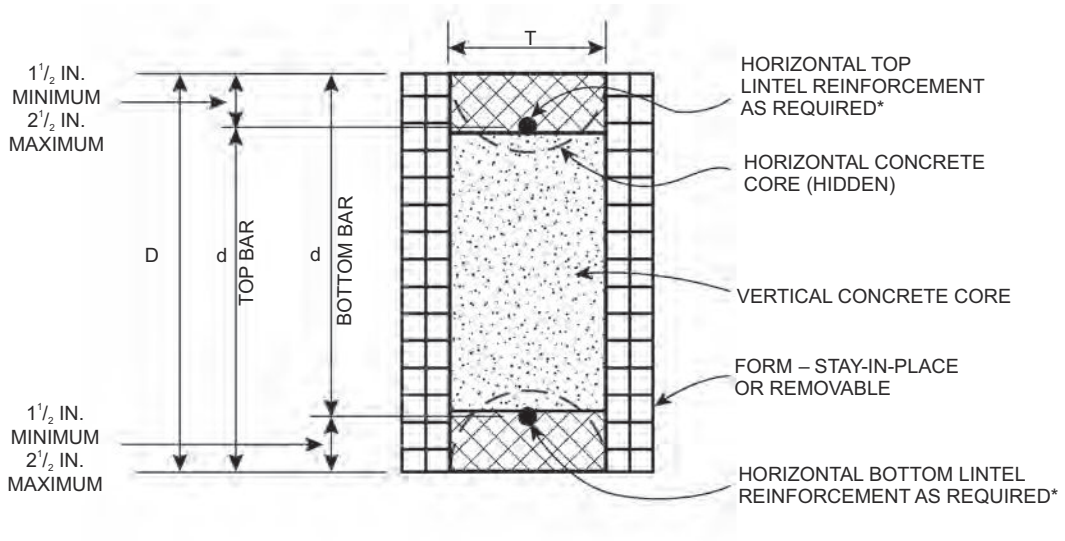
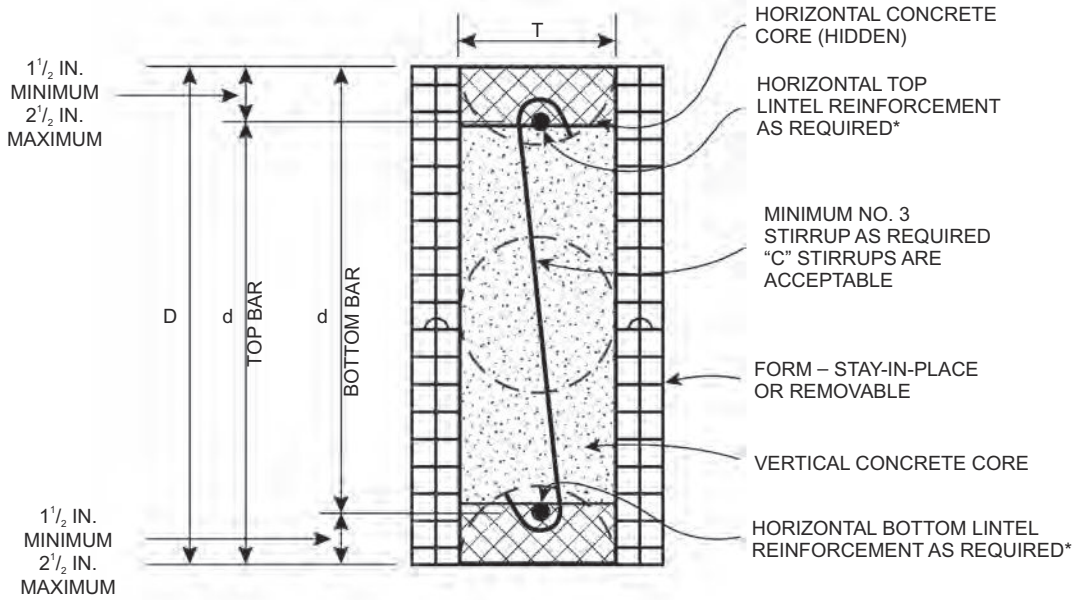



(a) SINGLE FORM HEIGHT SECTION CUT THROUGH VERTICAL CORE OF A SCREEN-GRID LINTEL




(b) DOUBLE FORM HEIGHT SECTION CUT THROUGH VERTICAL CORE OF A SCREEN-GRID LINTEL

*FOR BUNDLED BARS, SEE SECTION R608.8.2.2

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 IN. AND A MINIMUM WIDTH OF 5 IN. SEE NOTE a TO TABLES R608.8(8) AND R608.8(10).

For SI: 1 inch = 25.4 mm.

**FIGURE R608.8(4)**
**LINTELS FOR SCREEN-GRID WALLS**

**TABLE R608.8(1)**
**LINTEL DESIGN LOADING CONDITIONS[a, b, d]**

| DESCRIPTION OF LOADS AND OPENINGS ABOVE INFLUENCING DESIGN OF LINTEL | | | DESIGN LOAD CONDITION[c] |
|---|---|---|---|
| **Opening in wall of top story of two-story building, or first story of one-story building** | | | |
| Wall supporting loads from roof, including attic floor, if applicable, and | Top of lintel equal to or less than W/2 below top of wall | | 2 |
| | Top of lintel greater than W/2 below top of wall | | NLB |
| Wall not supporting loads from roof or attic floor | | | NLB |
| **Opening in wall of first story of two-story building where wall immediately above is of concrete construction, or opening in basement wall of one-story building where wall immediately above is of concrete construction** | | | |
| LB ledger board mounted to side of wall with bottom of ledger less than or equal to W/2 above top of lintel, and | Top of lintel greater than W/2 below bottom of opening in story above | | 1 |
| | Top of lintel less than or equal to W/2 below bottom of opening in story above, and | Opening is entirely within the footprint of the opening in the story above | 1 |
| | | Opening is partially within the footprint of the opening in the story above | 4 |
| LB ledger board mounted to side of wall with bottom of ledger more than W/2 above top of lintel | | | NLB |
| NLB ledger board mounted to side of wall with bottom of ledger less than or equal to W/2 above top of lintel, or no ledger board, and | Top of lintel greater than W/2 below bottom of opening in story above | | NLB |
| | Top of lintel less than or equal to W/2 below bottom of opening in story above, and | Opening is entirely within the footprint of the opening in the story above | NLB |
| | | Opening is partially within the footprint of the opening in the story above | 1 |
| **Opening in basement wall of two-story building where walls of two stories above are of concrete construction** | | | |
| LB ledger board mounted to side of wall with bottom of ledger less than or equal to W/2 above top of lintel, and | Top of lintel greater than W/2 below bottom of opening in story above | | 1 |
| | Top of lintel less than or equal to W/2 below bottom of opening in story above, and | Opening is entirely within the footprint of the opening in the story above | 1 |
| | | Opening is partially within the footprint of the opening in the story above | 5 |
| LB ledger board mounted to side of wall with bottom of ledger more than W/2 above top of lintel | | | NLB |
| NLB ledger board mounted to side of wall with bottom of ledger less than or equal to W/2 above top of lintel, or no ledger board, and | Top of lintel greater than W/2 below bottom of opening in story above | | NLB |
| | Top of lintel less than or equal to W/2 below bottom of opening in story above, and | Opening is entirely within the footprint of the opening in the story above | NLB |
| | | Opening is partially within the footprint of the opening in the story above | 1 |
| **Opening in wall of first story of two-story building where wall immediately above is of light-framed construction, or opening in basement wall of one-story building where wall immediately above is of light-framed construction** | | | |
| Wall supporting loads from roof, second floor and top-story wall of light-framed construction, and | Top of lintel equal to or less than W/2 below top of wall | | 3 |
| | Top of lintel greater than W/2 below top of wall | | NLB |
| Wall not supporting loads from roof or second floor | | | NLB |

a. LB means load bearing, NLB means nonload bearing, and W means width of opening.
b. Footprint is the area of the wall below an opening in the story above, bounded by the bottom of the opening and vertical lines extending downward from the edges of the opening.
c. For design loading condition "NLB" see Tables R608.8(9) and R608.8(10). For all other design loading conditions, see Tables R608.8(2) through R608.8(8).
d. An NLB ledger board is a ledger attached to a wall that is parallel to the span of the floor, roof or ceiling framing that supports the edge of the floor, ceiling or roof.

