Girder Span Tables #2 SYP @ 40 psf LIVE/SNOW Load, 10 psf DEAD LOAD

<table>
<thead>
<tr>
<th>DECK WIDTH</th>
<th>Nominal Lumber Size</th>
<th>DECK WIDTH</th>
<th>Nominal Lumber Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>16' (2 ply)</td>
<td>4-3'  5-3'  6-8'  7-11' 8-4'</td>
<td>16' (2 ply)</td>
<td>4-3'  5-3'  6-8'  7-11' 8-4'</td>
</tr>
<tr>
<td>16' (3 ply)</td>
<td>4-3'  5-3'  6-8'  7-11' 8-4'</td>
<td>16' (3 ply)</td>
<td>4-3'  5-3'  6-8'  7-11' 8-4'</td>
</tr>
<tr>
<td>16' (4 ply)</td>
<td>4-3'  5-3'  6-8'  7-11' 8-4'</td>
<td>16' (4 ply)</td>
<td>4-3'  5-3'  6-8'  7-11' 8-4'</td>
</tr>
</tbody>
</table>

**Partial reproduction of Table AM105.2 for uncovered decks. For other Spans and wood species see Table AM105.2.**

### Joist Span Tables #2 SYP @ 40 psf Live/Snow Load, 10 psf Dead Load

<table>
<thead>
<tr>
<th>Joist Size</th>
<th>Max Span</th>
<th>Spaced @</th>
<th>Max Span</th>
<th>Spaced @</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 x 6</td>
<td>12&quot; OC</td>
<td>9'-11&quot;</td>
<td>2 x 10</td>
<td>12&quot; OC</td>
</tr>
<tr>
<td></td>
<td>16&quot; OC</td>
<td>9'-0&quot;</td>
<td></td>
<td>16&quot; OC</td>
</tr>
<tr>
<td></td>
<td>24&quot; OC</td>
<td>7'-7&quot;</td>
<td></td>
<td>24&quot; OC</td>
</tr>
<tr>
<td>2 x 8</td>
<td>12&quot; OC</td>
<td>13'-1&quot;</td>
<td>2 x 12</td>
<td>12&quot; OC</td>
</tr>
<tr>
<td></td>
<td>16&quot; OC</td>
<td>11'-10&quot;</td>
<td></td>
<td>16&quot; OC</td>
</tr>
<tr>
<td></td>
<td>24&quot; OC</td>
<td>9'-8&quot;</td>
<td></td>
<td>24&quot; OC</td>
</tr>
</tbody>
</table>

**Partial reproduction of Table AM106.1 for uncovered decks.**

### AM109.1 (Top Mount / Flush Girder)

**Braces shall be between 45 and 60 degrees.**

**AM109.1**

**CALL RTAC FOR DETAILS**

- One 5/8" bolt top and bottom end with nut and washer required.
- Spans are actual clear distance between supports. 5/8" bolts are needed at the top, bottom, and middle bracing points.
- Attached not less than 1/2 of post length, with (one) 5/8" H.D.G. bolt with nut and washer on each end of brace.

### AM111 (Handrails, Guards and General Construction)

**Guards at a Minimum 36" required per R312.1.2 with greater than 36" drop and opening limits per R312.1.3.4" (sphere cannot pass through vertical pickets or horizontal and ornamental guard rails). Top rail and post to support 200 lbs with infill to meet 50 psf per Table R301.5 and footnotes.**

**AM111**

**Rail Posts**

- Partial reproduction of Table AM109.1 for #2 SYP and with 2-3/8" Galv bolts with nut and washer to outer bands. 6x4 post may not be notched per DOH interpretation.

**AM106.1 (Side Mount Dropped Girder)**

**Concrete**

- Girder can be used as a clip not to interfere with beam member or FRP.

**AM108 (Joist Span Tables #2 SYP @ 40 psf Live/Snow Load, 10 psf Dead Load)**

**AM105.1 (Floor Joist cantilevers allowed per Section AM106.1 for uncovered decks and Table R502.3.3.1 for covered decks.**

**AM108.1 (Floor Joist cantilevers @ 18")**

**AM109.1 (Top Mount / Flush Girder)**

- Partial reproduction of Table AM109.1 for #2 SYP and with 2-3/8" Galv bolts with nut and washer to outer bands. 6x4 post may not be notched per DOH interpretation.

