vasd = 139 mph		Vasd = 155 mph	
	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal
8'	#4 @ 12"	#3 @ 16"	#4 @ 12"	#3 @ 16"	#4 @ 12"	#3 @ 16"	#5 @ 12"	#3 @ 16"	-	-	-	-
10'	-	-	-	-	-	-	-	-	-	-	-	-
12'	-	-	-	-	-	-	-	-	-	-	-	-

**ASSUMPTIONS:**

- Dead load = 25 psf.
- Live floor load = 40 psf.
- Live roof load = 20 psf.
- No snow load.
- No seismic load.
- Maximum clear span for floor trusses is 24'-0".
- Maximum clear span for roof trusses is 40'-0".
- Maximum mean roof height is 30'-0".
- Maximum (2) stories.
- Concrete strength:  $f'_c = 3,000$  psi
- Reinforcement steel strength:  $f_y = 60,000$  psi

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# BUILDBLOCK BUILDING SYSTEMS GLOBALBLOCK ENGINEERING TABLES

## GLOBALBLOCK 600 High Wind Load Reinforcement Requirements 2 Story Structure

Wall Height	WIND SPEED - EXPOSURE CATEGORY C											
	100 mph		120 mph		140 mph		160 mph		180 mph		200 mph	
	Vasd = 77 mph		Vasd = 93 mph		Vasd = 108 mph		Vasd = 124 mph		Vasd = 139 mph		Vasd = 155 mph	
	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal
8'	#4 @ 24"	#3 @ 16"	#4 @ 24"	#3 @ 16"	#4 @ 24"	#3 @ 16"	#4 @ 24"	#3 @ 16"	#4 @ 24"	#3 @ 16"	#4 @ 24"	#3 @ 16"
10'	#4 @ 12"	#3 @ 16"	#4 @ 12"	#3 @ 16"	#4 @ 12"	#3 @ 16"	#4 @ 12"	#3 @ 16"	#4 @ 12"	#3 @ 16"	#4 @ 12"	#3 @ 16"
12'	#4 @ 12"	#3 @ 16"	#4 @ 12"	#3 @ 16"	#4 @ 12"	#3 @ 16"	#4 @ 12"	#3 @ 16"	#4 @ 12"	#3 @ 16"	#4 @ 12"	#3 @ 16"

**ASSUMPTIONS:**

Dead load = 25 psf.  
 Live floor load = 40 psf.  
 Live roof load = 20 psf.  
 No snow load.  
 No seismic load.  
 Maximum clear span for floor trusses is 24'-0".  
 Maximum clear span for roof trusses is 40'-0".  
 Maximum mean roof height is 30'-0".  
 Maximum (2) stories.  
 Concrete strength:  $f'c = 3,000$  psi  
 Reinforcement steel strength:  $f_y = 60,000$  psi

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# BUILDBLOCK BUILDING SYSTEMS GLOBALBLOCK ENGINEERING TABLES

## GLOBALBLOCK 800 High Wind Load Reinforcement Requirements 2 Story Structure

Wall Height	WIND SPEED - EXPOSURE CATEGORY C											
	100 mph		120 mph		140 mph		160 mph		180 mph		200 mph	
	Vasd = 77 mph		Vasd = 93 mph		Vasd = 108 mph		Vasd = 124 mph		Vasd = 139 mph		Vasd = 155 mph	
	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal
8'	#4 @ 48"	#3 @ 16"	#4 @ 48"	#3 @ 16"	#4 @ 48"	#3 @ 16"	#4 @ 36"	#3 @ 16"	#4 @ 36"	#3 @ 16"	#4 @ 36"	#3 @ 16"
10'	#4 @ 48"	#3 @ 16"	#4 @ 48"	#3 @ 16"	#4 @ 36"	#3 @ 16"	#4 @ 36"	#3 @ 16"	#4 @ 36"	#3 @ 16"	#4 @ 36"	#3 @ 16"
12'	#4 @ 48"	#3 @ 16"	#4 @ 36"	#3 @ 16"	#4 @ 36"	#3 @ 16"	#4 @ 24"	#3 @ 16"	#4 @ 24"	#3 @ 16"	#4 @ 24"	#3 @ 16"

**ASSUMPTIONS:**

Dead load = 25 psf.  
 Live floor load = 40 psf.  
 Live roof load = 20 psf.  
 No snow load.  
 No seismic load.  
 Maximum clear span for floor trusses is 24'-0".  
 Maximum clear span for roof trusses is 40'-0".  
 Maximum mean roof height is 30'-0".  
 Maximum (2) stories.  
 Concrete strength:  $f'c = 3,000$  psi  
 Reinforcement steel strength:  $f_y = 60,000$  psi

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# BUILDBLOCK BUILDING SYSTEMS GLOBALBLOCK ENGINEERING TABLES

## 6" GLOBALBLOCK SCREEN GRID FORM 8-Foot High Basement Wall Vertical (Grade 60) Rebar Requirements\*

UNBALANCED BACKFILL DEPTH	BACKFILL EQUIVALENT FLUID DENSITY		
	30 PCF	45 PCF	60 PCF
5 ft.	#3@12";#4@36"; #5@48"	#3@12";#4@24"; #5@36';#6@48"	#4@12";#5@24" ;#6@24"
5.5 ft.	#3@12"; #4@24"; #5@36";#6@48"	#3@12";#4@24"; #5@36';#6@48"	#4@12";#5@12" ;#6@24"
6 ft.	#3@12"; #4@24"; #5@24";#6@36"	#4@12';@5@24" ;#6@36"	#4@12";#5@12" ;#6@12"
6.5 ft.	#3@12"; #4@12"; #5@24";#6@24"	#4@12';@5@12" ;#6@24"	#5@12" ;#6@12"
7 ft.	#4@12"; #5@24";#6@24"	#5@12" ;#6@12"	#5@12" ;#6@12"
7.5 ft.	#4@12"; #5@12";#6@24"	#5@12" ;#6@12"	#6 @ 12" (fc=3,000 psi)
8 ft.	#4@12"; #5@12";#6@24"	#5@12" ;#6@12"	#6 @ 12" (fc=3,000 psi)

### \*MINIMUM REBAR REQUIREMENTS

- If the basement wall is NOT supporting an above grade wall in Seismic Design areas: Vertical rebar size and spacing per table above. Minimum horizontal rebar is #4@32" o.c.
- Vertical rebar size and spacing shall match the above grade all reinforcement if more restrictive.

