STOCK SOLID LINTEL SIZING OVERVIEW

4" x 8" SOLID LINTELS

Lintel Length
30" to 68"

Lintel Length
72" to 88"

Lintel Length
90" to 96"

Lintel Length
102" to 144"

6" x 8" SOLID LINTELS

Lintel Length
30" to 64"

Lintel Length
72" to 88"

Lintel Length
90" to 96"

Lintel Length
104" to 144"

8" x 8" SOLID LINTELS

Lintel Length
40" to 64"

Lintel Length
72" to 88"

Lintel Length
96"

Lintel Length
108" to 144"

Special rebar schedules available upon request.

Rebar is grade 60 steel ASTM 615
Concrete compressive strength is 3,000 PSI
Minimum fire rating is 1 1/2 hours

Rebar placement:
Clearance from bottom: 1 1/2"
Clearance from top: 1 1/2"
**U-LINTEL SIZING OVERVIEW**

**6" x 8" U-LINTELS**
- #3 rebar
- #5 rebar

**8" x 8" U-LINTELS**
- #3 rebar
- #5 rebar

**10" x 8" U-LINTELS**
- #3 rebar
- #5 rebar

**12" x 8" U-LINTELS**
- #3 rebar
- #5 rebar

Notch to allow for seismic reinforcing.

U-lintels are available in lengths from 36" to 144".
All four widths are stocked in these lengths: 48, 56, 72, 88, 96, 144
All other lengths available by special request.
#3 and #5 rebar placed as shown. Special rebar schedules available upon request.

Rebar is grade 60 steel ASTM 615
5,000 PSI concrete mix design
Minimum fire rating is 1 1/2 hours

Rebar placement:
Clearance from bottom: 1 1/2"
Clearance from top: 1 1/2"
Load Tables

SOLID LINTELS:
4" x 8"
6" x 8"
8" x 8"

U-LINTELS:
6" x 8"
8" x 8"
10" x 8"
12" x 8"
### SOLID LINTELS - 4" x 8"

#### Design Data
- **f_y = 3,000 psi (minimum)**
- **f_y = 60,000 psi (per ASTM-A615)**
- Average weight per lineal foot of beam - 33 lbs
- **Seismic Capability**
- Design formulas as per ACI 318-12
- **Effective span "L" of lintel (centerline of bearing to centerline of bearing).**
- Weight of masonry block "W" PSF

#### Typical Section:
- **Width (W) = 3.625"**
- **Height (H) = 7.625"**
- Eff. Depth (d) = H-1-1/2" 1/2" bar dia.

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### Reinforcement

<table>
<thead>
<tr>
<th>1. Reinforcement rods (A_v)</th>
<th>Top</th>
<th>Bottom</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1) #3</td>
<td>(1) #4</td>
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<table>
<thead>
<tr>
<th>2. Nominal lintel length (inches)</th>
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<tbody>
<tr>
<td>3. Masonry opening L1 (inches)</td>
<td>16</td>
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<tr>
<td>4. Effective span L2 (inches)</td>
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<td>120</td>
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<td>136</td>
<td>144</td>
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<tr>
<td>5. Maximum allowable load Unfactored (lbs/ft.)</td>
<td>1145</td>
<td>982</td>
<td>861</td>
<td>808</td>
<td>763</td>
<td>687</td>
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<tr>
<td>Dead Load (lbs/ft.)</td>
<td>817</td>
<td>701</td>
<td>615</td>
<td>577</td>
<td>545</td>
<td>490</td>
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<tr>
<td>Live Load (lbs/ft.)</td>
<td>673</td>
<td>577</td>
<td>506</td>
<td>475</td>
<td>449</td>
<td>404</td>
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<td>144</td>
<td>135</td>
<td>130</td>
<td>126</td>
</tr>
<tr>
<td>6. Maximum bending moment capacity M_1 (ft.-lbs.)</td>
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</tbody>
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As a minimum, the lintels carry the apex area above the span. An example of the uniform equivalent apex load calculation follows.