**AM109.1 (Top Mount / Flush Girder)**

- Partial reproduction of Table AM109.1 for #2 SYP and with 2-3/8" Galv bolts with nut and washer to outer bands. 6x4 post may not be notched per DOH interpretation.

**AM109.1 (Top Mount / Flush Girder)**

- Partial reproduction of Table AM109.1 for #2 SYP and with 2-3/8" Galv bolts with nut and washer to outer bands. 6x4 post may not be notched per DOH interpretation.

**AM109.1 (Top Mount / Flush Girder)**

- Partial reproduction of Table AM109.1 for #2 SYP and with 2-3/8" Galv bolts with nut and washer to outer bands. 6x4 post may not be notched per DOH interpretation.

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- Partial reproduction of Table AM109.1 for #2 SYP and with 2-3/8" Galv bolts with nut and washer to outer bands. 6x4 post may not be notched per DOH interpretation.

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- Partial reproduction of Table AM109.1 for #2 SYP and with 2-3/8" Galv bolts with nut and washer to outer bands. 6x4 post may not be notched per DOH interpretation.

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- Partial reproduction of Table AM109.1 for #2 SYP and with 2-3/8" Galv bolts with nut and washer to outer bands. 6x4 post may not be notched per DOH interpretation.

**AM109.1 (Top Mount / Flush Girder)**

- Partial reproduction of Table AM109.1 for #2 SYP and with 2-3/8" Galv bolts with nut and washer to outer bands. 6x4 post may not be notched per DOH interpretation.

**AM109.1 (Top Mount / Flush Girder)**

- Partial reproduction of Table AM109.1 for #2 SYP and with 2-3/8" Galv bolts with nut and washer to outer bands. 6x4 post may not be notched per DOH interpretation.

**AM109.1 (Top Mount / Flush Girder)**

- Partial reproduction of Table AM109.1 for #2 SYP and with 2-3/8" Galv bolts with nut and washer to outer bands. 6x4 post may not be notched per DOH interpretation.
Some Things to Think About... (Continued+)

- **How deep and how large must the footings under support posts be?**
  Each deck support post must be supported by concrete footings. The size of each footing is determined by the tributary load imposed on it. See the diagram below for an explanation of tributary load. Footing must be dug down into undisturbed soil and to a minimum depth of 12 INCHES BELOW FINISHED GRADE.

**Some Things to Think About...**

- **What type of lumber will I be using?**
  First, all lumber should be treated or decay resistant. We will assume that you will use pressure treated Southern Yellow Pine #2 (SYP) Girders/Header and Spans for #2 SYP are partially listed on this brochure. Other species of lumber are acceptable for use. Please refer to the amendments of the current North Carolina Residential Code for complete lumber species, spacing, and allowable spans.

- **What distance will you span the joists?**
  Your joists must be sized to carry a 40 lb. per sq. ft. live load. In some instances, a girder is used to help meet this design criteria and to allow use of smaller individual floor joists (See Joist Span Tables on other side of this brochure).

- **How high off the ground will the floor of your deck be?**
  If the walking surface of the deck exceeds 30 inches from finished grade, your deck must be surrounded by guard rails which are a minimum of 36 inches in height. The steps for the deck must also have a hand rail on one side if there are 4 or more individual risers (a riser is considered any portion of the stair that requires a vertical motion). If the steps have a rise of 30” or more above ground level, a combination guard rail/hand rail must be installed on open sides of the steps. See AM105 and AM111.

- **Bracing your deck for lateral support**
  If your deck will be 48” or more above the ground (measured from top of footing to deck floor), bracing for lateral support is required. Self supported decks of ANY height require lateral bracing. Several methods of bracing are acceptable depending on whether the deck is free standing or attached (See AM109.1) Post embedment can be used in lieu of knee braces or diagonal bracing per AM109.1(3) of the 2018 NCRC. Consult with the Code Information and Resource Center (CIRC) at 980-314-CODE (2633) to select a method that meets code and will work best for your project.

