

Water Absorption

Method: ASTM D1037 “Evaluating Properties of Wood-Base Fiber and Particle Panel Materials”

There are many tests described in this method. Previous testing cites this specification for determining water absorption and abrasion resistance.

For water absorption, Method B, a sample is weighed and measured, then immersed in water for 24 hours. Method A calls for a 2 hour immersion, 10 minute air dry, then 22 hour immersion. We chose Method B. After 24 hours, the sample is placed in an oven at 217°F, and then weighed every hour or so until it reaches a constant weight. The final weight is used in comparison to the initial weight to determine water absorption. Same theory applies to dimensional measuring. Actually measures loss of 0.08%. Previous testing shows 0.08%.

Initial Weight	Final Weight (2 hrs at 217°F)	Result
304.64 gm.	304.30 gm.	No water absorption

The heat must have caused some type of change in material properties, because the weight decreased, but the sample increased in size. 1.4% in length, 0.03% in width, and 0.03% in thickness.

Method: ASTM D570 “Water Absorption of Plastics”

A sample is weighed, then placed fully immersed in water for a period of 24 hours. After 24 hours, sample is removed from water, wiped free of surface water, and weighed again.

Initial Weight	Weight after 24 hr. Immersion	Result
304.64 gm.	305.96 gm.	0.43% absorption