General Shale Brick

Lintel Table

	Maximum Span (35psf)			Maximum Span (27.5 psf)	
Angle	Stress	Deflection		Stress	Deflection
3 x 3 x 3/16	9'	6'		10'	7'
3 x 3 x 5/16	11'	7'		12'	8'
3-1/2 x 3 x 1/4	11'	8'		12'	8'
3-1/2 x 3-1/2 x 1/4	11'	8'		12'	8'
3-1/2 x 3-1/2 x 5/16	12'	8'		13'	9'
4 x 3 x 1/4	12'	9'		13'	9'
4 x 3-1/2 x 5/16	13'	9'		14'	10'
5 x 3 x 5/16	14'	11'		15'	11'
5 x 3-1/2 x 5/16	14'	11'		16'	11'
5 x 5 x 3/8	17'	12'		18'	12'
6 x 3-1/2 x 3/8	17'	13'		18'	14'
6 x 4 x 3/8	17'	13'		19'	14'
6 x 4 x 5/16	16'	12'		18'	13'
8 x 4 x 1/2	22'	17'		23'	18'
7 x 4 x 1/2	20’	16’		22’	16’
Proposed by Estate Products					
3-1/2 x 3 x 3/16 (65 ksi)	12’	7’		13’	8’
3-1/2 x 3 x 3/16 (36 ksi)	10’	7’		11’	8’
3-3/4 x 2-3/4 x 3/16 (60 ksi)	12’	8’		13’	8’
3-3/4 x 2-3/4 x 3/16 (36 ksi)	10’	8’		11’	8’
3-1/2 x 2-1/2 x 1/4 (60 ksi)	12’	8’		14’	8’
3-1/2 x 2-1/2 x 1/4 (36 ksi)	10’	8’		11’	8’

NOTES:

- Minimum bearing of 4 inches on each end of lintel
- Contractor is responsible for verifying lintel size and acceptability
- L/2 = height above lintel
- Long leg is in the vertical orientation
- Allowable deflection is L/360
- 35 psf applies to Modular and Engineer Modular sizes
- 27.5 psf applies to Lightweight Queen and Lightweight King sizes

2018 IRC Lintel Information

R703.8.3 Lintels. Masonry veneer shall not support any vertical load other than the dead load of the veneer above. Veneer above openings shall be supported on lintels of noncombustible materials. The lintels shall have a length of bearing not less than 4 inches (102 mm). Steel lintels shall be shop coated with a rust-inhibitive paint, except for lintels made of corrosion-resistant steel or steel treated with coatings to provide corrosion resistance. Construction of openings shall comply with either Section R703.8.3.1 or 703.8.3.2.

R703.8.3.1 Allowable span. The allowable span shall not exceed the values set forth in Table R703.8.3.1.

R703.8.3.2 Maximum span. The allowable span shall not exceed 18 feet 3 inches (5562 mm) and shall be constructed to comply with Figure R703.8.3.2 and the following:

1. Provide a minimum length of 18 inches (457 mm) of masonry veneer on each side of opening as shown in Figure R703.8.3.2.
2. Provide a minimum 5-inch by $3^1/_2$-inch by $^5/_{16}$-inch (127 mm by 89 mm by 7.9 mm) steel angle above the opening and shore for a minimum of 7 days after installation.
3. Provide double-wire joint reinforcement extending 12 inches (305 mm) beyond each side of the opening. Lap splices of joint reinforcement not less than 12 inches (305 mm). Comply with one of the following:
   - 3.1. Double-wire joint reinforcement shall be $^3/_{16}$-inch (4.8 mm) diameter and shall be placed in the first two bed joints above the opening.
   - 3.2. Double-wire joint reinforcement shall be 9 gauge (0.144 inch or 3.66 mm diameter) and shall be placed in the first three bed joints above the opening.
4. Provide the height of masonry veneer above opening, in accordance with Table R703.8.3.2.

TABLE R703.8.3.2
HEIGHT OF MASONRY VENEER ABOVE OPENING

MINIMUM HEIGHT OF MASONRY VENEER ABOVE OPENING (INCH)	MAXIMUM HEIGHT OF MASONRY VENEER ABOVE OPENING (FEET)
13	< 5
24	5 to < 12
60	12 to height above support allowed by Section R703.8

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm.