**TABLE R608.8(2)**
**MAXIMUM ALLOWABLE CLEAR SPANS FOR 4-INCH-NOMINAL THICK FLAT LINTELS IN LOAD-BEARING WALLS[a, b, c, d, e, f, m]**
**ROOF CLEAR SPAN 40 FEET AND FLOOR CLEAR SPAN 32 FEET**

| LINTEL DEPTH, $D$[g] (inches) | NUMBER OF BARS AND BAR SIZE IN TOP AND BOTTOM OF LINTEL | STEEL YIELD STRENGTH[h], $f_y$ (psi) | DESIGN LOADING CONDITION DETERMINED FROM TABLE R608.8(1) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | | 3 | | 4 | | 5 | |
| | | | Maximum ground snow load (psf) | | | | | | | | |
| | | | — | 30 | 70 | 30 | 70 | 30 | 70 | 30 | 70 |
| | | | Maximum clear span of lintel (feet - inches) | | | | | | | | |
| 8 | Span without stirrups[i, j] | | 3-2 | 3-4 | 2-4 | 2-6 | 2-2 | 2-1 | 2-0 | 2-0 | 2-0 |
| | 1-#4 | 40,000 | 5-2 | 5-5 | 4-1 | 4-3 | 3-10 | 3-7 | 3-4 | 2-9 | 2-9 |
| | | 60,000 | 6-2 | 6-5 | 4-11 | 5-1 | 4-6 | 4-2 | 3-8 | 2-11 | 2-10 |
| | 1-#5 | 40,000 | 6-3 | 6-7 | 5-0 | 5-2 | 4-6 | 4-2 | 3-8 | 2-11 | 2-10 |
| | | 60,000 | DR | DR | DR | DR | DR | DR | DR | DR | DR |
| | Center distance $A$[k, l] | | 1-1 | 1-2 | 0-8 | 0-9 | 0-7 | 0-6 | 0-5 | 0-4 | 0-4 |
| 12 | Span without stirrups[i, j] | | 3-4 | 3-7 | 2-9 | 2-11 | 2-8 | 2-6 | 2-5 | 2-2 | 2-2 |
| | 1-#4 | 40,000 | 6-7 | 7-0 | 5-4 | 5-7 | 5-0 | 4-9 | 4-4 | 3-8 | 3-7 |
| | | 60,000 | 7-11 | 8-6 | 6-6 | 6-9 | 6-0 | 5-9 | 5-3 | 4-5 | 4-4 |
| | 1-#5 | 40,000 | 8-1 | 8-8 | 6-7 | 6-10 | 6-2 | 5-10 | 5-4 | 4-6 | 4-5 |
| | | 60,000 | 9-8 | 10-4 | 7-11 | 8-2 | 7-4 | 6-11 | 6-2 | 4-10 | 4-8 |
| | 2-#4<br>1-#6 | 40,000 | 9-1 | 9-8 | 7-4 | 7-8 | 6-10 | 6-6 | 6-0 | 4-10 | 4-8 |
| | | 60,000 | DR | DR | DR | DR | DR | DR | DR | DR | DR |
| | Center distance $A$[k, l] | | 1-8 | 1-11 | 1-1 | 1-3 | 1-0 | 0-11 | 0-9 | 0-6 | 0-6 |
| 16 | Span without stirrups[i, j] | | 4-7 | 5-0 | 3-11 | 4-0 | 3-8 | 3-7 | 3-4 | 3-1 | 3-0 |
| | 1-#4 | 40,000 | 6-8 | 7-3 | 5-6 | 5-9 | 5-2 | 4-11 | 4-6 | 3-10 | 3-8 |
| | | 60,000 | 9-3 | 10-1 | 7-9 | 8-0 | 7-2 | 6-10 | 6-3 | 5-4 | 5-2 |
| | 1-#4 | 40,000 | 9-6 | 10-4 | 7-10 | 8-2 | 7-4 | 6-11 | 6-5 | 5-5 | 5-3 |
| | | 60,000 | 11-5 | 12-5 | 9-6 | 9-10 | 8-10 | 8-4 | 7-9 | 6-6 | 6-4 |
| | 2-#4<br>1-#6 | 40,000 | 10-7 | 11-7 | 8-10 | 9-2 | 8-3 | 7-9 | 7-2 | 6-1 | 5-11 |
| | | 60,000 | 12-9 | 13-10 | 10-7 | 11-0 | 9-10 | 9-4 | 8-7 | 6-9 | 6-6 |
| | 2-#5 | 40,000 | 13-0 | 14-1 | 10-9 | 11-2 | 9-11 | 9-2 | 8-2 | 6-6 | 6-3 |
| | | 60,000 | DR | DR | DR | DR | DR | DR | DR | DR | DR |
| | Center distance $A$[k, l] | | 2-3 | 2-8 | 1-7 | 1-8 | 1-4 | 1-3 | 1-0 | 0-9 | 0-8 |
| 20 | Span without stirrups $A$[i, j] | | 5-9 | 6-5 | 5-0 | 5-2 | 4-9 | 4-7 | 4-4 | 3-11 | 3-11 |
| | 1-#4 | 40,000 | 7-5 | 8-2 | 6-3 | 6-6 | 5-10 | 5-7 | 5-1 | 4-4 | 4-2 |
| | | 60,000 | 9-0 | 10-0 | 7-8 | 7-11 | 7-1 | 6-9 | 6-3 | 5-3 | 5-1 |
| | 1-#5 | 40,000 | 9-2 | 10-2 | 7-9 | 8-1 | 7-3 | 6-11 | 6-4 | 5-4 | 5-2 |
| | | 60,000 | 12-9 | 14-2 | 10-10 | 11-3 | 10-1 | 9-7 | 8-10 | 7-5 | 7-3 |
| | 2-#4<br>1-#6 | 40,000 | 11-10 | 13-2 | 10-1 | 10-5 | 9-4 | 8-11 | 8-2 | 6-11 | 6-9 |
| | | 60,000 | 14-4 | 15-10 | 12-1 | 12-7 | 11-3 | 10-9 | 9-11 | 8-4 | 8-1 |
| | 2-#5 | 40,000 | 14-7 | 16-2 | 12-4 | 12-9 | 11-4 | 10-6 | 9-5 | 7-7 | 7-3 |
| | | 60,000 | 17-5 | 19-2 | 14-9 | 15-3 | 13-5 | 12-4 | 11-0 | 8-8 | 8-4 |
| | 2-#6 | 40,000 | 16-4 | 18-11 | 12-7 | 13-3 | 11-4 | 10-6 | 9-5 | 7-7 | 7-3 |
| | | 60,000 | DR | DR | DR | DR | DR | DR | DR | DR | DR |
| | Center distance $A$[k, l] | | 2-9 | 3-5 | 2-0 | 2-2 | 1-9 | 1-7 | 1-4 | 0-11 | 0-11 |

