

Warp

How To Detect & Measure Warp

Warp is a variation from a plane surface within the door itself. It does not refer to the door in relation to the frame or jamb in which it was hung. Bow, cut and twist are terms which describe warp in a door and are defined as follows:

Bow is a curvature along the door height, or a deviation from a flat plane from end to end.

Cup is a curvature across the door width, or a deviation from a flat plane from side to side.

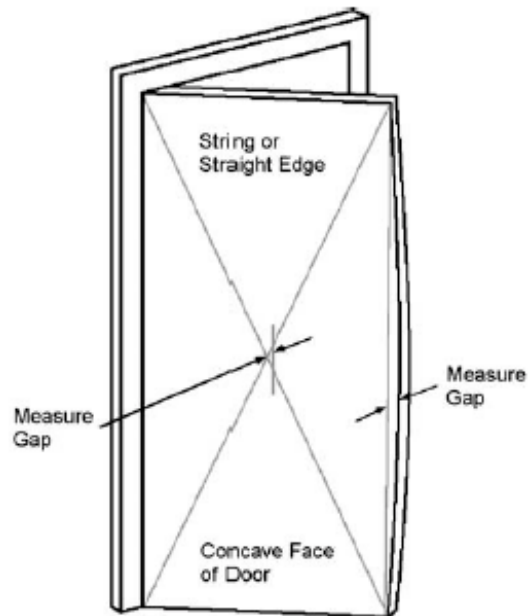
Twist is a distortion in which one corner is out of the plane of the other three corners.

Warpage is usually a result of unequal stresses within the door caused by different humidity and temperature conditions from one face or side to the other. Buildings should be humidity and temperature controlled before doors are delivered and installed. Required conditions are 25% to 55% relative humidity and 50° to 90° F (10° to 32° C) temperature range. Improper handling, stacking and storage can also contribute to warpage. Doors should be stored flat on a level surface off the floor with three cross supports.

How To Measure Warp

Use a taut string or straight-edge and measure on the concave face of door – diagonally, vertically, or horizontally. Measure at the point of maximum distance between the taut string or straight-edge and the face of the door.

- Measurement must be made on the Concave face of the door.
- Door should be open when measuring for warpage (lock not latched into strike).
- One person can measure warpage using a string and taping one or both ends onto the face of the door, holding it taut.
- Don't measure warp in relationship to the door frame.
- Often a door may not fit into the frame properly but is not warped. In these cases, check the frame – it should be set plumb and square and jambs should not be twisted or out of alignment.
- Action on any claim for warp may be deferred for up to one year after project completion to permit doors to acclimate to temperature and humidity conditions.



Allowable Warp Tolerance for Wood Doors

1 3/4" (44 MM) or thicker doors:

3'-6" x 7'-0" (1050 mm x 2100 mm) or smaller, 1/4" (6.4 mm) maximum.

Larger than 3'-6" x 7'-0" (1050 mm x 2100 mm), 1/4" (6.4 mm) maximum in any 3'-6" x 7'-0" (1050 mm x 2100 mm) section.

1 3/8" (35 mm) doors:

3'-0" x 7'-0" (900 mm x 2100 mm) or smaller, 1/4" (6.4 mm) maximum. Larger sizes not warranted.