



Surface Measurement Systems
World Leader in Sorption Science

Optimize Building Materials with Advanced Sorption Characterization



Moisture Sorption &
Hygroscopicity



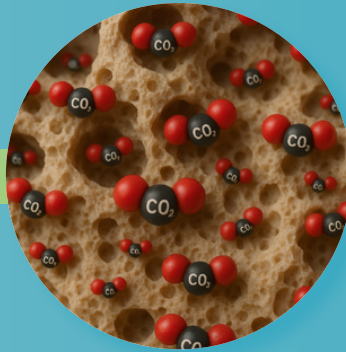
Porosity & Water
Transfer Behavior



Wettability, Curing
& Adhesion



Stability &
Aging



Carbonation &
Permeability



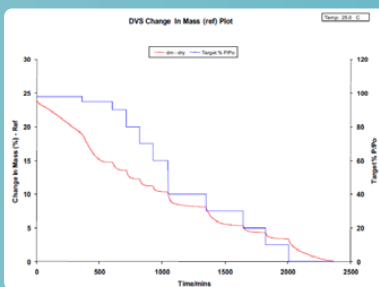
Chemical
Interactions

From water sorption analysis to surface energy measurement, unlock your research potential with advanced sorption analyzers, delivering unmatched materials characterization to drive the construction solutions of the future.

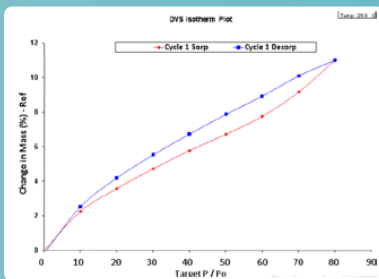


Empowering Building Materials Optimization for the World's Leading Researchers

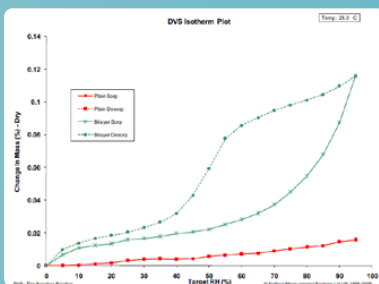
Our Instruments in Action



Drying kinetics for a cement paste sample at 25.0 °C



Water sorption (red) & desorption (blue) isotherms at 25 °C measured on a solid wood sample.



Water sorption isotherms for two carbon cloth samples

Vapour Sorption Properties of Building Materials using Gravimetric Sorption Instrumentation

The Problem: Building materials such as cement, wood, insulation, textiles, and asphalt are highly sensitive to moisture. Water vapour uptake affects durability, mechanical stability, microbial growth, and long-term performance. Understanding sorption behaviour is essential for predicting degradation pathways, improving indoor environmental quality, and designing materials with better resistance to humidity-driven damage across real-world building environments.

The Technique: Dynamic Vapor Sorption (DVS)

The Research: Using Dynamic Vapour Sorption instruments, multiple building materials were exposed to controlled humidity conditions. Gravimetric measurements tracked water uptake, desorption, kinetics, diffusion, and surface energetics.

The Results: DVS revealed distinct moisture sorption behaviours across materials: multi-step dehydration in cements, hysteresis and diffusion differences in wood, hydrophobic versus porous responses in textiles, and surface energy variations in asphalts and aggregates. These insights explain real-world performance issues such as cracking, microbial growth, dimensional changes, adhesion failures, and environmental moisture buffering, guiding better material engineering

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