

Incorporating Paint Sludge in the Manufacture of OPC Clinker. Part II: The Effect on Concrete Performance

J.H. Potgieter¹, J. Smith²

¹*School of Chemical and Metallurgical Engineering, University of the Witwatersrand, Wits, South Africa,* ²*Weltevredenpark, Roodepoort, South Africa*

In part one of this study, cement produced from raw meal that incorporated paint sludge from an automotive manufacturer, was prepared and characterised. In part two of this investigation, concrete was prepared from this cement and its performance evaluated and compared with that of concrete made from regularly produced OPC.

A number of typical concrete performance tests were conducted, namely setting time, compressive strength development at selected time intervals and slump of the prepared mixtures; In all the tests carried out, the concrete made from cement that incorporated the residues of the paint sludge, performed similar to the concrete made from regular OPC. No deleterious effects on the concrete as a result of using an alternative cement could be detected. It was proven that paint sludge could be utilised to produce cement that performed in a normal way. Obviously the aspect of potential leaching of heavy metals from such a concrete still deserves attention.