*(continued)*

**TABLE R608.8(2)—continued**
**MAXIMUM ALLOWABLE CLEAR SPANS FOR 4-INCH-NOMINAL THICK FLAT LINTELS IN LOAD-BEARING WALLS[a, b, c, d, e, f, m]**
**ROOF CLEAR SPAN 40 FEET AND FLOOR CLEAR SPAN 32 FEET**

| LINTEL DEPTH, $D$[g] (inches) | NUMBER OF BARS AND BAR SIZE IN TOP AND BOTTOM OF LINTEL | STEEL YIELD STRENGTH[h], $f_y$ (psi) | DESIGN LOADING CONDITION DETERMINED FROM TABLE R608.8(1) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | | 3 | | 4 | | 5 | |
| | | | Maximum ground snow load (psf) | | | | | | | | |
| | | | — | 30 | 70 | 30 | 70 | 30 | 70 | 30 | 70 |
| | | | Maximum clear span of lintel (feet - inches) | | | | | | | | |
| 24 | Span without stirrups[i, j] | | 6-11 | 7-9 | 6-1 | 6-3 | 5-9 | 5-7 | 5-3 | 4-9 | 4-8 |
| | 1-#4 | 40,000 | 8-0 | 9-0 | 6-11 | 7-2 | 6-5 | 6-2 | 5-8 | 4-9 | 4-8 |
| | | 60,000 | 9-9 | 11-0 | 8-5 | 8-9 | 7-10 | 7-6 | 6-11 | 5-10 | 5-8 |
| | 1-#5 | 40,000 | 10-0 | 11-3 | 8-7 | 8-11 | 8-0 | 7-7 | 7-0 | 5-11 | 5-9 |
| | | 60,000 | 13-11 | 15-8 | 12-0 | 12-5 | 11-2 | 10-7 | 9-10 | 8-3 | 8-0 |
| | 2-#4<br>1-#6 | 40,000 | 12-11 | 14-6 | 11-2 | 11-6 | 10-5 | 9-10 | 9-1 | 7-8 | 7-5 |
| | | 60,000 | 15-7 | 17-7 | 13-6 | 13-11 | 12-7 | 11-11 | 11-0 | 9-3 | 9-0 |
| | 2-#5 | 40,000 | 15-11 | 17-11 | 13-7 | 14-3 | 12-8 | 11-9 | 10-8 | 8-7 | 8-4 |
| | | 60,000 | 19-1 | 21-6 | 16-5 | 17-1 | 15-1 | 14-0 | 12-6 | 9-11 | 9-7 |
| | 2-#6 | 40,000 | 17-7 | 21-1 | 14-1 | 14-10 | 12-8 | 11-9 | 10-8 | 8-7 | 8-4 |
| | | 60,000 | DR | DR | DR | DR | DR | DR | DR | DR | DR |
| | Center distance $A$[k, l] | | 3-3 | 4-1 | 2-5 | 2-7 | 2-1 | 1-11 | 1-7 | 1-2 | 1-1 |

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per square inch = 6.895 kPa, 1 pound per square foot = 0.0479 kPa, Grade 40 = 280 MPa, Grade 60 = 420 MPa.

a. See Table R608.3 for tolerances permitted from nominal thickness.
b. Table values are based on concrete with a minimum specified compressive strength of 2,500 psi. See Note j.
c. Table values are based on uniform loading. See Section R608.8.2 for lintels supporting concentrated loads.
d. Deflection criterion is $L/240$, where $L$ is the clear span of the lintel in inches, or $^1/_2$-inch, whichever is less.
e. Linear interpolation is permitted between ground snow loads and between lintel depths.
f. DR indicates design required.
g. 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.
h. Stirrups shall be fabricated from reinforcing bars with the same yield strength as that used for the main longitudinal reinforcement.
i. Allowable clear span without stirrups applicable to all lintels of the same depth, $D$. Top and bottom reinforcement for lintels without stirrups shall be not 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 $d/2$.
j. Where concrete with a minimum specified compressive strength of 3,000 psi 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.
k. Center distance, $A$, is the center portion of the clear span where stirrups are not required. This is applicable to all longitudinal bar sizes and steel yield strengths.
l. Where concrete with a minimum specified compressive strength of 3,000 psi is used, center distance, $A$, shall be permitted to be multiplied by 1.10.
m. The maximum clear opening width between two solid wall segments shall be 18 feet. See Section R608.7.2.1. Lintel clear spans in the table greater than 18 feet are shown for interpolation and information only.

**TABLE R608.8(3)**
**MAXIMUM ALLOWABLE CLEAR SPANS FOR 6-INCH-NOMINAL THICK FLAT LINTELS IN LOAD-BEARING WALLS[a, b, c, d, e, f, m]**
**ROOF CLEAR SPAN 40 FEET AND FLOOR CLEAR SPAN 32 FEET**

| LINTEL DEPTH, $D$[g] (inches) | NUMBER OF BARS AND BAR SIZE IN TOP AND BOTTOM OF LINTEL | STEEL YIELD STRENGTH[h], $f_y$ (psi) | DESIGN LOADING CONDITION DETERMINED FROM TABLE R608.8(1) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | | 3 | | 4 | | 5 | |
| | | | Maximum ground snow load (psf) | | | | | | | | |
| | | | — | 30 | 70 | 30 | 70 | 30 | 70 | 30 | 70 |
| | | | Maximum clear span of lintel (feet - inches) | | | | | | | | |
| 8 | Span without stirrups[i, j] | | 4-2 | 4-8 | 3-1 | 3-3 | 2-10 | 2-6 | 2-3 | 2-0 | 2-0 |
| | 1-#4 | 40,000 | 5-1 | 5-5 | 4-2 | 4-3 | 3-10 | 3-6 | 3-3 | 2-8 | 2-7 |
| | | 60,000 | 6-2 | 6-7 | 5-0 | 5-2 | 4-8 | 4-2 | 3-11 | 3-3 | 3-2 |
| | 1-#5 | 40,000 | 6-3 | 6-8 | 5-1 | 5-3 | 4-9 | 4-3 | 4-0 | 3-3 | 3-2 |
| | | 60,000 | 7-6 | 8-0 | 6-1 | 6-4 | 5-8 | 5-1 | 4-9 | 3-8 | 3-6 |
| | 2-#4<br>1-#6 | 40,000 | 7-0 | 7-6 | 5-8 | 5-11 | 5-3 | 4-9 | 4-5 | 3-8 | 3-6 |
| | | 60,000 | DR | DR | DR | DR | DR | DR | DR | DR | DR |
| | Center distance $A$[k, l] | | 1-7 | 1-10 | 1-1 | 1-2 | 0-11 | 0-9 | 0-8 | 0-5 | 0-5 |
| 12 | Span without stirrups[i, j] | | 4-2 | 4-8 | 3-5 | 3-6 | 3-2 | 2-11 | 2-9 | 2-5 | 2-4 |
| | 1-#4 | 40,000 | 5-7 | 6-1 | 4-8 | 4-10 | 4-4 | 3-11 | 3-8 | 3-0 | 2-11 |
| | | 60,000 | 7-9 | 8-6 | 6-6 | 6-9 | 6-1 | 5-6 | 5-1 | 4-3 | 4-1 |
| | 1-#5 | 40,000 | 7-11 | 8-8 | 6-8 | 6-11 | 6-2 | 5-7 | 5-2 | 4-4 | 4-2 |
| | | 60,000 | 9-7 | 10-6 | 8-0 | 8-4 | 7-6 | 6-9 | 6-3 | 5-2 | 5-1 |
| | 2-#4<br>1-#6 | 40,000 | 8-11 | 9-9 | 7-6 | 7-9 | 6-11 | 6-3 | 5-10 | 4-10 | 4-8 |
| | | 60,000 | 10-8 | 11-9 | 8-12 | 9-4 | 8-4 | 7-6 | 7-0 | 5-10 | 5-8 |
| | 2-#5 | 40,000 | 10-11 | 12-0 | 9-2 | 9-6 | 8-6 | 7-8 | 7-2 | 5-6 | 5-3 |
| | | 60,000 | 12-11 | 14-3 | 10-10 | 11-3 | 10-1 | 9-0 | 8-1 | 6-1 | 5-10 |
| | 2-#6 | 40,000 | 12-9 | 14-0 | 10-8 | 11-1 | 9-7 | 8-1 | 7-3 | 5-6 | 5-3 |
| | | 60,000 | DR | DR | DR | DR | DR | DR | DR | DR | DR |
| | Center distance $A$[k, l] | | 2-6 | 3-0 | 1-9 | 1-10 | 1-6 | 1-3 | 1-1 | 0-9 | 0-8 |
| 16 | Span without stirrups[i, j] | | 5-7 | 6-5 | 4-9 | 4-11 | 4-5 | 4-0 | 3-10 | 3-4 | 3-4 |
| | 1-#4 | 40,000 | 6-5 | 7-2 | 5-6 | 5-9 | 5-2 | 4-8 | 4-4 | 3-7 | 3-6 |
| | | 60,000 | 7-10 | 8-9 | 6-9 | 7-0 | 6-3 | 5-8 | 5-3 | 4-4 | 4-3 |
| | 1-#5 | 40,000 | 7-11 | 8-11 | 6-10 | 7-1 | 6-5 | 5-9 | 5-4 | 4-5 | 4-4 |
| | | 60,000 | 11-1 | 12-6 | 9-7 | 9-11 | 8-11 | 8-0 | 7-6 | 6-2 | 6-0 |
| | 2-#4<br>1-#6 | 40,000 | 10-3 | 11-7 | 8-10 | 9-2 | 8-3 | 7-6 | 6-11 | 5-9 | 5-7 |
| | | 60,000 | 12-5 | 14-0 | 10-9 | 11-1 | 10-0 | 9-0 | 8-5 | 7-0 | 6-9 |
| | 2-#5 | 40,000 | 12-8 | 14-3 | 10-11 | 11-4 | 10-2 | 9-2 | 8-7 | 6-9 | 6-6 |
| | | 60,000 | 15-2 | 17-1 | 13-1 | 13-7 | 12-3 | 11-0 | 10-3 | 7-11 | 7-7 |
| | 2-#6 | 40,000 | 14-11 | 16-9 | 12-8 | 13-4 | 11-4 | 9-8 | 8-8 | 6-9 | 6-6 |
| | | 60,000 | DR | DR | DR | DR | DR | DR | DR | DR | DR |
| | Center distance $A$[k, l] | | 3-3 | 4-1 | 2-5 | 2-7 | 2-1 | 1-9 | 1-6 | 1-0 | 1-0 |

