

Extended programme: Technical Workshop

Wednesday 26 September 2012, 09.00-13.00

Benelux Meeting Room, InterContinental Hotel,
Geneva, Switzerland



“The cement kiln mass balance and its influence on productivity, clinker quality and emissions”

Technical workshops are one of the main features of the Cemtech Experience. At this year's Cemtech Europe 2012 meeting, Dr Michael Clark, Technical Consultant of International Cement Review, will provide an expert tutorial under the theme of: *“The cement kiln mass balance and its influence on productivity, clinker quality and emissions.”*

This three-hour workshop will provide plant managers, process engineers and other technical personnel the opportunity to develop an advanced understanding of modern cement manufacturing practices.

Workshop outline

An understanding of the cement kiln mass balance is fundamental to cement kiln productivity, energy efficiency, product quality and emissions control and mitigation. It is also fundamental to making informed investment decisions relating to, for example, waste heat recovery systems and alternative fuel and raw material strategies.

The cement kiln process is fundamentally a mass balance. We cannot create or destroy mass in a cement kiln (or any other industrial process for that matter). What goes into the cement kiln must either come out in the clinker product or the emissions from the kiln, or it must be retained and built-up within the process. These fundamentals lead to the four themes of the workshop:

- (1) **The impact on the clinker productivity of the kiln:** the equipment is dimensioned to deliver certain amounts of mass into the kiln in terms of feed, fuel and combustion air. It is also dimensioned to draw certain amounts of mass out of the kiln in terms of clinker product, combustion product gases and excess air. Understanding the mass balance involved allows the options for and barriers to increasing clinker productivity to be understood.
- (2) **The impact on the clinker product:** Increasingly there is a trend towards alternative fuels and raw materials. A key advantage of a cement kiln is that any ashes are fully incorporated into the clinker. As cement chemists we can adjust for this, but we have to recognise that some exotic species may be introduced. These can have a profound effect on the clinker mineralogy and the ultimate quality and performance of cement.
- (3) **The impact on emissions from the cement kiln:** emissions of combustion product gases and excess air are fundamentally part of the cement kiln mass balance and process. Along with those fundamental emissions occur some dust emissions and emission of acid gases from the combustion processes in the kiln. With alternative materials we also encounter the possibility of emissions of some exotic substances and heavy metals.
- (4) **The impact of build-up of material within the kiln process:** we expect and want some build-up of material in the cement kiln forming a protective coating on the refractory lining of the kiln. However, some volatile species can't escape from the kiln in the clinker or the exhaust gases in normal operations. These can concentrate to high levels causing restrictions and blockages in the process, which can adversely affect smooth operations and clinker productivity.

The technical workshop is free of charge (subject to availability) to delegates attending the conference.

For more information, or to register online for Cemtech Europe 2012, see: www.Cemtech.com/Europe2012