

THE FEASIBILITY STUDY OF USING ALTERNATIVE OR PARTIAL ALTERNATIVE OF ORDINARY PORTLAND CEMENT (OPC) IN AUTOCLAVED FIBER CEMENT BOARD MANUFACTURING AS A GREEN APPROACH

Kok Peng Yam, Show Hing Ang

Hume Cemboard Industries Sdn. Bhd., Lot 127220, Kawasan Perusahaan Kanthan, 31200, Chemor, Perak, Malaysia, and kpyam@humecemboard.com.my

Keywords: Fly ash; Ground Granulated Blast-Furnace Slag (GGBS); Autoclaved Cellulose Fibre Cement; Ordinary Portland Cement.

Abstract.

Concerns over the impact of selecting aggregates to environment and carbon emission have increased in recent years due to global warming issues. There are a lot of studies on fly ash and slag by the cement / concrete manufacturers as partial replacement for concrete industry but this might not be applicable for fiber cement manufacturers in Malaysia at this moment. However, we are keen to move forward to reduce the carbon footprint for our autoclaved cellulose fibre cement products and alternatively using less OPC cement in line with the global trend of green building material approach.

In this study, we have selected low LOI Class F (siliceous) fly ash and Ground Granulated Blast-Furnace Slag (GGBS) as are pozzolanic in nature to partially replace the OPC. Besides, we had also evaluated the Portland Pulverised-Fuel Ash cement and Portland Blast-Furnace cement as total replacement for OPC. Sheet performances such as flexural strength, moisture movement, apparent density etc. were studied and comparison charts were presented.