*(continued)*

**TABLE R608.8(3)—continued**
**MAXIMUM ALLOWABLE CLEAR SPANS FOR 6-INCH-NOMINAL THICK FLAT LINTELS IN LOAD-BEARING WALLS[a, b, c, d, e, f, m]**
**ROOF CLEAR SPAN 40 FEET AND FLOOR CLEAR SPAN 32 FEET**

| LINTEL DEPTH, $D$[g] (inches) | NUMBER OF BARS AND BAR SIZE IN TOP AND BOTTOM OF LINTEL | STEEL YIELD STRENGTH[h], $f_y$ (psi) | DESIGN LOADING CONDITION DETERMINED FROM TABLE R608.8(1) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | | 3 | | 4 | | 5 | |
| | | | Maximum ground snow load (psf) | | | | | | | | |
| | | | — | 30 | 70 | 30 | 70 | 30 | 70 | 30 | 70 |
| | | | Maximum clear span of lintel (feet - inches) | | | | | | | | |
| 20 | Span without stirrups[i, j] | | 6-11 | 8-2 | 6-1 | 6-3 | 5-8 | 5-2 | 4-11 | 4-4 | 4-3 |
| | 1-#5 | 40,000 | 8-9 | 10-1 | 7-9 | 8-0 | 7-3 | 6-6 | 6-1 | 5-1 | 4-11 |
| | | 60,000 | 10-8 | 12-3 | 9-5 | 9-9 | 8-10 | 8-0 | 7-5 | 6-2 | 6-0 |
| | 2-#4 1-#6 | 40,000 | 9-11 | 11-4 | 8-9 | 9-1 | 8-2 | 7-4 | 6-10 | 5-8 | 5-7 |
| | | 60,000 | 13-9 | 15-10 | 12-2 | 12-8 | 11-5 | 10-3 | 9-7 | 7-11 | 7-9 |
| | 2-#5 | 40,000 | 14-0 | 16-2 | 12-5 | 12-11 | 11-7 | 10-6 | 9-9 | 7-11 | 7-8 |
| | | 60,000 | 16-11 | 19-6 | 15-0 | 15-6 | 14-0 | 12-7 | 11-9 | 9-1 | 8-9 |
| | 2-#6 | 40,000 | 16-7 | 19-1 | 14-7 | 15-3 | 13-1 | 11-3 | 10-2 | 7-11 | 7-8 |
| | | 60,000 | 19-11 | 22-10 | 17-4 | 18-3 | 15-6 | 13-2 | 11-10 | 9-1 | 8-9 |
| | Center distance $A$[k, l] | | 3-11 | 5-2 | 3-1 | 3-3 | 2-8 | 2-2 | 1-11 | 1-4 | 1-3 |
| 24 | Span without stirrups[i, j] | | 8-2 | 9-10 | 7-4 | 7-8 | 6-11 | 6-4 | 5-11 | 5-3 | 5-2 |
| | 1-#5 | 40,000 | 9-5 | 11-1 | 8-7 | 8-10 | 8-0 | 7-3 | 6-9 | 5-7 | 5-5 |
| | | 60,000 | 11-6 | 13-6 | 10-5 | 10-9 | 9-9 | 8-9 | 8-2 | 6-10 | 6-8 |
| | 2-#4 1-#6 | 40,000 | 10-8 | 12-6 | 9-8 | 10-0 | 9-0 | 8-2 | 7-7 | 6-4 | 6-2 |
| | | 60,000 | 12-11 | 15-2 | 11-9 | 12-2 | 11-0 | 9-11 | 9-3 | 7-8 | 7-6 |
| | 2-#5 | 40,000 | 15-2 | 17-9 | 13-9 | 14-3 | 12-10 | 11-7 | 10-10 | 9-0 | 8-9 |
| | | 60,000 | 18-4 | 21-6 | 16-7 | 17-3 | 15-6 | 14-0 | 13-1 | 10-4 | 10-0 |
| | 2-#6 | 40,000 | 18-0 | 21-1 | 16-4 | 16-11 | 14-10 | 12-9 | 11-8 | 9-2 | 8-11 |
| | | 60,000 | 21-7 | 25-4 | 19-2 | 20-4 | 17-2 | 14-9 | 13-4 | 10-4 | 10-0 |
| | Center distance $A$[k, l] | | 4-6 | 6-2 | 3-8 | 4-0 | 3-3 | 2-8 | 2-3 | 1-7 | 1-6 |

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per square inch = 6.895 kPa, 1 pound per square foot = 0.0479 kPa, Grade 40 = 280 MPa, Grade 60 = 420 MPa.

a. See Table R608.3 for tolerances permitted from nominal thickness.

b. Table values are based on concrete with a minimum specified compressive strength of 2,500 psi. See Note j.

c. Table values are based on uniform loading. See Section R608.8.2 for lintels supporting concentrated loads.

d. Deflection criterion is $L/240$, where $L$ is the clear span of the lintel in inches, or $^1/_2$ inch, whichever is less.

e. Linear interpolation is permitted between ground snow loads and between lintel depths.

f. DR indicates design required.

g. 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.

h. Stirrups shall be fabricated from reinforcing bars with the same yield strength as that used for the main longitudinal reinforcement.

i. Allowable clear span without stirrups applicable to all lintels of the same depth, $D$. Top and bottom reinforcement for lintels without stirrups shall be not 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 $d/2$.

j. Where concrete with a minimum specified compressive strength of 3,000 psi 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.

k. Center distance, $A$, is the center portion of the clear span where stirrups are not required. This is applicable to all longitudinal bar sizes and steel yield strengths.

l. Where concrete with a minimum specified compressive strength of 3,000 psi is used, center distance, $A$, shall be permitted to be multiplied by 1.10.

m. The maximum clear opening width between two solid wall segments shall be 18 feet. See Section R608.7.2.1. Lintel clear spans in the table greater than 18 feet are shown for interpolation and information only.