### NOTES

1. This table is based on the design criteria of ACI 318-08 "Building Code Requirements for Structural Concrete"
2. The reinforcement requirements listed in this table are based on Grade 60 (ASTM A 615 or ASTM A 996) rebar and 2,500 psi concrete
3. This table assumes the vertical rebar is placed in the center of the 11" thick GlobalBlock wall (D=4.625), unless otherwise noted with an offset dimension ("d") measured from the outside edge of form (backfill side of the wall.)
4. The basement floor must be poured and the first floor in place before the backfilling.
5. The floor or roof system supporting the top of the basement wall and the connection to the top of the basement wall, must be specifically designed to provide the necessary strength to resist the horizontal reaction or force developed at the top of the basement wall by the lateral loads exerted on the wall by the backfill.
6. Concrete must cure a minimum of 7 days before backfilling.
7. Backfill should be well drained.
8. Refer to the BuildBlock Installation Manual for proper basement drainage and waterproofing systems.

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# BUILDBLOCK BUILDING SYSTEMS GLOBALBLOCK ENGINEERING TABLES

## 6" GLOBALBLOCK SCREEN GRID FORM 9-Foot High Basement Wall Vertical (Grade 60) Rebar Requirements\*

UNBALANCED BACKFILL DEPTH	BACKFILL EQUIVALENT FLUID DENSITY		
	30 PCF	45 PCF	60 PCF
5 ft.	#3@12";#4@24"; #5@36"; #6@48"	#4@12"; #5@24";#6@36"	#4@12";#5@24" ;#6@24"
5.5 ft.	#3@12";#4@24"; #5@36"; #6@48"	#4@12"; #5@24";#6@36"	#4@12";#5@12" ;#6@24"
6 ft.	#3@12"; #4@12"; #5@24";#6@36"	#4@12";@5@24" ;#6@24"	#5@12" ;#6@12"
6.5 ft.	#4@12"; #5@24";#6@24"	#4@12";@5@12" ;#6@24"	#5@12" ;#6@12"
7 ft.	#4@12"; #5@12";#6@24"	#5@12" ;#6@12"	#6 @ 12" (fc=3,000 psi)
7.5 ft.	#4@12"; #5@12";#6@24"	#5@12" ;#6@12"	#6 @ 12" (fc=3,000 psi)
8 ft.	#5@12";#6@12"	#6 @ 12" (fc=3,000 psi)	#5@12"(d=6.25") (fc=3,000 psi)
8.5 ft.	#5@12";#6@12"	#6 @ 12" (fc=3,000 psi)	#5@12"(d=6.25") (fc=3,000 psi)
9 ft.	#5@12";#6@12"	#5@12" (d=6.25") (fc=3,000 psi)	#5@12"(d=6.25") (fc=3,000 psi)

**\*MINIMUM REBAR REQUIREMENTS**

- If the basement wall is NOT supporting an above grade wall in Seismic Design areas: Vertical rebar size and spacing per table above. Minimum horizontal rebar is #4@32" o.c.
- Vertical rebar size and spacing shall match the above grade all reinforcement if more restrictive.

**NOTES**

1. This table is based on the design criteria of ACI 318-08 "Building Code Requirements for Structural Concrete"
2. The reinforcement requirements listed in this table are based on Grade 60 (ASTM A 615 or ASTM A 996) rebar and 2,500 psi concrete
3. This table assumes the vertical rebar is placed in the center of the 11" thick GlobalBlock wall (D=4.625), unless otherwise noted with an offset dimension ("d") measured from the outside edge of form (backfill side of the wall.)
4. The basement floor must be poured and the first floor in place before the backfilling.
5. The floor or roof system supporting the top of the basement wall and the connection to the top of the basement wall, must be specifically designed to provide the necessary strength to resist the horizontal reaction or force developed at the top of the basement wall by the lateral loads exerted on the wall by the backfill.
6. Concrete must cure a minimum of 7 days before backfilling.
7. Backfill should be well drained.
8. Refer to the BuildBlock Installation Manual for proper basement drainage and waterproofing systems.

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# BUILDBLOCK BUILDING SYSTEMS GLOBALBLOCK ENGINEERING TABLES

## 6" GLOBALBLOCK SCREEN GRID FORM 10-Foot High Basement Wall Vertical (Grade 60) Rebar Requirements\*

UNBALANCED BACKFILL DEPTH	BACKFILL EQUIVALENT FLUID DENSITY		
	30 PCF	45 PCF	60 PCF
5 ft.	#3@12"; #4@24"; #5@36";#6@48"	#3@12";#4@24"; #5@36";#6@48"	#4@12";#5@12" ;#6@24"
5.5 ft.	#3@12"; #4@24"; #5@36";#6@48"	#4@12"; #5@24";#6@36"	#4@12";#5@12" ;#6@24"
6 ft.	#3@12"; #4@12"; #5@24";#6@36"	#4@12";@5@12" ;#6@24"	#5@12" ;#6@12"
6.5 ft.	#4@12"; #5@24";#6@24"	#5@12" ;#6@12"	#5@12" ;#6@12"
7 ft.	#4@12"; #5@12";#6@24"	#5@12" ;#6@12"	#6 @ 12" (fc=3,000 psi)
7.5 ft.	#4@12"; #5@12";#6@12"	#5@12";#6@12" (fc=3,000 psi)	#5@12"(d=6.25") (fc=3,000 psi)
8 ft.	#5@12" ;#6@12"	#6 @ 12" (fc=3,000 psi)	#5@12"(d=6.25") (fc=3,000 psi)
8.5 ft.	#5@12" ;#6@12"	#5@12" (d=6.25") (fc=3,000 psi)	#5@12"(d=6.25") (fc=3,000 psi)
9 ft.	#6@12"	#5@12" (d=6.25") (fc=3,000 psi)	#6@12"(d=6.25") (fc=3,000 psi)
9.5 ft.	#6@12"	#5@12" (d=6.25") (fc=3,000 psi)	#6@12"(d=6.25") (fc=3,000 psi)
10 ft.	#6@12"	#5@12" (d=6.25") (fc=3,000 psi)	#6@12"(d=6.25") (fc=3,000 psi)