Still have questions?  
**If you’re in doubt, reach out — 980-314-CODE (2633)**

**Important Note:**  
A COPY of the ENTIRE NC Residential Code can be FOUND ONLINE AT:  
SELECT OSFM Divisions then State Building Codes.  
In the Resourcesbox select 2018 NC codes where it will open a NEW PAGE to the INTERNATIONAL CODE COUNCIL (ICC). SELECT NC then 2018. For the latest amendments to the CURRENT CODE select OSFM DIVISIONS, STATE BUILDING CODES, Code (current and past) then scroll to the 2018 NC ICC 2015 Amendments. All references to AM refer to Appendix M of the 2012 NC Residential Code and Amendments to the Code.

**Amendments to the current North Carolina Residential Code.**

- **Will your deck be attached to the residence for support or will it be a “self-supported” deck?**
  If attached, this means the deck band will be connected to the house band and that your deck will be supported partially by the existing foundation of the house. Attached decks must be connected to the band or rim joist of the house by 5/8” inch galvanized through bolts. Also, the existing siding (except brick) which covers the house band must be removed so that the deck band makes full contact with the house band. Non-aluminum, corrosion-resistant fastening must be installed between the house deck bands (see flashing detail AM103) to prevent water from rotting the house band. See diagram below for detail.

**All Structures Except Brick Veneer**

<table>
<thead>
<tr>
<th>Method</th>
<th>Fasteners</th>
<th>8 Max Joist Span</th>
<th>16 Max Joist Span</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5/8” Hot Dipped Galv. Bolts with Nut and Washer</td>
<td>1 @ 3'-4” O.C. and</td>
<td>1 @ 1'-1 1/2” O.C. and</td>
</tr>
<tr>
<td></td>
<td>12” O.C. Hot Dipped Galv. Nails</td>
<td>2 @ 8” O.C.</td>
<td>3 @ 8” O.C.</td>
</tr>
<tr>
<td>OR</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Self-Drilling Screw Fastener</td>
<td>12” O.C. STAGGERED</td>
<td>6” O.C. STAGGERED</td>
</tr>
</tbody>
</table>

**AM107.1 Footing Tables.**

- **Floor decking thickness shall be No. 2 grade treated Southern Pine or equivalent.**
  The minimum floor decking thickness shall be as follows:
  - First, second, and third floor decks: 1/2” O.C. (to 60”)
  - Fourth floor decks: 3/8” O.C. (to 60”)
  - Fifth floor decks: 1/2” O.C. (to 60”)

**AM103.1 Floor decking.**

- **Attachment interpollation between 8’ & 16’ joists spans are allowed,**
  - Minimum edge distance for bolts is 2 1/2 inches,
  - Nails must penetrate supporting structure band a minimum of 1 1/2 inches,
  - Self-drilling fastener shall be an approved screw having a minimum shank diameter of 0.195” and a length long enough to penetrate through the supporting structure band. The structure band shall have a minimum depth of 3 1/2”.
  - The screw shall have a corrosion resistant finish equivalent to hot dipped galvanized. Minimum edge distance for screws is 1 7/16”. A minimum of 1/2” thick wood structural panel if permitted to be located between the deck and the structural band.

**AM110.1 Stair.**

- **Staggered joists spacing.**
  - Max Span:
    - 36” O.C. (21”)
    - 48” O.C. (33”)
  - Min. Joist Spans:
    - 4” (25’)
    - 6” O.C. (16’)
  - Vertical spacing:
    - 36” O.C. (21”)
    - 48” O.C. (33”)
  - Floor joist:
    - S4S 8" x 16"
    - S4S 12" x 16"
    - 16" x 16”
    - 16” x 24”
    - 24” x 24”

**AM110.1 Floor decking.**

- **Double 8” x 16” double stacked solid block.**
  - 12” OC
  - 16” OC
  - 20” OC
  - 24” OC
  - 30” OC
  - 36” OC
  - 42” OC

**AM102.1 Tributary area of shaded section on free standing deck shown is 5’x6’=30 sq. ft. Code will require a minimum footing of 8” x 16” per Table AM102.1.**

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