**TABLE R608.8(4)**
**MAXIMUM ALLOWABLE CLEAR SPANS FOR 8-INCH-NOMINAL THICK FLAT LINTELS IN LOAD-BEARING WALLS[a, b, c, d, e, f, m]**
**ROOF CLEAR SPAN 40 FEET AND FLOOR CLEAR SPAN 32 FEET**

| LINTEL DEPTH, $D$[g] (inches) | NUMBER OF BARS AND BAR SIZE IN TOP AND BOTTOM OF LINTEL | STEEL YIELD STRENGTH[h], $f_y$ (psi) | DESIGN LOADING CONDITION DETERMINED FROM TABLE R608.8(1) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | | 3 | | 4 | | 5 | |
| | | | Maximum ground snow load (psf) | | | | | | | | |
| | | | — | 30 | 70 | 30 | 70 | 30 | 70 | 30 | 70 |
| | | | Maximum clear span of lintel (feet - inches) | | | | | | | | |
| 8 | Span without stirrups[i, j] | | 4-4 | 4-9 | 3-7 | 3-9 | 3-4 | 2-10 | 2-7 | 2-1 | 2-0 |
| | 1-#4 | 40,000 | 4-4 | 4-9 | 3-7 | 3-9 | 3-4 | 2-11 | 2-9 | 2-3 | 2-2 |
| | | 60,000 | 6-1 | 6-7 | 5-0 | 5-3 | 4-8 | 4-0 | 3-9 | 3-1 | 3-0 |
| | 1-#5 | 40,000 | 6-2 | 6-9 | 5-2 | 5-4 | 4-9 | 4-1 | 3-10 | 3-2 | 3-1 |
| | | 60,000 | 7-5 | 8-1 | 6-2 | 6-5 | 5-9 | 4-11 | 4-7 | 3-9 | 3-8 |
| | 2-#4<br>1-#6 | 40,000 | 6-11 | 7-6 | 5-9 | 6-0 | 5-4 | 4-7 | 4-4 | 3-6 | 3-5 |
| | | 60,000 | 8-3 | 9-0 | 6-11 | 7-2 | 6-5 | 5-6 | 5-2 | 4-2 | 4-1 |
| | 2-#5 | 40,000 | 8-5 | 9-2 | 7-0 | 7-3 | 6-6 | 5-7 | 5-3 | 4-2 | 4-0 |
| | | 60,000 | DR | DR | DR | DR | DR | DR | DR | DR | DR |
| | Center distance $A$[k, l] | | 2-1 | 2-6 | 1-5 | 1-6 | 1-3 | 0-11 | 0-10 | 0-6 | 0-6 |
| 12 | Span without stirrups[i, j] | | 4-10 | 5-8 | 4-0 | 4-2 | 3-9 | 3-2 | 3-0 | 2-7 | 2-6 |
| | 1-#4 | 40,000 | 5-5 | 6-1 | 4-8 | 4-10 | 4-4 | 3-9 | 3-6 | 2-10 | 2-10 |
| | | 60,000 | 6-7 | 7-5 | 5-8 | 5-11 | 5-4 | 4-7 | 4-3 | 3-6 | 3-5 |
| | 1-#5 | 40,000 | 6-9 | 7-7 | 5-9 | 6-0 | 5-5 | 4-8 | 4-4 | 3-7 | 3-6 |
| | | 60,000 | 9-4 | 10-6 | 8-1 | 8-4 | 7-6 | 6-6 | 6-1 | 5-0 | 4-10 |
| | 2-#4<br>1-#6 | 40,000 | 8-8 | 9-9 | 7-6 | 7-9 | 7-0 | 6-0 | 5-8 | 4-7 | 4-6 |
| | | 60,000 | 10-6 | 11-9 | 9-1 | 9-5 | 8-5 | 7-3 | 6-10 | 5-7 | 5-5 |
| | 2-#5 | 40,000 | 10-8 | 12-0 | 9-3 | 9-7 | 8-7 | 7-5 | 6-11 | 5-6 | 5-4 |
| | | 60,000 | 12-10 | 14-5 | 11-1 | 11-6 | 10-4 | 8-11 | 8-4 | 6-7 | 6-4 |
| | 2-#6 | 40,000 | 12-7 | 14-2 | 10-10 | 11-3 | 10-2 | 8-3 | 7-6 | 5-6 | 5-4 |
| | | 60,000 | DR | DR | DR | DR | DR | DR | DR | DR | DR |
| | Center distance $A$[k, l] | | 3-2 | 4-0 | 2-4 | 2-6 | 2-0 | 1-6 | 1-4 | 0-11 | 0-10 |
| 16 | Span without stirrups[i, j] | | 6-5 | 7-9 | 5-7 | 5-10 | 5-2 | 4-5 | 4-2 | 3-7 | 3-6 |
| | 1-#4 | 40,000 | 6-2 | 7-1 | 5-6 | 5-8 | 5-1 | 4-5 | 4-2 | 3-5 | 3-4 |
| | | 60,000 | 7-6 | 8-8 | 6-8 | 6-11 | 6-3 | 5-5 | 5-1 | 4-2 | 4-0 |
| | 1-#5 | 40,000 | 7-8 | 8-10 | 6-10 | 7-1 | 6-4 | 5-6 | 5-2 | 4-3 | 4-1 |
| | | 60,000 | 9-4 | 10-9 | 8-4 | 8-7 | 7-9 | 6-8 | 6-3 | 5-2 | 5-0 |
| | 2-#4<br>1-#6 | 40,000 | 8-8 | 10-0 | 7-8 | 8-0 | 7-2 | 6-2 | 5-10 | 4-9 | 4-8 |
| | | 60,000 | 12-0 | 13-11 | 10-9 | 11-2 | 10-0 | 8-8 | 8-1 | 6-8 | 6-6 |
| | 2-#5 | 40,000 | 12-3 | 14-2 | 11-0 | 11-4 | 10-3 | 8-10 | 8-3 | 6-9 | 6-7 |
| | | 60,000 | 14-10 | 17-2 | 13-3 | 13-8 | 12-4 | 10-8 | 10-0 | 7-11 | 7-8 |
| | 2-#6 | 40,000 | 14-6 | 16-10 | 13-0 | 13-5 | 12-1 | 10-1 | 9-2 | 6-11 | 6-8 |
| | | 60,000 | 17-5 | 20-2 | 15-7 | 16-1 | 14-6 | 11-10 | 10-8 | 7-11 | 7-8 |
| | Center distance $A$[k, l] | | 4-1 | 5-5 | 3-3 | 3-6 | 2-10 | 2-1 | 1-10 | 1-3 | 1-2 |

*(continued)*

**TABLE R608.8(4)—continued**
**MAXIMUM ALLOWABLE CLEAR SPANS FOR 8-INCH-NOMINAL THICK FLAT LINTELS IN LOAD-BEARING WALLS[a, b, c, d, e, f, m]**
**ROOF CLEAR SPAN 40 FEET AND FLOOR CLEAR SPAN 32 FEET**