### \*MINIMUM REBAR REQUIREMENTS

- If the basement wall is NOT supporting an above grade wall in Seismic Design areas: Vertical rebar size and spacing per table above. Minimum horizontal rebar is #4@32" o.c.
- Vertical rebar size and spacing shall match the above grade all reinforcement if more restrictive.

### NOTES

1. This table is based on the design criteria of ACI 318-08 "Building Code Requirements for Structural Concrete"
2. The reinforcement requirements listed in this table are based on Grade 60 (ASTM A 615 or ASTM A 996) rebar and 2,500 psi concrete
3. This table assumes the vertical rebar is placed in the center of the 11" thick GlobalBlock wall (D=4.625), unless otherwise noted with an offset dimension ("d") measured from the outside edge of form (backfill side of the wall.)
4. The basement floor must be poured and the first floor in place before the backfilling.
5. The floor or roof system supporting the top of the basement wall and the connection to the top of the basement wall, must be specifically designed to provide the necessary strength to resist the horizontal reaction or force developed at the top of the basement wall by the lateral loads exerted on the wall by the backfill.
6. Concrete must cure a minimum of 7 days before backfilling.
7. Backfill should be well drained.
8. Refer to the BuildBlock Installation Manual for proper basement drainage and waterproofing systems.

 <p><b>MCLaren</b> REGISTERED ENGINEER</p>	 <p><b>BUILDBLOCK BUILDING SYSTEMS, LLC</b> 9705 N. Broadway Extension, Suite 200, Oklahoma City, OK 73114 Office: 405-840-3386   Toll Free: 866-222-2575   Fax: 831-597-0792 buildblock.com   store.buildblock.com</p>	<p><b>TABLE NUMBER</b></p> <h1 style="font-size: 2em;">11-C</h1>
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# BUILDBLOCK BUILDING SYSTEMS GLOBALBLOCK ENGINEERING TABLES

## 8" GLOBALBLOCK SCREEN GRID FORM 8-Foot High Basement Wall Vertical (Grade 60) Rebar Requirements\*

UNBALANCED BACKFILL DEPTH	BACKFILL EQUIVALENT FLUID DENSITY		
	30 PCF	45 PCF	60 PCF
5 ft.	#3@24"; #4@36"; #5@48"	#3@12";#4@24"; #5@36";#6@48"	#4@12";#5@24" ;#6@36"
5.5 ft.	#3@12"; #4@24"; #5@36";#6@48"	#3@12";#4@24"; #5@36";#6@48"	#4@12";#5@24" ;#6@24"
6 ft.	#3@12"; #4@24"; #5@36";#6@48"	#4@12";@5@24" ;#6@36"	#4@12";#5@12" ;#6@24"
6.5 ft.	#3@12"; #4@12"; #5@24";#6@36"	#4@12";@5@24" ;#6@24"	#5@12" ;#6@12"
7 ft.	#4@12"; #5@24";#6@36"	#4@12";@5@12" ;#6@24"	#5@12" ;#6@12"
7.5 ft.	#4@12"; #5@24";#6@24"	#5@12" ;#6@24"	#5@12" ;#6@12"
8 ft.	#4@12"; #5@12";#6@24"	#5@12" ;#6@12"	#6@12"

**\*MINIMUM REBAR REQUIREMENTS**

- If the basement wall is NOT supporting an above grade wall in Seismic Design areas: Vertical rebar size and spacing per table above. Minimum horizontal rebar is #4@32" o.c.
- Vertical rebar size and spacing shall match the above grade all reinforcement if more restrictive.

**NOTES**

1. This table is based on the design criteria of ACI 318-08 "Building Code Requirements for Structural Concrete"
2. The reinforcement requirements listed in this table are based on Grade 60 (ASTM A 615 or ASTM A 996) rebar and 2,500 psi concrete
3. This table assumes the vertical rebar is placed in the center of the 11" thick GlobalBlock wall (D=4.625), unless otherwise noted with an offset dimension ("d") measured from the outside edge of form (backfill side of the wall.)
4. The basement floor must be poured and the first floor in place before the backfilling.
5. The floor or roof system supporting the top of the basement wall and the connection to the top of the basement wall, must be specifically designed to provide the necessary strength to resist the horizontal reaction or force developed at the top of the basement wall by the lateral loads exerted on the wall by the backfill.
6. Concrete must cure a minimum of 7 days before backfilling.
7. Backfill should be well drained.
8. Refer to the BuildBlock Installation Manual for proper basement drainage and waterproofing systems.