- Hollow masonry block weights for determining uniform equivalent apex load on lintel:
  - 8" block weight = 35 psf (Hollow)
  - 12" block weight = 50 psf (Hollow)
- Equivalent load of apex area = .33 WL
- Effective span "L" of lintel (centerline of bearing to centerline of bearing).
- Weight of masonry block "W" PSF

**EXAMPLE**

Equivalent apex load for 4"x8" Lintel with effective span of 48"

Apex Load = (.33) (W) (L) = .33 (35psf/2) (48"/12) = 23#FT

Capacity of 4X8 lintel with effective span of 48" (from load table for live loads) = 572#/FT

Therefore, the lintel has significant excess capacity, if superimposed load is located within apex area, then refer to the load tables to ensure sufficient capacity.
### SOLID LINTELS - 6" x 8"

900 North Hartley Street, York, PA 17404 | 717.792.4700 | www.yorkbuilding.com

<table>
<thead>
<tr>
<th>6x8 SOLID LINTELS</th>
<th>3,000 psi (Dry mix)</th>
<th>Self Weight 42#/ft</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Reinforcement rods ($A_1$)</td>
<td>Top</td>
<td>Bottom</td>
</tr>
<tr>
<td>2. Nominal lintel length (inches)</td>
<td>32</td>
<td>40</td>
</tr>
<tr>
<td>3. Masonry opening $L_1$ (inches)</td>
<td>16</td>
<td>24</td>
</tr>
<tr>
<td>4. Effective span $L_2$ (inches)</td>
<td>24</td>
<td>32</td>
</tr>
<tr>
<td>5. Maximum allowable load Unfactored (lbs/ft.)</td>
<td>1717</td>
<td>1288</td>
</tr>
<tr>
<td>Dead Load (lbs/ft.)</td>
<td>1226</td>
<td>920</td>
</tr>
<tr>
<td>Live Load (lbs/ft.)</td>
<td>1010</td>
<td>757</td>
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<tr>
<td>6. Maximum bending moment capacity $M_1$ (ft.-lbs.)</td>
<td>5660</td>
<td>5660</td>
</tr>
</tbody>
</table>

**Design Data**

- $f_y = 3,000$ psi (minimum)
- $f_y = 60,000$ psi (per ASTM-A615)
- Average weight per lineal foot of beam = 50 lbs
- Seismic Capability
  - Design formulas as per ACI 318-12
  - $M_1$ = Moment governed by ultimate strength = $0.9(A_2)f_2(d-a/2)$
  - $V_n$ = Shear governed by ultimate strength
    - $M_1 = 1/8W_1$, $A_2 = V_n$
    - max $= \text{Maximum allowable deflection} = L/360 < 0.3\"$
- UL Fire Ratings 1-1/2 hour

**Typical Section**

- Width ($W$) = 5.625"
- Height ($H$) = 7.625"
- Eff. Depth ($d$) = $H - 1/2"$ 1/2" bar dia.

As a minimum, the lintels carry the apex area above the span. An example of the uniform equivalent apex load calculation follows.

Hollow masonry block weights for determining uniform equivalent apex load on lintel:

- 6" block weight = 32 lbs (Hollow)
- 12" block weight = 50 lbs (Hollow)

Equivalent load of apex area = $0.3W_L$

Effective span "L" of lintel (centerline of bearing to centerline of bearing).

Weight of masonry block "W" PSF

**EXAMPLE**

Equivalent apex load for 6"X8" Lintel with effective span of 48":

Apex Load = $0.3 \times (W) (L) = 0.3 \times (32\text{ lbs/ft}) \times (48\text{ ft}) = 4368\text{ lbs/ft}$

Capacity of 6x8 lintel with effective span of 48"

- From load table for live loads: $858\text{ lbs/ft}$

Therefore, the lintel has significant excess capacity, if superimposed load is located within the apex area, then refer to the load tables to ensure sufficient capacity.
### SOLID LINTELS - 8" x 8"