| LINTEL DEPTH, $D$[g] (inches) | NUMBER OF BARS AND BAR SIZE IN TOP AND BOTTOM OF LINTEL | STEEL YIELD STRENGTH[h], $f_y$ (psi) | DESIGN LOADING CONDITION DETERMINED FROM TABLE R608.8(1) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | | 3 | | 4 | | 5 | |
| | | | Maximum ground snow load (psf) | | | | | | | | |
| | | | — | 30 | 70 | 30 | 70 | 30 | 70 | 30 | 70 |
| | | | Maximum clear span of lintel (feet - inches) | | | | | | | | |
| 20 | Span without stirrups[i, j] | | 7-10 | 9-10 | 7-1 | 7-5 | 6-7 | 5-8 | 5-4 | 4-7 | 4-6 |
| | 1-#5 | 40,000 | 8-4 | 9-11 | 7-8 | 8-0 | 7-2 | 6-3 | 5-10 | 4-9 | 4-8 |
| | | 60,000 | 10-2 | 12-1 | 9-5 | 9-9 | 8-9 | 7-7 | 7-1 | 5-10 | 5-8 |
| | 2-#4 1-#6 | 40,000 | 9-5 | 11-3 | 8-8 | 9-0 | 8-1 | 7-0 | 6-7 | 5-5 | 5-3 |
| | | 60,000 | 11-6 | 13-8 | 10-7 | 11-0 | 9-11 | 8-7 | 8-0 | 6-7 | 6-5 |
| | 2-#5 | 40,000 | 11-9 | 13-11 | 10-10 | 11-2 | 10-1 | 8-9 | 8-2 | 6-8 | 6-7 |
| | | 60,000 | 16-4 | 19-5 | 15-0 | 15-7 | 14-0 | 12-2 | 11-4 | 9-3 | 9-0 |
| | 2-#6 | 40,000 | 16-0 | 19-0 | 14-9 | 15-3 | 13-9 | 11-10 | 10-10 | 8-3 | 8-0 |
| | | 60,000 | 19-3 | 22-11 | 17-9 | 18-5 | 16-7 | 13-7 | 12-4 | 9-3 | 9-0 |
| | Center distance $A$[k, l] | | 4-10 | 6-10 | 4-1 | 4-5 | 3-7 | 2-8 | 2-4 | 1-7 | 1-6 |
| 24 | Span without stirrups[i, j] | | 9-2 | 11-9 | 8-7 | 8-11 | 8-0 | 6-11 | 6-6 | 5-7 | 5-6 |
| | 1-#5 | 40,000 | 8-11 | 10-10 | 8-6 | 8-9 | 7-11 | 6-10 | 6-5 | 5-3 | 5-2 |
| | | 60,000 | 10-11 | 13-3 | 10-4 | 10-8 | 9-8 | 8-4 | 7-10 | 6-5 | 6-3 |
| | 2-#4 1-#6 | 40,000 | 10-1 | 12-3 | 9-7 | 9-11 | 8-11 | 7-9 | 7-3 | 6-0 | 5-10 |
| | | 60,000 | 12-3 | 15-0 | 11-8 | 12-1 | 10-11 | 9-5 | 8-10 | 7-3 | 7-1 |
| | 2-#5 | 40,000 | 12-6 | 15-3 | 11-11 | 12-4 | 11-1 | 9-7 | 9-0 | 7-5 | 7-3 |
| | | 60,000 | 17-6 | 21-3 | 16-7 | 17-2 | 15-6 | 13-5 | 12-7 | 10-4 | 10-1 |
| | 2-#6 | 40,000 | 17-2 | 20-11 | 16-3 | 16-10 | 15-3 | 13-2 | 12-4 | 9-7 | 9-4 |
| | | 60,000 | 20-9 | 25-3 | 19-8 | 20-4 | 18-5 | 15-4 | 14-0 | 10-7 | 10-3 |
| | Center distance $A$[k, l] | | 5-6 | 8-1 | 4-11 | 5-3 | 4-4 | 3-3 | 2-10 | 1-11 | 1-10 |

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per square inch = 6.895 kPa, 1 pound per square foot = 0.0479 kPa, Grade 40 = 280 MPa; Grade 60 = 420 MPa.

**Note:** Top and bottom reinforcement for lintels without stirrups, as shown in shaded cells, shall be equal to or greater than that required for 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.

a. See Table R608.3 for tolerances permitted from nominal thickness.

b. Table values are based on concrete with a minimum specified compressive strength of 2,500 psi. See Note j.

c. Table values are based on uniform loading. See Section R608.8.2 for lintels supporting concentrated loads.

d. Deflection criterion is $L/240$, where $L$ is the clear span of the lintel in inches, or $^1/_2$ inch, whichever is less.

e. Linear interpolation is permitted between ground snow loads and between lintel depths.

f. DR indicates design required.

g. 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.

h. Stirrups shall be fabricated from reinforcing bars with the same yield strength as that used for the main longitudinal reinforcement.

i. Allowable clear span without stirrups applicable to all lintels of the same depth, $D$. Top and bottom reinforcement for lintels without stirrups shall be not 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 $d/2$.

j. Where concrete with a minimum specified compressive strength of 3,000 psi 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.

k. Center distance, $A$, is the center portion of the clear span where stirrups are not required. This is applicable to all longitudinal bar sizes and steel yield strengths.

l. Where concrete with a minimum specified compressive strength of 3,000 psi is used, center distance, $A$, shall be permitted to be multiplied by 1.10.

m. The maximum clear opening width between two solid wall segments shall be 18 feet. See Section R608.7.2.1. Lintel clear spans in the table greater than 18 feet are shown for interpolation and information only.

**TABLE R608.8(5)**
**MAXIMUM ALLOWABLE CLEAR SPANS FOR 10-INCH-NOMINAL THICK FLAT LINTELS IN LOAD-BEARING WALLS[a, b, c, d, e, f, m]**
**ROOF CLEAR SPAN 40 FEET AND FLOOR CLEAR SPAN 32 FEET**

| LINTEL DEPTH, $D$[g] (inches) | NUMBER OF BARS AND BAR SIZE IN TOP AND BOTTOM OF LINTEL | STEEL YIELD STRENGTH[h], $f_y$ (psi) | DESIGN LOADING CONDITION DETERMINED FROM TABLE R608.8(1) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | | 3 | | 4 | | 5 | |
| | | | Maximum ground snow load (psf) | | | | | | | | |
| | | | — | 30 | 70 | 30 | 70 | 30 | 70 | 30 | 70 |
| | | | Maximum clear span of lintel (feet - inches) | | | | | | | | |
| 8 | Span without stirrups[i, j] | | 6-0 | 7-2 | 4-7 | 4-10 | 4-1 | 3-1 | 2-11 | 2-3 | 2-2 |
| | 1-#4 | 40,000 | 4-3 | 4-9 | 3-7 | 3-9 | 3-4 | 2-9 | 2-7 | 2-1 | 2-1 |
| | | 60,000 | 5-11 | 6-7 | 5-0 | 5-3 | 4-8 | 3-10 | 3-8 | 2-11 | 2-11 |
| | 1-#5 | 40,000 | 6-1 | 6-9 | 5-2 | 5-4 | 4-9 | 3-11 | 3-9 | 3-0 | 2-11 |
| | | 60,000 | 7-4 | 8-1 | 6-3 | 6-5 | 5-9 | 4-9 | 4-6 | 3-7 | 3-7 |
| | 2-#4 1-#6 | 40,000 | 6-10 | 7-6 | 5-9 | 6-0 | 5-5 | 4-5 | 4-2 | 3-4 | 3-4 |
| | | 60,000 | 8-2 | 9-1 | 6-11 | 7-2 | 6-6 | 5-4 | 5-0 | 4-1 | 4-0 |
| | 2-#5 | 40,000 | 8-4 | 9-3 | 7-1 | 7-4 | 6-7 | 5-5 | 5-1 | 4-1 | 4-0 |
| | | 60,000 | 9-11 | 11-0 | 8-5 | 8-9 | 7-10 | 6-6 | 6-1 | 4-8 | 4-6 |
| | 2-#6 | 40,000 | 9-9 | 10-10 | 8-3 | 8-7 | 7-9 | 6-4 | 5-10 | 4-1 | 4-0 |
| | | 60,000 | DR | DR | DR | DR | DR | DR | DR | DR | DR |
| | Center distance $A$[k, l] | | 2-6 | 3-1 | 1-10 | 1-11 | 1-7 | 1-1 | 0-11 | 0-7 | 0-7 |
| 12 | Span without stirrups[i, j] | | 5-5 | 6-7 | 4-7 | 4-10 | 4-3 | 3-5 | 3-3 | 2-8 | 2-8 |
| | 1-#4 | 40,000 | 5-3 | 6-0 | 4-8 | 4-10 | 4-4 | 3-7 | 3-4 | 2-9 | 2-8 |
| | | 60,000 | 6-5 | 7-4 | 5-8 | 5-10 | 5-3 | 4-4 | 4-1 | 3-4 | 3-3 |
| | 1-#5 | 40,000 | 6-6 | 7-6 | 5-9 | 6-0 | 5-5 | 4-5 | 4-2 | 3-5 | 3-4 |
| | | 60,000 | 7-11 | 9-1 | 7-0 | 7-3 | 6-7 | 5-5 | 5-1 | 4-2 | 4-0 |
| | 2-#4 1-#6 | 40,000 | 7-4 | 8-5 | 6-6 | 6-9 | 6-1 | 5-0 | 4-9 | 3-10 | 3-9 |
| | | 60,000 | 10-3 | 11-9 | 9-1 | 9-5 | 8-6 | 7-0 | 6-7 | 5-4 | 5-3 |
| | 2-#5 | 40,000 | 10-5 | 12-0 | 9-3 | 9-7 | 8-8 | 7-2 | 6-9 | 5-5 | 5-4 |
| | | 60,000 | 12-7 | 14-5 | 11-2 | 11-6 | 10-5 | 8-7 | 8-1 | 6-6 | 6-4 |
| | 2-#6 | 40,000 | 12-4 | 14-2 | 10-11 | 11-4 | 10-2 | 8-5 | 7-8 | 5-7 | 5-5 |
| | | 60,000 | 14-9 | 17-0 | 13-1 | 13-6 | 12-2 | 10-0 | 9-1 | 6-6 | 6-4 |
| | Center distance $A$[k, l] | | 3-9 | 4-11 | 2-11 | 3-2 | 2-7 | 1-9 | 1-7 | 1-0 | 1-0 |
| 16 | Span without stirrups[i, j] | | 7-1 | 9-0 | 6-4 | 6-8 | 5-10 | 4-9 | 4-6 | 3-9 | 3-8 |
| | 1-#4 | 40,000 | 5-11 | 7-0 | 5-5 | 5-8 | 5-1 | 4-3 | 4-0 | 3-3 | 3-2 |
| | | 60,000 | 7-3 | 8-7 | 6-8 | 6-11 | 6-3 | 5-2 | 4-10 | 3-11 | 3-10 |
| | 1-#5 | 40,000 | 7-4 | 8-9 | 6-9 | 7-0 | 6-4 | 5-3 | 4-11 | 4-0 | 3-11 |
| | | 60,000 | 9-0 | 10-8 | 8-3 | 8-7 | 7-9 | 6-5 | 6-0 | 4-11 | 4-9 |
| | 2-#4 1-#6 | 40,000 | 8-4 | 9-11 | 7-8 | 7-11 | 7-2 | 5-11 | 5-7 | 4-6 | 4-5 |
| | | 60,000 | 10-2 | 12-0 | 9-4 | 9-8 | 8-9 | 7-3 | 6-10 | 5-6 | 5-5 |
| | 2-#5 | 40,000 | 10-4 | 12-3 | 9-6 | 9-10 | 8-11 | 7-4 | 6-11 | 5-8 | 5-6 |
| | | 60,000 | 14-4 | 17-1 | 13-3 | 13-8 | 12-4 | 10-3 | 9-8 | 7-10 | 7-8 |
| | 2-#6 | 40,000 | 14-1 | 16-9 | 13-0 | 13-5 | 12-2 | 10-1 | 9-6 | 7-0 | 6-10 |
| | | 60,000 | 17-0 | 20-2 | 15-8 | 16-2 | 14-7 | 12-0 | 10-11 | 8-0 | 7-9 |
| | Center distance $A$[k, l] | | 4-9 | 6-8 | 4-0 | 4-4 | 3-6 | 2-5 | 2-2 | 1-5 | 1-4 |