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# BUILDBLOCK BUILDING SYSTEMS GLOBALBLOCK ENGINEERING TABLES

## 8" GLOBALBLOCK SCREEN GRID FORM 9-Foot High Basement Wall Vertical (Grade 60) Rebar Requirements\*

UNBALANCED BACKFILL DEPTH	BACKFILL EQUIVALENT FLUID DENSITY		
	30 PCF	45 PCF	60 PCF
5 ft.	#3@24"; #4@48"	#3@12"; #4@36"; #5@48"	#3@12"; #4@24"; #5@36"; #6@48"
5.5 ft.	#3@24"; #4@36"; #5@48"	#3@12"; #4@24"; #5@36"; #6@48"	#3@12"; #4@12"; #5@24"; #6@36"
6 ft.	#3@12"; #4@24"; #5@48"	#3@12"; #4@24"; #5@36"; #6@48"	#4@12"; #5@24"; #6@24"
6.5 ft.	#3@12"; #4@24"; #5@36"; #6@48"	#4@12"; #5@24"; #6@36"	#4@12"; #5@12"; #6@24"
7 ft.	#3@12"; #4@24"; #5@36"; #6@36"	#4@12"; #5@24"; #6@24"	#4@12"; #5@12"; #6@12"
7.5 ft.	#3@12"; #4@12"; #5@24"; #6@36"	#4@12"; #5@12"; #6@24"	#5@12"; #6@12"
8 ft.	#4@12"; #5@24"; #6@24"	#4@12"; #5@12"; #6@24"	#5@12"; #6@12"
8.5 ft.	#4@12"; #5@12"; #6@24"	#5@12"; #6@12"	#6@12"
9 ft.	#4@12"; #5@12"; #6@24"	#5@12"; #6@12"	#6@12"

**\*MINIMUM REBAR REQUIREMENTS**

- If the basement wall is NOT supporting an above grade wall in Seismic Design areas: Vertical rebar size and spacing per table above. Minimum horizontal rebar is #4@32" o.c.
- Vertical rebar size and spacing shall match the above grade all reinforcement if more restrictive.

**NOTES**

1. This table is based on the design criteria of ACI 318-08 "Building Code Requirements for Structural Concrete"
2. The reinforcement requirements listed in this table are based on Grade 60 (ASTM A 615 or ASTM A 996) rebar and 2,500 psi concrete
3. This table assumes the vertical rebar is placed in the center of the 11" thick GlobalBlock wall (D=4.625), unless otherwise noted with an offset dimension ("d") measured from the outside edge of form (backfill side of the wall.)
4. The basement floor must be poured and the first floor in place before the backfilling.
5. The floor or roof system supporting the top of the basement wall and the connection to the top of the basement wall, must be specifically designed to provide the necessary strength to resist the horizontal reaction or force developed at the top of the basement wall by the lateral loads exerted on the wall by the backfill.
6. Concrete must cure a minimum of 7 days before backfilling.
7. Backfill should be well drained.
8. Refer to the BuildBlock Installation Manual for proper basement drainage and waterproofing systems.

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# BUILDBLOCK BUILDING SYSTEMS GLOBALBLOCK ENGINEERING TABLES

## 8" GLOBALBLOCK SCREEN GRID FORM 10-Foot High Basement Wall Vertical (Grade 60) Rebar Requirements\*

UNBALANCED BACKFILL DEPTH	BACKFILL EQUIVALENT FLUID DENSITY		
	30 PCF	45 PCF	60 PCF
5 ft.	#3@24"; #4@48"	#3@12";#4@36"; #5@48"	#3@12";#4@24"; #5@36";#6@48"
5.5 ft.	#3@24"; #4@36";#5@48"	#3@12";#4@24"; #5@36";#6@48"	#4@12";#5@24"; #6@36"
6 ft.	#3@12"; #4@24"; #5@36";#6@48"	#3@12";#4@24"; #5@36";#6@36"	#4@12";#5@24"; #6@24"
6.5 ft.	#3@12"; #4@24"; #5@36";#6@48"	#4@12"; #5@24";#6@36"	#4@12";#5@12"; #6@24"
7 ft.	#3@12"; #4@12"; #5@24";#6@36"	#4@12"; #5@24";#6@24"	#5@12";#6@12"
7.5 ft.	#4@12"; #5@24";#6@36"	#4@12"; #5@12";#6@24"	#5@12";#6@12"
8 ft.	#4@12"; #5@24";#6@24"	#5@12";#6@12"	#5@12";#6@12"
8.5 ft.	#4@12"; #5@12";#6@24"	#5@12";#6@12"	#6@12"
9 ft.	#4@12"; #5@12";#6@24"	#5@12";#6@12"	#6@12"
9.5 ft.	#5@12";#6@12"	#6@12"	#5@12" (d=8")
10 ft.	#5@12";#6@12"	#6@12"	#5@12" (d=8")

### \*MINIMUM REBAR REQUIREMENTS

- If the basement wall is NOT supporting an above grade wall in Seismic Design areas: Vertical rebar size and spacing per table above. Minimum horizontal rebar is #4@32" o.c.
- Vertical rebar size and spacing shall match the above grade all reinforcement if more restrictive.

### NOTES

1. This table is based on the design criteria of ACI 318-08 "Building Code Requirements for Structural Concrete"
2. The reinforcement requirements listed in this table are based on Grade 60 (ASTM A 615 or ASTM A 996) rebar and 2,500 psi concrete
3. This table assumes the vertical rebar is placed in the center of the 11" thick GlobalBlock wall (D=4.625), unless otherwise noted with an offset dimension ("d") measured from the outside edge of form (backfill side of the wall.)
4. The basement floor must be poured and the first floor in place before the backfilling.
5. The floor or roof system supporting the top of the basement wall and the connection to the top of the basement wall, must be specifically designed to provide the necessary strength to resist the horizontal reaction or force developed at the top of the basement wall by the lateral loads exerted on the wall by the backfill.
6. Concrete must cure a minimum of 7 days before backfilling.
7. Backfill should be well drained.
8. Refer to the BuildBlock Installation Manual for proper basement drainage and waterproofing systems.

