



NONWOVEN TERMS

For the informed employee

Relative Humidity

The manufacturing of nonwovens is greatly affected by the conditions of the manufacturing environment. Primary in those conditions is relative humidity. The raw materials, equipment, and manufacturing employees are all greatly affected by relative humidity.

Relative humidity is defined as the amount of water vapor a given quantity of air is holding divided by the maximum amount of water vapor that could be held at the existing temperature. The relative humidity is expressed as a percentage. We often hear the weatherman on television in the summertime say the humidity is 80%. We know such conditions cause us to sweat. In the winter the humidity may drop to 30% or less. Hot air has the ability to hold more moisture than cold air.

For raw materials and process machinery, problems occur when the humidity is low. Low humidity causes fiber to cling together and to cling to plastic surfaces. This usually causes difficulty in opening and transporting fibers. It can even show itself as static electricity and cause operators to receive shocks. Equipment and opened fibers tend to process better in the summer when the humidity is high.

For equipment operators the problem is the opposite. We enjoy a working environment with lower temperatures and lower humidity.

Relative humidity is measured with an instrument called a hygrometer. They can be simple devices that hang on the wall to complex and highly accurate ones with data logging. The ones with data logging record the humidity every few minutes in computer memory. The memory can be downloaded and graphed to see how the humidity varies over time and to measure the effectiveness of plant controls.



Digital Hygrometer

Photo credit: http://e-sun.en.alibaba.com/product/278328528-50401129/Digital_Hygrometer.html



Analog Hygrometer

Photo credit: <http://www.stepsystems.de/hygrometer.169.html>



Recording Hygrometer

Photo credit: <http://www.mit-sg.com/English/Products/Hisamatsu/Thermo-Hygrometer.htm>

“Bad times have a scientific value. These are occasions a good learner would not miss.”
Ralph Waldo Emerson

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