

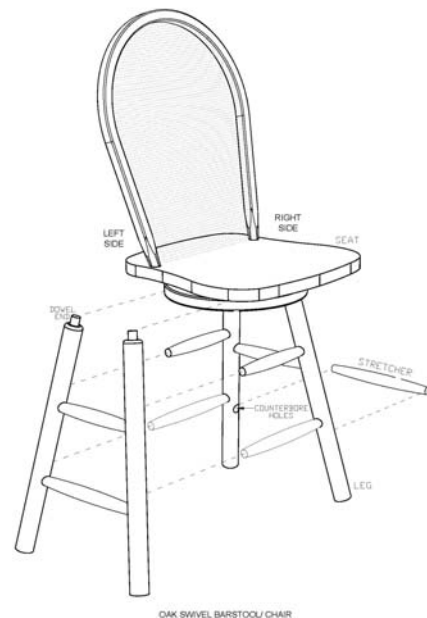
Case Study - Chair

Testing components of a product to determine cause of failure

ESI conducted an analysis for a collapsed chair personal injury case.

The examination determined the chair collapsed due to inadequate stability of the leg-to-stretcher connection joints of the base structure. The poor adhesion of the wood glue, improper assembly of the stretcher dowel ends into the counter-bored holes of the legs and improper placement of the fastening brad nails, directly resulted in a multiple connection failure and subsequent outward movement of the leg ends from the base. Specifically, the adhesion between the dowel ends of the stretchers and the counter-bored holes of the legs were insufficient to provide the lateral tensile force required for the stability of the base under an applied load. The brad nails effectively missed the dowel end of the stretchers and provided a negligible pull-out resistance.

The applied lacquer finish of the dowel ends of the stretchers also limited the adhesion from properly bonding the stretcher members in the counter-bored holes of the legs.



Engineering Specialists Inc. can answer your questions on Product Failure. Call **877-559-4010** for more information or email us at office@esinationwide.com.