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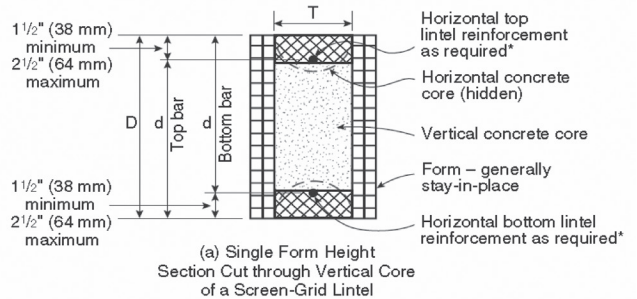
# BUILDBLOCK BUILDING SYSTEMS GLOBALBLOCK ENGINEERING TABLES

## 4" GLOBALBLOCK SCREEN GRID FORM

**Table 5.10 A&B**  
**Maximum Allowable Clear Spans (feet-inches) for**  
**Screen Grid ICF Lintels in Load-Bearing Walls (\*See Notes)**

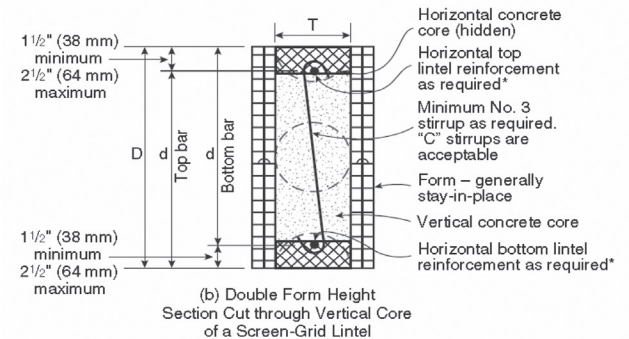
No. 4 Bottom Bar Size

Minimum Lintel Thickness, T (inches)	Minimum Lintel Depth, D (inches)	Supporting Light Frame Roof Only		Supporting Light Frame Second Story and Roof		Supporting ICF Second Story and Light Frame Roof	
		Maximum Ground Snow Load (psf)					
		30	70	30	70	30	70
4	16	2-0	1-6	1-8	1-6	N/A	N/A
	24	3-6*	2-6	2-6	2-0	2-0	2-0



No. 5 Bottom Bar Size

Minimum Lintel Thickness, T (inches)	Minimum Lintel Depth, D (inches)	Supporting Light Frame Roof Only		Supporting Light Frame Second Story and Roof		Supporting ICF Second Story and Light Frame Roof	
		Maximum Ground Snow Load (psf)					
		30	70	30	70	30	70
4	16	2-0	1-6	1-8	1-6	N/A	N/A
	24	3-6*	2-6	2-6	2-0	2-0	2-0



\*For bundled bars, see Section 7.2.2.

Note: Cross-hatching represents the area in which form material shall be removed, if necessary, to create flanges continuous the length of the lintel. Flanges shall have a minimum thickness of 2.5" and a minimum width of 5".

- Table values are based on concrete with a minimum specified compressive strength of 2,500 psi (17.2 MPa), reinforcing steel with a minimum yield strength of 40,000 psi (276 MPa), and a building width floor clear span of 24 feet and roof clear span of 32 feet (9.8m), D/R indicates design required.
- Stirrups shall be required at a maximum spacing of 12 inches (304.8mm) on center for 16 in (406.4mm) and 32 in (812.8mm) deep screen-grid lintels.
- Deflection criterion is  $l/240$ , where L is the clear span of the lintel in inches.
- Linear interpolation is permitted between ground now loads and between lintel depths. Lintel depth, D, is permitted to include the available height of any ICF wall location directly above the lintel, provided that the increased lintel depth spans the entire length of the lintel.
- Flat ICF lintel may be used in lieu of screen-grid lintels.
- Lintel thickness corresponds to the nominal screen-grid IFC wall thickness. For actual wall thickness.
- Refer to PCA 100-2012 Prescriptive Design & Exterior Concrete Walls for design assumption and background information
- Supported ICF wall dead load is approximately 30 psf
- Allowable Lintel Span can be 6'-0" for load bearing walls with concrete compressive strength of 3,500 psi (or greater) and for non-load bearing walls.





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**TABLE NUMBER**  
**12-A**

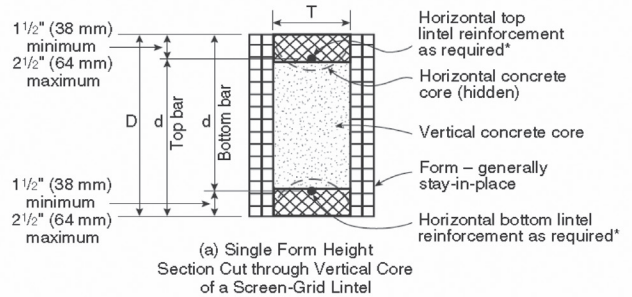
# BUILDBLOCK BUILDING SYSTEMS GLOBALBLOCK ENGINEERING TABLES

## 6" GLOBALBLOCK SCREEN GRID FORM

**Table 5.10 A&B**  
**Maximum Allowable Clear Spans (feet-inches) for**  
**Screen Grid ICF Lintels in Load-Bearing Walls (\*See Notes)**

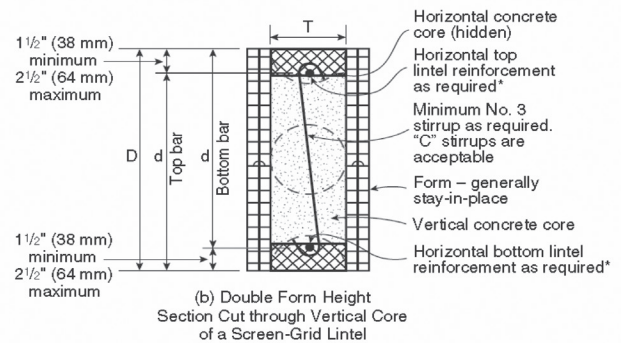
No. 4 Bottom Bar Size

Minimum Lintel Thickness, T (inches)	Minimum Lintel Depth, D (inches)	Supporting Light Frame Roof Only		Supporting Light Frame Second Story and Roof		Supporting ICF Second Story and Light Frame Roof	
		Maximum Ground Snow Load (psf)					
		30	70	30	70	30	70
6	16	4-5	3-6	3-8	3-5	3-3	3-1
	24	9-11	7-8	8-0	7-2	6-8	6-2



No. 5 Bottom Bar Size

Minimum Lintel Thickness, T (inches)	Minimum Lintel Depth, D (inches)	Supporting Light Frame Roof Only		Supporting Light Frame Second Story and Roof		Supporting ICF Second Story and Light Frame Roof	
		Maximum Ground Snow Load (psf)					
		30	70	30	70	30	70
6	16	4-5	3-6	3-8	3-5	3-3	3-1
	24	12-5	9-7	9-11	8-11	8-3	7-8



\*For bundled bars, see Section 7.2.2.