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#### 8x8 SOLID LINTELS

<table>
<thead>
<tr>
<th>1. Reinforcement rods (A1)</th>
<th>Top (2) #3</th>
<th>Bottom (2) #3</th>
<th>(2) #4</th>
<th>(2) #5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>2. Nominal lintel length (inches)</td>
<td>40</td>
<td>48</td>
<td>56</td>
<td>64</td>
</tr>
<tr>
<td>3. Masonry opening L1 (inches)</td>
<td>24</td>
<td>32</td>
<td>40</td>
<td>48</td>
</tr>
<tr>
<td>4. Effective span L2 (inches)</td>
<td>32</td>
<td>40</td>
<td>48</td>
<td>56</td>
</tr>
<tr>
<td>5. Maximum allowable load Unfactored (lbs/ft.)</td>
<td>1722</td>
<td>1374</td>
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<td>980</td>
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<td>Dead Load (lbs/ft.)</td>
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<td>817</td>
<td>700</td>
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<td>Live Load (lbs/ft.)</td>
<td>1013</td>
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<td>673</td>
<td>576</td>
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<tr>
<td>6. Maximum bending moment capacity M1 (ft.-lbs.)</td>
<td>2898</td>
<td>2898</td>
<td>2898</td>
<td>2898</td>
</tr>
</tbody>
</table>

#### Design Data

- f_x = 3,000 psi (minimum)
- f_y = 60,000 psi (per ASTM-A615)
- Seismic Capability
- Design formulas as per ACI 318-12
- \( M_e = \text{Moment governed by ultimate strength} = 0.9 \left( A_1 f_x \right) \left( d-a/2 \right) \)
- \( V_e = \text{Shear governed by ultimate strength} \)
- \( M_e = V_e / V_e \left( L_3 \right) \)
- \( V_e = 1/2 \left( W_e \right) \left( L_3 \right) \)
- \( \text{max} = \text{Maximum allowable deflection} = L_3 / 360 \leq 0.3" \)
- UL Fire Ratings 1-1/2 hour

#### Typical Section:

- Width (W) = 7.625"  
- Height (H) = 7.625"  
- Eff. Depth (d) = H-1-1/2"  1/2" bar dia.

As a minimum, the lintels carry the apex area above the span. An example of the uniform equivalent apex load calculation follows.

- Hollow masonry block weights for determining uniform equivalent apex load on lintel:  
  - 8" block weight = 35 psf (Hollow)  
  - 12" block weight = 50 psf (Hollow)

**Example**

Equivalent load of apex area = .33 WL  
Effective span "L" of lintel (centerline of bearing to centerline of bearing)

- Weight of masonry block "W" PSF

**Example**

Equivalent apex load for 8"X8" Lintel with effective span of 48"  
Apex Load = \( (33) \left( W_e \right) \left( L \right) / .33 \left( 35 \text{psf} \right) \left( 48/12 \right) = 46\#\text{FT} \)

Capacity of 8X8 lintel with effective span of 48"  
(from load table for live loads) = 1144#/FT

Therefore, the lintel has significant excess capacity, if superimposed load is located within apex area, then refer to the load tables to ensure sufficient capacity.
### 6x8 "U" LINTELS

**5,000 psi PRECAST BOND BEAM LINTELS**

<table>
<thead>
<tr>
<th>1. Nominal lintel length (inches)</th>
<th>(2) #3</th>
<th>(2) #5</th>
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<tbody>
<tr>
<td>32</td>
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<td>16</td>
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<table>
<thead>
<tr>
<th>3. Masonry opening L1 (inches)</th>
<th>(2) #3</th>
<th>(2) #5</th>
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<tbody>
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<td>24</td>
<td>32</td>
<td>40</td>
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</table>

<table>
<thead>
<tr>
<th>4. Effective span L2 (inches)</th>
<th>(2) #3</th>
<th>(2) #5</th>
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</thead>
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<tr>
<td>24</td>
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<table>
<thead>
<tr>
<th>5. Maximum allowable load Unfactored (lbs/ft.)</th>
<th>(lbs/ft.)</th>
<th>(lbs/ft.)</th>
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<tr>
<td>Dead Load</td>
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<td>Live Load</td>
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<tr>
<th>6. Maximum bending moment capacity M1 (ft.-lbs.)</th>
<th>(ft.-lbs.)</th>
<th>(ft.-lbs.)</th>
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<tbody>
<tr>
<td>5896</td>
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</table>

