

## **AAR in (Portland Cement-Free) Alkali Activated Fly Ash Mortars**

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The article reports on comparative research conducted on OPC and alkali activated fly ash mortars. The study focused on the AAR-induced expansion observed in the two types of mortars (made with reactive aggregates) when subjected to the attack described in standard ASTM C-1260.

Expansion was observed in OPC mortars 4 days into the test.

Fly ash mortar proved to be highly resistant to alkaline aggression, however, thanks to the tendency of the alkalis to react primarily with the ash particles, forming stable zeolitic species. These mortars only exhibited severe expansion problems when the attack was sustained for 180 days, due to the massive growth of analcime crystals. The results also showed that the reaction process was not significantly modified by the presence of lime in these new systems.