Arch Window Replacement Calculation Guide for Existing Arch Window Openings

INSTALLER: Please leave this guide with the building owner to file for future reference.

Congratulations! You have just purchased one of the many fine Andersen® products. Proper assembly, installation and maintenance are essential if the benefits of your Andersen product are to be fully attained. Therefore, please read and follow this instruction guide completely. If your abilities do not match this procedure’s requirements, contact an experienced contractor. You may direct any questions about this or other products to your local Andersen dealer, found in the Yellow Pages under “Windows” or call Andersen WindowCare® service center at 1-888-888-7020 Monday through Friday, 7 a.m. to 7 p.m. Central Time and Saturday, 8 a.m. to 4 p.m. Central Time. Thank you for choosing Andersen.

Important Safety, Assembly, and Installation Information

Every assembly and installation is different (windloads, structural support, etc.). Andersen strongly recommends consultation with an Andersen supplier or an experienced contractor, architect, or structural engineer prior to the assembly and installation of any Andersen product. For installation methods not covered in this guide, (i.e. through jamb) please visit the Architect Detail File on the web (www.andersenwindows.com). Andersen has no responsibility in regard to the post-manufactured assembly and installation of Andersen products.

⚠️ WARNING

Using ladders and/or scaffolding and working at elevated levels may be hazardous. Follow equipment manufacturer’s instructions for safe operation. Use extreme caution when working around window and door openings. Falling from opening may result in personal injury or death.

⚠️ WARNING

Improper use of hand/power tools could result in personal injury and/or product damage. Follow manufacturer’s instructions for safe operation of equipment. Always wear safety glasses.

⚠️ WARNING

Weight of window/door unit(s) and accessories will vary. Use a reasonable number of people with sufficient strength to lift, carry, and install window and door unit(s) and accessories. Always use appropriate lifting techniques.

⚠️ WARNING

Unless specifically ordered, Andersen windows and doors are not equipped with safety glass, and if broken, could fragment causing injury. Many laws and building codes require safety glass in locations adjacent to or near doors. Andersen windows are available with safety glass that may reduce the likelihood of injury when broken. Information on safety glass is available from your local Andersen dealer.

⚠️ CAUTION

- Andersen® Head Flashing and Installation Flanges DO NOT take the place of standard window and door flashing. Unit must be properly flashed and sealed with silicone for protection against water and air infiltration. Use non-reflective flashings. Highly reflective flashing tapes can raise the surface temperature of the vinyl to the point where vinyl deformation and product damage may occur.
- Do not apply any type of film to glass. Thermal stress conditions resulting in glass damage could occur.
- Use of movable insulating materials such as window coverings, shutters, and other shading devices may damage glass and/or vinyl. In addition, excessive condensation may result causing deterioration of windows and doors.

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Instruction Guide 0005324 Revised 08/02/06
1. Measure Existing Opening

- Measure base width (B) of existing opening.
- Measure exact overall height (H) of existing opening.
- Measure exact shoulder height (sh) of existing opening.

**Example:**

- base width (B) = 48.00”
- overall height (H) = 54.438” or (54-7/16”)
- shoulder height (sh) = 48.00”

2. Determine Chord Height and Radius

- Determine chord height (ch) and radius (r) using the formulas below.

**Letter Identification**

<table>
<thead>
<tr>
<th>Letter</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>r</td>
<td>radius in inches</td>
</tr>
<tr>
<td>ch</td>
<td>chord height</td>
</tr>
<tr>
<td>sh</td>
<td>shoulder height</td>
</tr>
<tr>
<td>H</td>
<td>overall opening height</td>
</tr>
<tr>
<td>B</td>
<td>base width</td>
</tr>
</tbody>
</table>

**Example (Chord Height (ch)):**

**Formula**  \( H - sh = ch \)

\( 54.438" - 48.000" = ch \)

\( 6.438" = ch \)

**Example (Radius (r)):**

**Formula**  \( r = \frac{B^2 + 4(ch^2)}{8(ch)} \)

\( r = \frac{48^2 + 4(6.438^2)}{8(6.438)} \)

\( r = \frac{2304 + 165.79}{51.50} \)

\( r = 47.96" \)

3. Determine Standard Radius

**NOTICE**

Andersen® Arch Windows are available in six even foot radii: 2’, 3’, 4’, 5’, 6’, and 8’. Radius is measured from the very outside edge of head jamb.

**Example:**

radius (r) = 47.96” or 3’11-31/32”

standard radius = 4’

- Compare calculated radius (r) to Andersen® standard radii listed in notice above. Remember to downsize to allow for shimming and caulking.