**Design Data**

- $f_y = 5,000$ psi (minimum)
- $f_y = 60,000$ psi (per ASTM-A615)
- Average weight per linear foot of beam - 50 lbs (Grouted Solid)
- Seismic Capability
- Design formulas as per ACI 318-12
- $M_o = $Moment governed by ultimate strength = 0.9 ($A_y$)$/$d-a/2$ ($W_k$)$/$L
- $V_o = $Shear governed by ultimate strength
- $M_o = 1/8 W_k L^2$
- $V_o = 1/2 W_k L$
- $d = $Maximum allowable deflection = $L_o/360$ ≤ 0.3" (9ft Lintel)
- UL Fire Ratings 1-1/2 hour

**Typical Section**

- Width (W) = 5-5/8"
- Height (H) = 7.625"
- Eff. Depth (d) = H-1/2" 1/2" bar dia.

As a minimum, the lintels carry the apex area above the span. An example of the uniform equivalent apex load calculation follows.

**Hollow masonry block weights for determining uniform equivalent apex load on lintel:**

- 6" block weight = 30 psf (Hollow)
- 12" block weight = 50 psf (Hollow)

**Equivalent load of apex area = 33 W**

**Effective span "L" of lintel (centerline of bearing to centerline of bearing).**

**Weight of masonry block "W" PSF**

**EXAMPLE**

Equivalent apex load for 6"x8" Lintel with effective span of 48"

Apex Load = (.33) (W) (L) = (.33) (35psf/2) (48")/12 = 20#FT

Capacity of 6x8 lintel with effective span of 48" (from load table for live loads) = 2916#/FT

Therefore, the lintel has significant excess capacity, if superimposed load is located within apex area, then refer to the load tables to ensure sufficient capacity.
### Nominal lintel length (inches)
2. 32 36 40 42 44 48 54 56 60 64 66 72 78 80 84 88 90 96 102 104 108 112 114 120 128 132 136 144

### Masonry opening L1 (inches)
3. 16 20 24 26 28 32 38 40 44 48 50 58 62 64 68 72 74 80 86 88 92 96 98 104 112 116 120 128

### Effective span L2 (inches)
4. 24 28 32 34 36 40 48 48 52 56 58 64 70 72 76 80 82 88 94 96 100 104 106 112 120 124 128 136

### Maximum allowable load Unfactored (lbs/ft.)
5. 2957 2534 2217 2087 1971 1744 1544 1478 1367 1267 1223 1109 1014 985 934 887 865 806 755 739 710 682 669 634 591 572 554 522

### Design Data
- $f_c = 5,000$ psi (minimum)
- $f_y = 60,000$ psi (per ASTM A615)
- Average weight per lineal foot of beam - 65 lbs (Grouted Solid)
- Seismic Capability: Design formulas as per ACI 318-12
- Moment governed by ultimate strength: $M_u = 0.9(A_f)(f_c)(d-a/2)$
- Shear governed by ultimate strength: $V_u = 1/8 W H_b f_y$
- Maximum allowable deflection: $L_e/(600 \leq 0.3” (9ft Lintel))$

### Typical Section:
- Width ($W$) = 7 5/8”
- Height ($H$) = 7 1/2”
- Effective Depth ($d$) = $H - 1/2”$ 1/2” bar dia.

### As a minimum, the lintels carry the apex area above the span. An example of the uniform equivalent apex load calculation follows.

Hollow masonry block weights for determining uniform equivalent load on lintel:
- 8” block weight = 35 psf (Hollow)
- 12” block weight = 50 psf (Hollow)

Equivalent load of apex area = $0.33 \times W \times L$

Effective span "L" of lintel (centerline of bearing to centerline of bearing).

