

## The Raised Panel Door

Door Dimensions:	Height, Width, and Thickness
Rail:	The horizontal frame members
Stile:	The vertical frame members
Rail & Stile Dimensions:	Width, length, and thickness
	Width: Typically 2 ¼" (plus 1/32" for final trimming of the door)
	Thickness: Typically ¾"
	Rail length: Door width minus 2 x nominal stile width plus ¾" for the rail cope tongues. Cope tongues are typically 3/8" in length.
	Stile length: Door height plus 1/32" to 1/16" for trimming and squaring of the assembled door.
Panel:	The interior section which is held in place within grooves in the rail and stile framework.
	The panel may be made of a glued up assembly of several boards to minimize warping; plywood, or glass when a view of the interior of the cabinet is desired.
Panel Dimensions:	The thickness for a flat panel would be approximately ¼" or 7/32" which is the nominal thickness of plywood. Since plywood is dimensionally quite stable and doesn't expand or contract greatly due to climatic changes, the panel would fit within the grooves of the framework with minimal clearance in all directions.
	A panel made up of glued up boards will expand more across its width than length. Room must be provided for the expansion and contraction of the panel, else the doorframe could be damaged during the expansion period.
	As much as ¼" should be allowed for expansion of the panel. There are several methods of preventing the panel from rattling in the frame during periods of contraction, which may be employed.

## Panel Dimensions: Cont'd.

The simplest method is to tack the panel in place. A single brad located at the center point in both the top and bottom rails will permit expansion across the width of the panel

One alternative is to form beads of silicon caulking compound on waxed paper. After curing, place lengths of the beading in the panel grooves before assembling the door.

Another is to use Space Balls, which are compressible plastic balls which are  $\frac{1}{4}$ " in diameter. A couple of balls may be placed in the grooves of each rail and stile.

Yet, another is to use  $\frac{1}{4}$ " long sections of  $\frac{1}{4}$ " vinyl tubing.

Assuming that one of the above methods will be used, the following formula may be used to determine a panel size:

Panel Width: Door width minus 2 x stile width plus  $\frac{3}{8}$ "

Panel Height: Door height minus 2 x rail width plus  $\frac{3}{8}$ "

Example:

Door dimensions:	22" H x 12 $\frac{3}{8}$ " W
Panel width:	12 $\frac{3}{8}$ " minus 4.5" plus $\frac{3}{8}$ " = 8 $\frac{1}{4}$ "
Panel Height:	22" minus 4.5" plus $\frac{3}{8}$ " = 17 $\frac{7}{8}$ "

While the panel will not expand or contract as much over its length, it is important to maintain a uniform reveal of the raised panel at the top and bottom as well as on both sides. This is why the same formula is applied to both dimensions.