*(continued)*

**TABLE R608.8(5)—continued**
**MAXIMUM ALLOWABLE CLEAR SPANS FOR 10-INCH-NOMINAL THICK FLAT LINTELS IN LOAD-BEARING WALLS[a, b, c, d, e, f, m]**
**ROOF CLEAR SPAN 40 FEET AND FLOOR CLEAR SPAN 32 FEET**

| LINTEL DEPTH, $D$[g] (inches) | NUMBER OF BARS AND BAR SIZE IN TOP AND BOTTOM OF LINTEL | STEEL YIELD STRENGTH[h], $f_y$ (psi) | DESIGN LOADING CONDITION DETERMINED FROM TABLE R608.8(1) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | | 3 | | 4 | | 5 | |
| | | | Maximum ground snow load (psf) | | | | | | | | |
| | | | — | 30 | 70 | 30 | 70 | 30 | 70 | 30 | 70 |
| | | | Maximum clear span of lintel (feet - inches) | | | | | | | | |
| 20 | Span without stirrups[i, j] | | 8-7 | 11-4 | 8-1 | 8-5 | 7-5 | 6-1 | 5-9 | 4-10 | 4-9 |
| | 1-#4 | 40,000 | 6-5 | 7-10 | 6-2 | 6-4 | 5-9 | 4-9 | 4-6 | 3-8 | 3-7 |
| | | 60,000 | 7-10 | 9-7 | 7-6 | 7-9 | 7-0 | 5-10 | 5-6 | 4-5 | 4-4 |
| | 1-#5 | 40,000 | 8-0 | 9-9 | 7-8 | 7-11 | 7-2 | 5-11 | 5-7 | 4-6 | 4-5 |
| | | 60,000 | 9-9 | 11-11 | 9-4 | 9-8 | 8-9 | 7-3 | 6-10 | 5-6 | 5-5 |
| | 2-#4 1-#6 | 40,000 | 9-0 | 11-1 | 8-8 | 8-11 | 8-1 | 6-9 | 6-4 | 5-2 | 5-0 |
| | | 60,000 | 11-0 | 13-6 | 10-6 | 10-11 | 9-10 | 8-2 | 7-9 | 6-3 | 6-2 |
| | 2-#5 | 40,000 | 11-3 | 13-9 | 10-9 | 11-1 | 10-0 | 8-4 | 7-10 | 6-5 | 6-3 |
| | | 60,000 | 15-8 | 19-2 | 15-0 | 15-6 | 14-0 | 11-8 | 11-0 | 8-11 | 8-9 |
| | 2-#6 | 40,000 | 15-5 | 18-10 | 14-8 | 15-2 | 13-9 | 11-5 | 10-9 | 8-6 | 8-3 |
| | | 60,000 | 18-7 | 22-9 | 17-9 | 18-5 | 16-7 | 13-10 | 12-9 | 9-5 | 9-2 |
| | Center distance $A$[k, l] | | 5-7 | 8-4 | 5-1 | 5-5 | 4-5 | 3-1 | 2-9 | 1-10 | 1-9 |
| 24 | Span without stirrups[i, j] | | 9-11 | 13-7 | 9-9 | 10-2 | 9-0 | 7-5 | 7-0 | 5-10 | 5-9 |
| | 1-#5 | 40,000 | 8-6 | 10-8 | 8-5 | 8-8 | 7-10 | 6-6 | 6-2 | 5-0 | 4-11 |
| | | 60,000 | 10-5 | 13-0 | 10-3 | 10-7 | 9-7 | 8-0 | 7-6 | 6-1 | 6-0 |
| | 2-#4 1-#6 | 40,000 | 9-7 | 12-1 | 9-6 | 9-9 | 8-10 | 7-5 | 7-0 | 5-8 | 5-6 |
| | | 60,000 | 11-9 | 14-9 | 11-7 | 11-11 | 10-10 | 9-0 | 8-6 | 6-11 | 6-9 |
| | 2-#5 | 40,000 | 12-0 | 15-0 | 11-9 | 12-2 | 11-0 | 9-2 | 8-8 | 7-1 | 6-11 |
| | | 60,000 | 14-7 | 18-3 | 14-4 | 14-10 | 13-5 | 11-2 | 10-7 | 8-7 | 8-5 |
| | 2-#6 | 40,000 | 14-3 | 17-11 | 14-1 | 14-7 | 13-2 | 11-0 | 10-4 | 8-5 | 8-3 |
| | | 60,000 | 19-11 | 25-0 | 19-7 | 20-3 | 18-4 | 15-3 | 14-5 | 10-10 | 10-7 |
| | Center distance $A$[k, l] | | 6-3 | 9-11 | 6-1 | 6-6 | 5-4 | 3-9 | 3-4 | 2-2 | 2-1 |

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per square inch = 6.895 kPa, 1 pound per square foot = 0.0479 kPa, Grade 40 = 280 MPa, Grade 60 = 420 MPa.

