



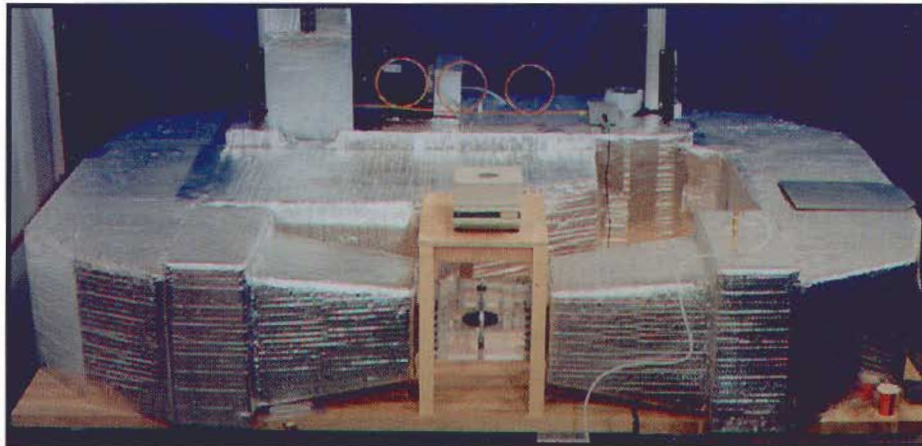
SES PROCESS TECHNOLOGY GROUP

A Division of Stress Engineering Services, Inc.

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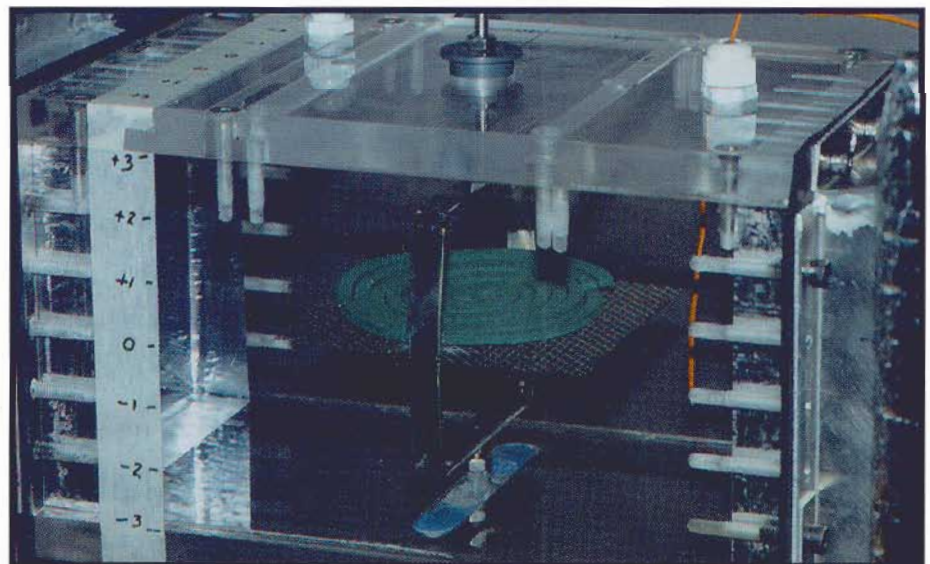
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Measure Complex Drying Processes at SES Stress Engineering Services Now Offers a Drying Facility for Experimental Measurement



SES Drying Laboratory

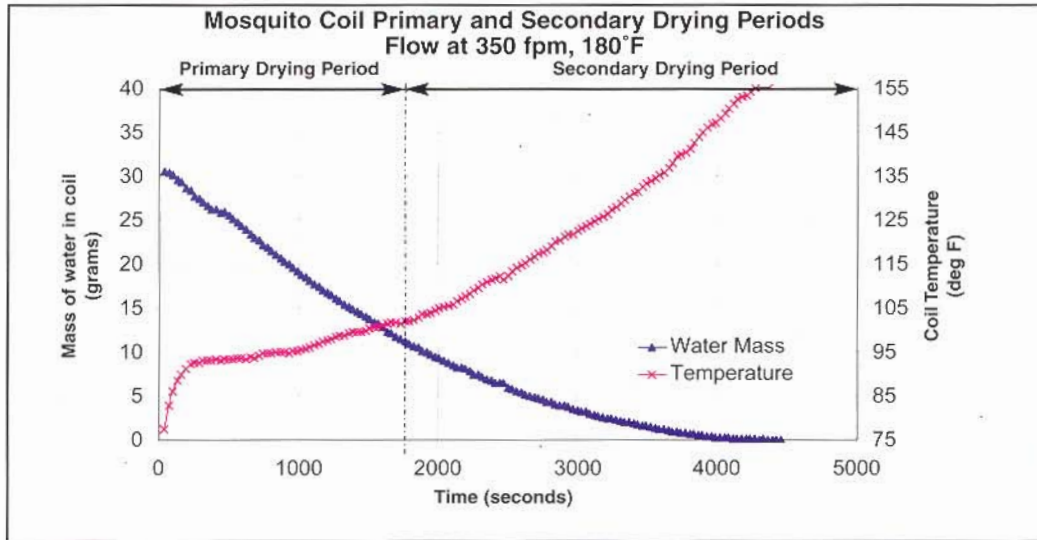
The Process Technology Group at Stress Engineering Services (SES) has added a new temperature- and humidity-controlled wind tunnel to the expanding list of capabilities at our Cincinnati testing lab. The system is capable of temperatures from 75 to 200 °F, relative humidity to 80%, and test section air speeds of up to 4000 FPM. This new device can be used to measure drying rates of a wide range of products, including wood pulp, woven and non-woven fabrics, surface coatings, porous materials and dehydrated foods.



Mosquito repellent coil in drying tunnel test chamber

Understanding the Drying Process

Experience with a wide range of products has shown that drying rate frequently exhibits two distinct behaviors, or periods; a Primary and a Secondary. The Primary Drying Period is characterized by 100% relative humidity at the surface being dried. The Primary Drying Period typically exhibits a constant, relatively steep, water loss rate. This rate is limited by the rate at which free surface water can be evaporated. The onset of the Secondary Drying Period occurs when the drying surface is at less than 100% relative humidity. The drying rate is limited by the rate at which water contained within the product structure is transported to the surface for subsequent evaporation.



Coil water mass and temperature data

Benefits of Drying Data

Analytical models of the drying process can be developed using empirical data gathered in the SES Drying Laboratory. These models then become tools to help optimize industrial drying processes and products, with benefits that include:

- reduced warping
- reduced cycle time
- better dimensional control
- improved energy efficiency

Adding this new experimental drying rate measurement capability to our existing expertise in computational, theoretical, and analytical capabilities allows the SES Process Technology Group to offer clients an even more powerful suite of tools for solving fluid flow, heat, and mass transfer problems.

**For more information about how the
SES Process Technology Group can help solve your most
complex drying problems, call us today at 513-336-6701**

...or visit our web site at www.stresseng.com

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