



Application Notes:

Moisture in Particleboard

Control of moisture content throughout the process is essential to the production of consistent high quality particleboard. If furnish is of too high a moisture once it enters the blenders, the resin will not bind strongly to the wood resulting in delamination and blown boards. If moisture content is too low; there will be increased fines, greater wastage of raw materials, greater usage of expensive resins, increased fuel costs and the potential for flash fires.

Particleboard Production Process

Raw material in the form of round wood, slabs, chips, pulp chips, shavings and sawdust passes through Chippers, Flakers and Size Reduction mills in order to convert the variable particle size to the required size range. This mix passes through screeners which remove fines before it enters the dryer where moisture content is reduced from as high as 75% down to 3-5%. The dried material is graded and typically separated into core and surface product, which pass through different blenders owing to their differing requirements for resin as finer surface material requires a higher percentage w/w of resin. After the blender, the furnish is formed then pressed into boards.

Measurement Location and Installation

Measurements can be made at five locations; on the raw material, pre- dryer, post dryer, post blender and on the former. Measurements can be made either through a viewing window in the side of a storage bin or gravity chute, over a conveyor / weigh belt, or on the side of a formed mat. When installed over a viewing window, the gauge must be positioned at a 15° angle to the window in order to eliminate specular reflectance off the surface of the glass window. In either location the gauge is mounted approximately 200cm from the product.

Measurement Performance

Measurement Location	% Wet Weight	% Dry Weight	Typical Accuracy (+/-)
Green Chips	30-75%	43-300%	1-3%
Pre-dryer	30-75%	43-300%	1%
Post-dryer	3-5%	3.1-5.2%	0.4%
Blender	10-16%	11-19%	0.3%
Mat (former)	10-16%	11-19%	0.2%