**Note:** Top and bottom reinforcement for lintels without stirrups, as shown in shaded cells, shall be equal to or greater than that required for 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.

a. See Table R608.3 for tolerances permitted from nominal thickness.

b. Table values are based on concrete with a minimum specified compressive strength of 2,500 psi. See Note j.

c. Table values are based on uniform loading. See Section R608.8.2 for lintels supporting concentrated loads.

d. Deflection criterion is $L/240$, where $L$ is the clear span of the lintel in inches, or $^1/_2$ inch, whichever is less.

e. Linear interpolation is permitted between ground snow loads and between lintel depths.

f. DR indicates design required.

g. 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.

h. Stirrups shall be fabricated from reinforcing bars with the same yield strength as that used for the main longitudinal reinforcement.

i. Allowable clear span without stirrups applicable to all lintels of the same depth, $D$. Top and bottom reinforcement for lintels without stirrups shall be not 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 $d/2$.

j. Where concrete with a minimum specified compressive strength of 3,000 psi 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.

k. Center distance, $A$, is the center portion of the clear span where stirrups are not required. This is applicable to all longitudinal bar sizes and steel yield strengths.

l. Where concrete with a minimum specified compressive strength of 3,000 psi is used, center distance, $A$, shall be permitted to be multiplied by 1.10.

m. The maximum clear opening width between two solid wall segments shall be 18 feet. See Section R608.7.2.1. Lintel clear spans in the table greater than 18 feet are shown for interpolation and information only.

**TABLE R608.8(6)**
**MAXIMUM ALLOWABLE CLEAR SPANS FOR 6-INCH-THICK WAFFLE-GRID LINTELS IN LOAD-BEARING WALLS[a, b, c, d, e, f, o]**
**MAXIMUM ROOF CLEAR SPAN 40 FEET AND MAXIMUM FLOOR SPAN 32 FEET**

| LINTEL DEPTH, $D$[g] (inches) | NUMBER OF BARS AND BAR SIZE IN TOP AND BOTTOM OF LINTEL | STEEL YIELD STRENGTH[h], $f_y$ (psi) | DESIGN LOADING CONDITION DETERMINED FROM TABLE R608.8(1) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | | 3 | | 4 | | 5 | |
| | | | Maximum ground snow load (psf) | | | | | | | | |
| | | | — | 30 | 70 | 30 | 70 | 30 | 70 | 30 | 70 |
| | | | Maximum clear span of lintel (feet - inches) | | | | | | | | |
| 8[i] | Span without stirrups[k, l] | | 2-7 | 2-9 | 2-0 | 2-1 | 2-0 | 2-0 | 2-0 | 2-0 | 2-0 |
| | 1-#4 | 40,000 | 5-2 | 5-5 | 4-0 | 4-3 | 3-7 | 3-3 | 2-11 | 2-4 | 2-3 |
| | | 60,000 | 5-9 | 6-3 | 4-0 | 4-3 | 3-7 | 3-3 | 2-11 | 2-4 | 2-3 |
| | 1-#5 | 40,000 | 5-9 | 6-3 | 4-0 | 4-3 | 3-7 | 3-3 | 2-11 | 2-4 | 2-3 |
| | | 60,000 | 5-9 | 6-3 | 4-0 | 4-3 | 3-7 | 3-3 | 2-11 | 2-4 | 2-3 |
| | 2-#4<br>1-#6 | 40,000 | 5-9 | 6-3 | 4-0 | 4-3 | 3-7 | 3-3 | 2-11 | 2-4 | 2-3 |
| | | 60,000 | DR | DR | DR | DR | DR | DR | DR | DR | DR |
| | Center distance $A$[m, n] | | 0-9 | 0-10 | 0-6 | 0-6 | 0-5 | 0-5 | 0-4 | STL | STL |
| 12[i] | Span without stirrups[k, l] | | 2-11 | 3-1 | 2-6 | 2-7 | 2-5 | 2-4 | 2-3 | 2-1 | 2-0 |
| | 1-#4 | 40,000 | 5-9 | 6-2 | 4-8 | 4-10 | 4-4 | 4-1 | 3-9 | 3-2 | 3-1 |
| | | 60,000 | 8-0 | 8-7 | 6-6 | 6-9 | 6-0 | 5-5 | 4-11 | 3-11 | 3-10 |
| | 1-#5 | 40,000 | 8-1 | 8-9 | 6-8 | 6-11 | 6-0 | 5-5 | 4-11 | 3-11 | 3-10 |
| | | 60,000 | 9-1 | 10-3 | 6-8 | 7-0 | 6-0 | 5-5 | 4-11 | 3-11 | 3-10 |
| | 2-#4<br>1-#6 | 40,000 | 9-1 | 9-9 | 6-8 | 7-0 | 6-0 | 5-5 | 4-11 | 3-11 | 3-10 |
| | Center distance $A$[m, n] | | 1-3 | 1-5 | 0-10 | 0-11 | 0-9 | 0-8 | 0-6 | STL | STL |
| | Span without stirrups[k, l] | | 4-0 | 4-4 | 3-6 | 3-7 | 3-4 | 3-3 | 3-1 | 2-10 | 2-10 |
| 16[i] | 1-#4 | 40,000 | 6-7 | 7-3 | 5-6 | 5-9 | 5-2 | 4-10 | 4-6 | 3-9 | 3-8 |
| | | 60,000 | 8-0 | 8-10 | 6-9 | 7-0 | 6-3 | 5-11 | 5-5 | 4-7 | 4-5 |
| | 1-#5 | 40,000 | 8-2 | 9-0 | 6-11 | 7-2 | 6-5 | 6-0 | 5-7 | 4-8 | 4-6 |
| | | 60,000 | 11-5 | 12-6 | 9-3 | 9-9 | 8-4 | 7-7 | 6-10 | 5-6 | 5-4 |
| | 2-#4<br>1-#6 | 40,000 | 10-7 | 11-7 | 8-11 | 9-3 | 8-3 | 7-7 | 6-10 | 5-6 | 5-4 |
| | | 60,000 | 12-2 | 14-0 | 9-3 | 9-9 | 8-4 | 7-7 | 6-10 | 5-6 | 5-4 |
| | 2-#5 | 40,000 | 12-2 | 14-2 | 9-3 | 9-9 | 8-4 | 7-7 | 6-10 | 5-6 | 5-4 |
| | | 60,000 | DR | DR | DR | DR | DR | DR | DR | DR | DR |
| | Center distance $A$[m, n] | | 1-8 | 2-0 | 1-2 | 1-3 | 1-0 | 0-11 | 0-9 | STL | STL |
| 20[i] | Span without stirrups[k, l] | | 5-0 | 5-6 | 4-6 | 4-7 | 4-3 | 4-1 | 4-0 | 3-8 | 3-8 |
| | 1-#4 | 40,000 | 7-2 | 8-2 | 6-3 | 6-6 | 5-10 | 5-6 | 5-1 | 4-3 | 4-2 |
| | | 60,000 | 8-11 | 9-11 | 7-8 | 7-11 | 7-1 | 6-8 | 6-2 | 5-2 | 5-0 |
| | 1-#5 | 40,000 | 9-1 | 10-2 | 7-9 | 8-1 | 7-3 | 6-10 | 6-4 | 5-4 | 5-2 |
| | | 60,000 | 12-8 | 14-2 | 10-11 | 11-3 | 10-2 | 9-6 | 8-9 | 7-1 | 6-10 |
| | 2-#4<br>1-#6 | 40,000 | 10-3 | 11-5 | 8-9 | 9-1 | 8-2 | 7-8 | 7-1 | 6-0 | 5-10 |
| | | 60,000 | 14-3 | 15-11 | 11-9 | 12-5 | 10-8 | 9-9 | 8-9 | 7-1 | 6-10 |
| | 2-#5 | 40,000 | 14-6 | 16-3 | 11-6 | 12-1 | 10-4 | 9-6 | 8-6 | 6-11 | 6-8 |
| | | 60,000 | DR | DR | DR | DR | DR | DR | DR | DR | DR |
| | Center distance $A$[m, n] | | 2-0 | 2-6 | 1-6 | 1-7 | 1-3 | 1-1 | 1-0 | STL | STL |

*(continued)*