

Award-winning paper in 2022

Papers published in *Advances in Cement Research* are eligible for awards from the Institution of Civil Engineers. Papers from any of the ICE journals can be nominated for several awards. In addition, each journal has awards dedicated to their specific subject area.

On Friday 13 October 2023, ICE president Keith Howells presented an award to the following paper published in *Advances in Cement Research* in 2022. The editorial panel nominated their best papers and an awards committee chaired by Tim Broyd allocated the awards.

Advances in Cement Research Prize

The Advances in Cement Research Prize, presented for the best paper published in *Advances in Cement Research*, was awarded to Beuntner and Thienel (2022).

Abstract

Fundamental knowledge about the reaction mechanism of calcined clays in cement and their mutual interaction is important for their assessment as supplementary cementitious materials and the resulting concrete properties. In this study, the hydration of two cements differing in alkali content and with the addition of a highly reactive, aluminium-rich metakaolin and a calcined common clay with low kaolinite content was investigated during the first 48 h. For this purpose, four established methods that describe the early hydration were used: isothermal calorimetry, thermogravimetric analysis, in situ X-ray diffraction and chemical analysis of pore solution. This as yet unique combination of methods led to greater understanding of the hydration behaviour of the complex binder (cement–calcined clay). The results showed considerable differences depending on the type of calcined clay, its chemical–mineralogical composition and fineness, especially with regards its reaction mechanism with aluminat clinker phases controlled by the composition of the pore solution. The impact of calcined clay on early clinker hydration extends far beyond well known physical effects.



Advances in Cement Research Prize winner Nancy Beuntner with ICE president Keith Howells

REFERENCE

Beuntner N and Thienel KC (2022) Pozzolanic efficiency of calcined clays in blended cements with a focus on early hydration. *Advances in Cement Research* **34(8)**: 341–355, <https://doi.org/10.1680/jadcr.21.00034>.