

XRD and Image Analysis of Low Carbon Type Recycled Cement Using Waste Cementitious Powder

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Abstract : Although much current research has been devoted to reusing concrete in the form of recycled aggregate, insufficient attention has been given to researching the utilization of waste concrete powder, which constitutes 20 % or more of waste concrete and therefore the majority of waste cementitious powder is currently being discarded or buried in landfills. This study consists of foundational research for the purpose of reusing waste cementitious powder in the form of recycled cement that can answer the need for low carbon green growth. Progressing beyond the conventional practice of using the waste cementitious powder as inert filler material, this study contributes to the aim of manufacturing high value added materials that exploits the chemical properties of the waste cementitious powder, by presenting a pre-treatment method for the material and an optimal method of proportioning the mix of materials to develop a low carbon type of recycled cement.

Keywords : Low carbon type cement, Waste cementitious powder, Waste recycling

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