STILE AND RAIL DOOR QUALITY STANDARDS
(Mill Department)

The following is a brief outline of Woodtech and industry standards regarding the construction and milling tolerance for stile & rail doors. It is the plant's responsibility to at least meet, and when possible, exceed these standards.

1. **DOOR GRADES**

   A. Premium Grade – highest quality stain grade door constructed for optimum compatibility of grain and color between veneers and lumber.

   B. Custom Grade – similar to premium in grade and construction, except that minor natural characteristics are allowable (knots, mineral deposits, etc.).

2. **COMPONENT MATERIALS**

   A. Veneers – to be the same species specified and free of knots, check, sap or mineral deposits with a pre-glue moisture content of not greater than 8% and not less than 6%.

   B. Bands – to be of the same species and coloring of the face veneer unless otherwise specified. Bands to be free of defects with a pre-glue moisture content between 6% and 8%.

   Note: Occasionally, a fire treated Maple band is required to meet construction standards for a 20-minute rating in pair applications.

   C. Core – to be either laminated material and/or fingerjointed Doug Fir or denser materials with a pre-glue moisture content between 6% and 8%. The pieces shall be free of any warp or bow and calibrated to a .003 tolerance prior to veneer application.

   Note: This core description pertains to stiles, rails and mullions only. Panels are typically manufactured two ways: an MDF panel with a 1/32" veneer or a 3-ply construction with a face-matching hardwood over particleboard core depending upon panel size and customer specifications.

3. **GLUING**

   A. Type 1 exterior glue is required at all glue-related phases of construction: cold pressing of parts, doweling and assembly. Minimum press time for parts should not be less than four hours, while minimum time under pressure at assembly should not be less than five minutes.

   B. The use of glues requires special knowledge in terms of mixing, application and storage. Literature is provided with these products detailing the necessary requirements. It is the affected operator's responsibility to make himself aware of this information.

4. **DOOR PARTS**

A. Defects – all parts should be inspected, prior to machining, for structural defects or aesthetic damage caused by handling.

B. Band and Veneer thickness – veneer thickness shall be as specified pre-assembly calibration. Band thickness to be no less than ½" after final milling of part.

C. Milling tolerances – parts to be machined to the following minimum tolerances:

1. .007" gap x 15% of joint length where any rail and stile meet.

2. .007" x 3" gap where any panel profile fits into sticking, or moulding is applied over tongue and groove construction.

5. **FINISHED DOOR**

A. Sanding – all doors are to be finish sanded to flush out joints and clean up any marks or scuffing incurred during handling. A 0% tolerance for flushness variation (the alignment of two similarly shaped surfaces) is required in the final products.

The following sanding grit sequences are required at final sanding:

Premium – 80, 120, 150, 180 with no cross scratches permitted.
Custom – 80, 120, 150 with cross scratches not exceeding ¼" permitted.

B. Squareness – all four corners of the door should be square (right angles). The length of the diagonal measurement from top left to bottom right corner should not exceed 3/32" from the opposing corner's measurements.

C. Warp – should not exceed ¼" in any 3/6 width by 7/0 length of door.

6. **SHIPPING REQUIREMENTS**

A. All doors leaving the mill should be evenly stacked on pallets and are clearly marked with customer name, order number and date.

B. Foam slipsheets should be between every door to avoid slippage and scratching, with the top of the load covered by cardboard.

Note: Species susceptible to oxidation (Cherry, Mahogany) require cardboard running the full length and width of the load on both the top and the bottom.

C. Mixed orders with varying door sizes should be palletized with the largest door on the bottom, and the smallest door on the top whenever possible. This is to avoid shipping having to rehandle the doors prior to loading.

D. Orders shipping to customers via common carrier should be securely crated and banded in a crate designed to facilitate forklift handling.

E. All doors shipped will be accompanied by our "How to Store, Handle, Finish, Install and Maintain Wood Doors" pamphlet issued by the National Woodwork Manufacturers Association.