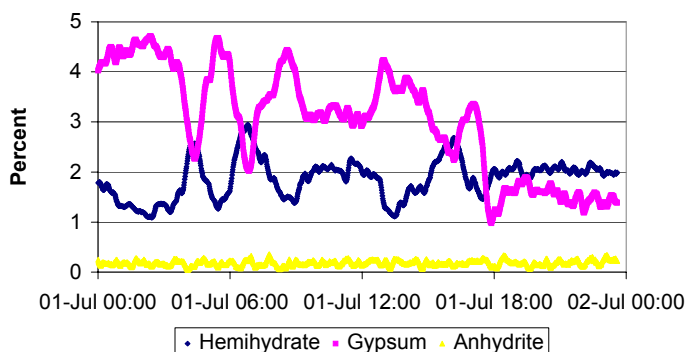


# Control of Gypsum dehydration & Setting time with COSMA DP

**The quality of cement** is determined by key performance parameters such as setting time and strength, so it is imperative that contributors to these are controlled carefully during the manufacturing process. Better control of gypsum dehydration leads to better control over cement setting time and strength development, providing a marketing edge over competitors.

**In Portland cement manufacture**, gypsum or gypsum plus anhydrite is interground with clinker to produce the finished cement product.  $\text{CaSO}_4$  is required to control setting time, without it the ground clinker would flash set. However, changes that occur when grinding are not just physical, as the grinding imparts energy, which elevates the temperature, causing dehydration of gypsum

**Dynamic gypsum states** occur at temperatures above  $105^\circ\text{C}$  when the partial de-hydration of gypsum produces hemihydrate. Anhydrite begins to form about  $170^\circ\text{C}$ . The ratio of gypsum forms is critical to cement performance in use.



**Changes taking place** in gypsum states are not readily apparent because to date there has been no way to monitor the phases until it's too late and customers complain of poor performance.

**Help is here with COSMA DP** continuously monitoring and reporting all three gypsum states from a cement sample stream. For the first time, operators have a live picture of these dynamic states and are able to manage the process to produce a consistent product.

**Financial benefits** result from the improvements in product quality, especially in competitive markets, where the customer demands the best performance characteristics, consistently.

**Setting time prediction** is the next step after controlling the gypsum dynamics, which has many mineralogical contributors; freelite, clinker minerals and of course, gypsum states. COSMA provides accurate data on the content of all these minerals and over time, correlations between them and setting times enable control a control regime to be developed and implemented based on FCT's predictive control model.



## What COSMA can do for you

- **Controlling gypsum addition to the  $\text{SO}_3$  target**
- **Controlling gypsum dehydration to hemihydrate target**

## Setting time prediction & control

- **Improved quality**
- **Customer satisfaction**
- **Competitive edge**

**Call us now** and learn what else COSMA can do for you..... in real time

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