Note: Cross-hatching represents the area in which form material shall be removed, if necessary, to create flanges continuous the length of the lintel. Flanges shall have a minimum thickness of 2.5" and a minimum width of 5".

- Table values are based on concrete with a minimum specified compressive strength of 2,500 psi (17.2 MPa), reinforcing steel with a minimum yield strength of 40,000 psi (276 MPa), and a building width) floor clear span of 24 feet and roof clear span of 32 feet (9.8m), D/R indicates design required.
- Stirrups shall be required at a maximum spacing of 12 inches (304.8mm) on center for 16 in (406.4mm) and 32 in (812.8mm) deep screen-grid lintels.
- Deflection criterion is  $l/240$ , where L is the clear span of the lintel in inches.
- Linear interpolation is permitted between ground now loads and between lintel depths. Lintel depth, D, is permitted to include the available height of any ICF wall
- Location directly above the lintel, provided that the increased lintel depth spans the entire length of the lintel.
- Flat ICF lintel may be used in lieu of screen-grid lintels.
- Lintel thickness corresponds to the nominal screen-grid IFC wall thickness. For actual wall thickness.
- Refer to PCA 100-2012 Prescriptive Design & Exterior Concrete Walls for design assumption and background information.
- Supported ICF wall dead load is 53 psf (2.5kPA).



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**TABLE NUMBER**  
**12-B**

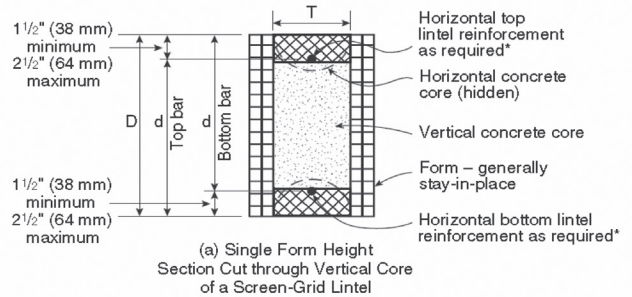
# BUILDBLOCK BUILDING SYSTEMS GLOBALBLOCK ENGINEERING TABLES

## 8" GLOBALBLOCK SCREEN GRID FORM

**Table 5.10 A&B**  
**Maximum Allowable Clear Spans (feet-inches) for**  
**Screen Grid ICF Lintels in Load-Bearing Walls (\*See Notes)**

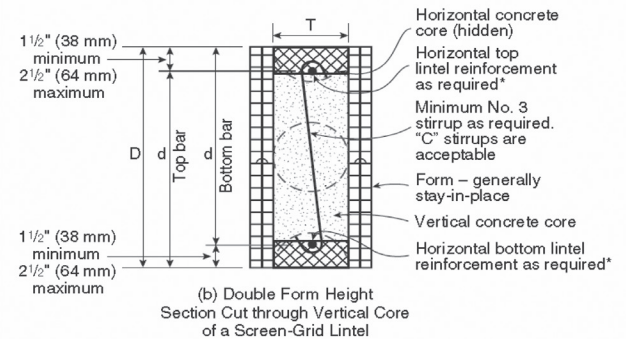
No. 4 Bottom Bar Size

Minimum Lintel Thickness, T (inches)	Minimum Lintel Depth, D (inches)	Supporting Light Frame Roof Only		Supporting Light Frame Second Story and Roof		Supporting ICF Second Story and Light Frame Roof	
		Maximum Ground Snow Load (psf)					
		30	70	30	70	30	70
8	16	7-6	5-3	5-6	5-2	4-9	4-6
	24	12-0	11-6	11-6	10-6	10-0	9-0



No. 5 Bottom Bar Size

Minimum Lintel Thickness, T (inches)	Minimum Lintel Depth, D (inches)	Supporting Light Frame Roof Only		Supporting Light Frame Second Story and Roof		Supporting ICF Second Story and Light Frame Roof	
		Maximum Ground Snow Load (psf)					
		30	70	30	70	30	70
8	16	7-6	5-3	5-6	5-2	4-9	4-6
	24	12-0	11-6	11-6	10-6	10-0	9-0



\*For bundled bars, see Section 7.2.2.

Note: Cross-hatching represents the area in which form material shall be removed, if necessary, to create flanges continuous the length of the lintel. Flanges shall have a minimum thickness of 2.5" and a minimum width of 5".

- Table values are based on concrete with a minimum specified compressive strength of 2,500 psi (17.2 MPa), reinforcing steel with a minimum yield strength of 40,000 psi (276 MPa), and a building width floor clear span of 24 feet and roof clear span of 32 feet (9.8m), D/R indicates design required.
- Stirrups shall be required at a maximum spacing of 12 inches (304.8mm) on center for 16 in (406.4mm) and 32 in (812.8mm) deep screen-grid lintels.
- Deflection criterion is  $l/240$ , where L is the clear span of the lintel in inches.
- Linear interpolation is permitted between ground snow loads and between lintel depths. Lintel depth, D, is permitted to include the available height of any ICF wall location directly above the lintel, provided that the increased lintel depth spans the entire length of the lintel.
- Flat ICF lintel may be used in lieu of screen-grid lintels.
- Lintel thickness corresponds to the nominal screen-grid ICF wall thickness. For actual wall thickness.
- Refer to PCA 100-2012 Prescriptive Design & Exterior Concrete Walls for design assumption and background information.
- Supported ICF wall dead load is approximately 75 psf.



