



Application Notes

Moisture Measurement in Oriented Strand Board

Moisture content control is critical in the manufacturing of consistent high quality Oriented Strand Board. The mat moisture content and its distribution influence the consolidation of the OSB panel in the Press. If moisture levels are too high, the resin will not bind sufficiently to the wood and de-lamination will occur. At very low moisture levels, uneconomic usage of expensive resins results. In addition, over drying is undesirable due to increased fuel costs, increased fines, greater wastage, and potential for flash fires.

OSB Production

Logs are slashed, soaked, then debarked, prior to being cut into strands ranging from 3.5" to 6" in length, and 1" in width then stored in wet bins. The strands are then dried, screened, and blended with a binder and wax, before entering the Former where the mats are laid down. OSB consists of 3 or more layered mats, strands are aligned longitudinally within the surface layers, and are crossed or randomly aligned within the Inner Layers. The mats are converted to panels under high pressure and temperatures within the Press.

Measurement Location

Measurements are made at all or some of the following locations;

On the green wood before it enters the dryer, for example through a viewing window in the side of a storage bin. This provides information on the dryer load and enables feed forward control of the dryer.

***Post dryer, on the weigh belt prior to the Blender**. The measurement at this location is not easy owing to non-equilibration of the product. It is often used as an indicator of moisture level rather than an absolute moisture measurement, the aim being to narrow the final strand moisture content through tighter dryer control.

At the exit of the Blender

On the Forming line

Gauge Installation

Processes vary. Correspondingly, there is a variety of options available for mounting the gauge. The sensor can be mounted 8" from a continuous flow of product on a conveyor belt, and can also be located looking into a gravity chute or bin, through a viewing window, or insertion probe.

Moisture Measurement Performance

Measurement Location	Target(% Dry Weight)	Typical Accuracy
Pre Dryer on green flakes	60-150%	+/- 1%
Exit of Dryer	0-5%	See *
Exit of Blender	5-10%	+/-0.3%
Forming line	5-10%	+/-0.3%