TABLE R703.8.3.1
ALLOWABLE SPANS FOR LINTELS SUPPORTING MASONRY VENEER[a, b, c, d]

SIZE OF STEEL ANGLE[a, c, d] (inches)	NO STORY ABOVE	ONE STORY ABOVE	TWO STORIES ABOVE	NO. OF $^1/_2$-INCH OR EQUIVALENT REINFORCING BARS IN REINFORCED LINTEL[b, d]
$3 \times 3 \times {}^1/_4$	6′-0″	4′-6″	3′-0″	1
$4 \times 3 \times {}^1/_4$	8′-0″	6′-0″	4′-6″	1
$5 \times 3^1/_2 \times {}^5/_{16}$	10′-0″	8′-0″	6′-0″	2
$6 \times 3^1/_2 \times {}^5/_{16}$	14′-0″	9′-6″	7′-0″	2
$2\text{-}6 \times 3^1/_2 \times {}^5/_{16}$	20′-0″	12′-0″	9′-6″	4

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm.

a. Long leg of the angle shall be placed in a vertical position.
b. Depth of reinforced lintels shall be not less than 8 inches and all cells of hollow masonry lintels shall be grouted solid. Reinforcing bars shall extend not less than 8 inches into the support.
c. Steel members indicated are adequate typical examples; other steel members meeting structural design requirements shall be permitted to be used.
d. Either steel angle or reinforced lintel shall span opening.

Lintel Table

Long Span Lintels

Large masonry openings can require heavy and expensive steel lintels. However, many building code officials recognize an alternate method of support that incorporates the concept of reinforcing the brick veneer. This technique allows the use of ladder wire joint reinforcing in the first few horizontal mortar joints above the openings illustrated in the diagram below.

Construction Consideration

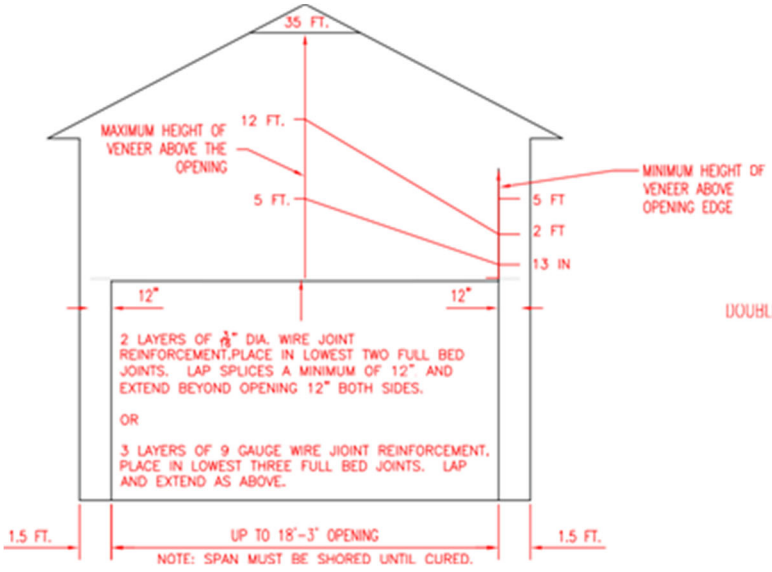
1. The maximum opening allowed by this method is 18 feet 3 inches with a minimum of 1 foot 6 inches of brick required on either side of the opening. A maximum height of 5 feet of brick may be supported above the opening provided there is a minimum of 13 inches of veneer above the opening edges (*approximately 5 brick courses*).

3. A maximum height of 12 feet of brick may be supported above the opening provided there is a minimum of 2 feet of veneer above the opening edges (*approximately 9 brick courses*).

4. A maximum height of 35 feet of brick may be supported above the opening provided there is a minimum of 5 feet of veneer above the opening edges (*approximately 22 brick courses*).

5. Care must be taken with the placement of additional openings (i.e. windows) above the garage opening. If the height of veneer is less than 3 feet no openings should be placed. For veneer heights above 3 feet the depth of openings should be limited to ½ the height of the veneer and they must be placed within 12 inches of the bottom and 6 inches from the top of the veneer.

6. A 5” x 3½” x $^{5}/_{16}$” angle should be used to facilitate installation and *should be shored for at least 7 days after installation.*



Long Span Brick Veneer Lintel
(Drawing Not to Scale)

Reinforcing Options