PROCESS SENSORS CORPORATION

World Leader in Advanced Near Infrared Technology

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Application Notes

Moisture in PVB

PVB, polyvinylbutyral, is widely used in the windscreen manufacturing industry to strengthen and prevent glass from shattering upon impact, it is also used to produce safety glass for building windows . The performance of the laminated product is dependent on the adhesion of the PVB to the glass which is largely determined by the moisture content of the PVB film. A variation as small as +/- 0.2% from the optimum moisture content, can result in reduced effectiveness of the PVB/glass system.

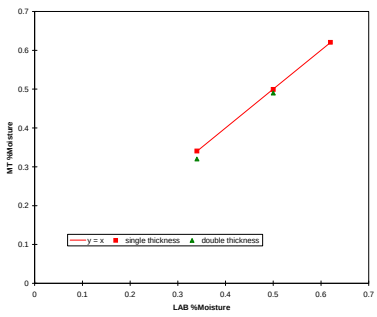
Manufacturing Process

PVB film is an extruded sheet, typically 0.38 and 0.76 mm thick. It is formed from a mix of PVB resin, plasticisers and other additives that confer UV and IR light transmission properties. The PVB is laminated between two sheets of glass in a controlled humidity and temperature environment to produce the windscreen or safety glass.

Measurement location and performance

Measurements can be made directly on the extruded PVB using the MCT 360, also off-line on the film, or laminated PVB/glass product using an MCT 600. Note that due to rapid moisture absorption, any off line work must be carried out under a tightly controlled humidity and temperature environment. The PVB/glass samples are typically test samples not the actual windscreens.

Moisture in PVB of single & double film thickness



Moisture Range	Film Thickness	Moisture rdg. Accuracy
0.1 – 0.6%	0.3 – 2.2mm	+/- 0.02%

The % moisture content is critical as detailed above, and a small % change can turn good material into bad! It is vital therefore that any moisture measuring device accurately records the true moisture value. Many moisture meters will provide a reading that is not thickness corrected, i.e. when film thickness increases, the gauge sees more water molecules, and records a higher moisture reading. Process Sensor's PVB measurement compensates for variation in the film thickness ensuring it always delivers a true % moisture reading.