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**TABLE NUMBER**  
**12-C**

# BUILDBLOCK BUILDING SYSTEMS GLOBALBLOCK ENGINEERING TABLES

## MAXIMUM ALLOWABLE CLEAR SPANS FOR 6-INCH THICK SCREEN-GRID LINTELS IN LOAD-BEARING WALLS 1,2,3,4,5,6,16 ROOF CLEAR SPAN 32 FEET AND FLOOR CLEAR SPAN 24 FEET

Lintel Depth 7, D(in.)	Number of bars and bar size in top and bottom of lintel	Steel yield strength 8, fy(ksi)	Loading condition determined from Table 7.2								
			1	2		3		4		5	
			Maximum ground snow load (psf)								
			30	70	30	70	30	70	30	70	
Maximum clear span of lintel (ft-inches)											
12 <sup>9,10</sup>	Span without stirrups 13		2-9	2-11	2-4	2-5	2-3	2-3	2-2	2-0	2-0
16 <sup>9,10</sup>	Span without stirrups 13		3-9	4-0	3-4	3-5	3-2	3-1	3-0	2-9	2-9
20 <sup>9,10</sup>	Span without stirrups 13		4-9	5-1	4-3	4-4	4-1	4-0	3-10	3-7	3-7
24 <sup>11</sup>	Span without stirrups 12,13		5-8	6-3	5-2	5-3	5-0	4-10	4-8	4-4	4-4
	1 - #4	40,000	7-11	9-0	6-11	7-2	6-5	6-1	5-8	4-9	4-7
		60,000	9-9	11-0	8-5	8-9	7-10	7-5	6-10	5-9	5-7
	1 - #5	40,000	9-11	11-2	8-7	8-1	8-0	7-7	7-0	5-11	5-9
		60,000	12-1	13-8	10-6	10-10	9-9	9-3	8-6	7-2	7-0
	2 - #4 - #6	40,000	11-2	12-8	9-9	10-1	9-1	8-7	7-11	6-8	6-6
		60,000	15-7	17-7	12-8	13-4	11-6	10-8	9-8	7-11	7-8
	2 - #5	40,000	14-11	18-0	12-2	12-10	11-1	10-3	9-4	7-8	7-5
60,000		DR	DR	DR	DR	DR	DR	DR	DR	DR	
Center distance A14,15			2-0	2-6	1-6	1-7	1-4	1-2	1-0	STL	STL

1. For SI: 1 inch = 25.4 mm; 1 psf = 0.0479 kN/m<sup>2</sup>; 1 ft. = 0.3048 m; Grade 40 = 280 MPa; Grade 60 = 420 MPa. Where lintels are formed with screen-grid forms, form material shall be removed if necessary to create top and bottom flanges of the lintel that are not less than 5 inches (127 mm) in width and not less than 2.5 inches (64 mm) in depth (in the vertical direction). See Figure 7.5. Flat stay-in-place form lintels shall be permitted to be used in lieu of screen-grid lintels. See Tables 7.3 through 7.10.
2. See Table 2.1 for tolerances permitted from nominal thickness and minimum dimensions and spacings of cores.
3. Table values are based on concrete with a minimum specified compressive strength of 2,500 psi (17.2 MPa). See notes 13 and 15. Table values are based on uniform loading. See Section 7.2 for lintels supporting concentrated loads.
4. Deflection criterion is L/240, where L is the clear span of the lintel in inches, or 1/2-inch (13 mm), whichever is less.
5. Linear interpolation is permitted between ground snow loads.
6. DR indicates design required STL indicates stirrups required throughout lintel
7. Lintel depth, D, is permitted to include the available height of wall located directly above the lintel, provided that the increased lintel depth spans the entire length of the lintel.
8. Stirrups shall be fabricated from reinforcing bars with the same yield strength as that used for the main longitudinal reinforcement.
9. Stirrups are not required for lintels less than 24 inches (610 mm) in depth fabricated from screen-grid forms. Top and bottom reinforcement shall consist of a No. 4 bar having a yield strength of 40,000 psi (280 MPa) or 60,000 psi (420 MPa).
10. Lintels between 12 (305) and 24 inches (610 mm) in depth with stirrups shall be formed from flat-walls forms (see Tables 7.3 through 7.10), or form material shall be removed from screen-grid forms so as to provide a concrete section comparable to that required for a flat wall. Allowable spans for flat lintels with stirrups shall be determined from Tables 7.3 through 7.10.
11. Where stirrups are required for 24-inch (610 mm) deep lintels, the spacing shall not exceed 12 inches (305 mm) on center.
12. Allowable clear span without stirrups applicable to all lintels of the same depth, D. Top and bottom reinforcement for lintels without stirrups shall not be less than the least amount of reinforcement required for a lintel of the same depth and loading condition with stirrups. All other spans require stirrups spaced at not more than 12 inches (305 mm).
13. Where concrete with a minimum specified compressive strength of 3,000 psi (20.7 MPa) is used, clear spans for lintels without stirrups shall be permitted to be multiplied by 1.05. If the increased span exceeds the allowable clear span for a lintel of the same depth and loading condition with stirrups, the top and bottom reinforcement shall be equal to or greater than that required for a lintel of the same depth and loading condition that has an allowable clear span that is equal to or greater than that of the lintel without stirrups that has been increased.
14. Center distance, A, is the center portion of the span where stirrups are not required. This is applicable to all longitudinal bar sizes and steel yield strengths.
15. Where concrete with a minimum specified compressive strength of 3,000 psi (20.7 MPa) is used, center distance, A, shall be permitted to be multiplied by 1.10.
16. The maximum clear opening width between two solid wall segments shall be 18 feet (5.5 m). See Section 5.2.1. Lintel spans in table greater than 18 feet (5.5 m) are shown for interpolation and information purposes only.