Weight of masonry block "W" PSF

**EXAMPLE**

Equivalent apex load for 8"X8” Lintel with effective span of 48”

Apex Load = $0.33 \times W \times L = 0.33 \times (35 \times 48 \times 12) = 464$ FT

Capacity of 8X8 lintel with effective span of 48”

From the load table for live loads = 2988#/FT

Therefore, the lintel has significant excess capacity, if superimposed load is located within apex area, then refer to the load tables to ensure sufficient capacity.
### Design Data

- **f_y = 5,000 psi** (minimum)
- **f_y = 6,000 psi** (per ASTM-A615)
- Average self weight per linear foot of beam = 83 lbs (Grouted Solid)
- **Seismic Capacity**
- **Mn** = Moment governed by ultimate strength = 0.9 (A2)(f2)(d-a/2)
- **Vn** = Shear governed by ultimate strength
- **Mn** = 1/8 Wn (L2)2
- **Vn** = 1/2 WnL2
- **max = Maximum allowable deflection = L2/360 ≤ 0.3"**

### Hollow Masonry Block Weights for Determining Uniform Equivalent Apex Load on Lintel:

- **6" block weight = 30 psf** (Hollow)
- **12" block weight = 50 psf** (Hollow)

### Equivalent Apex Load for 10" X 8" Lintel with Effective Span of 48":

- **Equivalent Apex Load = .33 WL**
- **Effective Span L2 of Lintel (Centerline of Bearing to Centerline of Bearing)**
- **Weight of Masonry Block W PSF**

**EXAMPLE**

Equivalent Load for 10" X 8" Lintel with Effective Span of 48" Apical Load = (.33) (W) (L) = .33 (60 psf) (48" / 12) = 80# FT

Capacity of 10X8 lintel with effective span of 48"

(From load table for live loads) = 1106#/FT

Therefore, the lintel has significant excess capacity, if superimposed load is located within apex area, then refer to the load tables to ensure sufficient capacity.
### U- LINTELS - 12" x 8"

#### Design Data
- \( f_y = 5,000 \text{ psi (minimum)} \)
- \( f_y = 60,000 \text{ psi (per ASTM-A615)} \)

#### Typical Section:
- Width \( W \) = 11-5/8"
- Height \( H \) = 7.625"
- Eff. Depth \( d \) = H-1-1/2" 1/2" bar dia.

#### Reinforcement:

<table>
<thead>
<tr>
<th>Top</th>
<th>Bottom</th>
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<tbody>
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<td>32</td>
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#### Effective Span \( L_2 \) (inches)
- 24, 32, 40, 46, 48, 52, 56, 58, 64, 70, 72, 76, 80, 82, 86, 90, 94, 96, 100, 104, 106, 112, 120, 124, 128, 136

#### Masonry Opening \( L_1 \) (inches)
- 16, 24, 32, 38, 40, 44, 48, 50, 58, 62, 64, 68, 72, 74, 80, 86, 88, 92, 96, 98, 104, 112, 116, 120, 128

#### Load Tables
- **Factored Dead Load (1.4) (lbs/ft.)**
- **Factored Live Load (1.7) (lbs/ft.)**
- **Maximum bending moment capacity \( M_1 \) (ft.-lbs.)**

#### Example
- Equivalent apex load for 12"X8" lintel with effective span of 48"

As a minimum, the lintels carry the apex area above the span. An example of the uniform equivalent apex load calculation follows.

### Hollow Masony Block Weights
- 6" block weight = 30 psf (Hollow)
- 12" block weight = 50 psf (Hollow)

### Equivalent Load of Apex Area
- \( \text{Equivalent load of apex area} = 0.33 \times W \times L \)
- \( W \): Weight of masonry block "W" PSF
- \( L \): Effective span "L" of lintel (centerline of bearing to centerline of bearing)

### Design Formulas
- \( M_n = 1/8 W_n (L_2)^2 \)
- \( V_n = 1/2 W_n L_2 \)

### Maximum Allowable Deflection
- \( \text{Maximum allowable deflection} = L_2/360 \leq 0.3" \)

### UL Fire Ratings
- 1-1/2 hour