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# BUILDBLOCK BUILDING SYSTEMS GLOBALBLOCK ENGINEERING TABLES

## MAXIMUM ALLOWABLE CLEAR SPANS FOR 6-INCH THICK SCREEN-GRID LINTELS IN LOAD-BEARING WALLS 1,2,3,4,5,6,16 ROOF CLEAR SPAN 40 FEET AND FLOOR CLEAR SPAN 32 FEET

Lintel Depth 7, D(in.)	Number of bars and bar size in top and bottom of lintel	Steel yield strength 8, fy(ksi)	Loading condition determined from Table 7.2								
			1	2		3		4		5	
			Maximum ground snow load (psf)								
			30	70	30	70	30	70	30	70	
Maximum clear span of lintel (ft-inches)											
12 <sup>9,10</sup>	Span without stirrups 13		2-9	2-11	2-4	2-5	2-3	2-3	2-2	2-0	2-0
16 <sup>9,10</sup>	Span without stirrups 13		3-9	4-0	3-4	3-5	3-2	3-1	3-0	2-9	2-9
20 <sup>9,10</sup>	Span without stirrups 13		4-9	5-1	4-3	4-4	4-1	4-0	3-10	3-7	3-7
24 <sup>11</sup>	Span without stirrups 12,13		5-8	6-3	5-2	5-3	5-0	4-10	4-8	4-4	4-4
	1 - #4	40,000	7-11	9-0	6-11	7-2	6-5	6-1	5-8	4-9	4-7
		60,000	9-9	11-0	8-5	8-9	7-10	7-5	6-10	5-9	5-7
	1 - #5	40,000	9-11	11-2	8-7	8-1	8-0	7-7	7-0	5-11	5-9
		60,000	12-1	13-8	10-6	10-10	9-9	9-3	8-6	7-2	7-0
	2 - #4 - #6	40,000	11-2	12-8	9-9	10-1	9-1	8-7	7-11	6-8	6-6
		60,000	15-7	17-7	12-8	13-4	11-6	10-8	9-8	7-11	7-8
	2 - #5	40,000	14-11	18-0	12-2	12-10	11-1	10-3	9-4	7-8	7-5
60,000		DR	DR	DR	DR	DR	DR	DR	DR	DR	
Center distance A14,15			2-0	2-6	1-6	1-7	1-4	1-2	1-0	STL	STL

1. For SI: 1 inch = 25.4 mm; 1 psf = 0.0479 kN/m<sup>2</sup>; 1 ft. = 0.3048 m; Grade 40 = 280 MPa; Grade 60 = 420 MPa. Where lintels are formed with screen-grid forms, form material shall be removed if necessary to create top and bottom flanges of the lintel that are not less than 5 inches (127 mm) in width and not less than 2.5 inches (64 mm) in depth (in the vertical direction). See Figure 7.5. Flat stay-in-place form lintels shall be permitted to be used in lieu of screen-grid lintels. See Tables 7.3 through 7.10.
2. See Table 2.1 for tolerances permitted from nominal thickness and minimum dimensions and spacings of cores.
3. Table values are based on concrete with a minimum specified compressive strength of 2,500 psi (17.2 MPa). See notes 13 and 15. Table values are based on uniform loading. See Section 7.2 for lintels supporting concentrated loads.
4. Deflection criterion is L/240, where L is the clear span of the lintel in inches, or 1/2-inch (13 mm), whichever is less.
5. Linear interpolation is permitted between ground snow loads.
6. DR indicates design required STL indicates stirrups required throughout lintel
7. Lintel depth, D, is permitted to include the available height of wall located directly above the lintel, provided that the increased lintel depth spans the entire length of the lintel.
8. Stirrups shall be fabricated from reinforcing bars with the same yield strength as that used for the main longitudinal reinforcement.
9. Stirrups are not required for lintels less than 24 inches (610 mm) in depth fabricated from screen-grid forms. Top and bottom reinforcement shall consist of a No. 4 bar having a yield strength of 40,000 psi (280 MPa) or 60,000 psi (420 MPa).
10. Lintels between 12 (305) and 24 inches (610 mm) in depth with stirrups shall be formed from flat-walls forms (see Tables 7.3 through 7.10), or form material shall be removed from screen-grid forms so as to provide a concrete section comparable to that required for a flat wall. Allowable spans for flat lintels with stirrups shall be determined from Tables 7.3 through 7.10.
11. Where stirrups are required for 24-inch (610 mm) deep lintels, the spacing shall not exceed 12 inches (305 mm) on center.
12. Allowable clear span without stirrups applicable to all lintels of the same depth, D. Top and bottom reinforcement for lintels without stirrups shall not be less than the least amount of reinforcement required for a lintel of the same depth and loading condition with stirrups. All other spans require stirrups spaced at not more than 12 inches (305 mm).
13. Where concrete with a minimum specified compressive strength of 3,000 psi (20.7 MPa) is used, clear spans for lintels without stirrups shall be permitted to be multiplied by 1.05. If the increased span exceeds the allowable clear span for a lintel of the same depth and loading condition with stirrups, the top and bottom reinforcement shall be equal to or greater than that required for a lintel of the same depth and loading condition that has an allowable clear span that is equal to or greater than that of the lintel without stirrups that has been increased.
14. Center distance, A, is the center portion of the span where stirrups are not required. This is applicable to all longitudinal bar sizes and steel yield strengths.
15. Where concrete with a minimum specified compressive strength of 3,000 psi (20.7 MPa) is used, center distance, A, shall be permitted to be multiplied by 1.10.
16. The maximum clear opening width between two solid wall segments shall be 18 feet (5.5 m). See Section 5.2.1. Lintel spans in table greater than 18 feet (5.5 m) are shown for interpolation and information purposes only.

	 <p><b>BUILDBLOCK BUILDING SYSTEMS, LLC</b>            9705 N. Broadway Extension, Suite 200, Oklahoma City, OK 73114            Office: 405-840-3386   Toll Free: 866-222-2575   Fax: 831-597-0792            buildblock.com   store.buildblock.com</p>	<p><b>TABLE NUMBER</b></p> <h1 style="margin: 0;">12-E</h1>
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