Sustainable Construction Materials and Environment

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Abstract:

The ever developing demand for building of infrastructure is fast assuming a central stage in national development, as a major consumer of natural sources of non-renewal materials and energy. This development is increasingly affect the environment in terms of CO_2 emissions, which can lead to subsequent climate change and temperature increases at the earth's surface, as well as having a major influence on social and economic conditions. Production of concrete and its materials has a negative environmental effect, including pollution and greenhouse gas emissions.

The use of recycled and secondary materials in the growing to minimizing of the use of Portland cement, for which the current annual global production is around 4.4 billion tonnes, can lead to significant reductions in CO_2 emissions, which, for obvious reasons, are increasingly being addressed as sustainable construction materials, can also help to lower the environmental impact of construction work. The use of Supplementary Sustainable Construction Materials (SSCM) as part of the cement clinker manufacturing in the production of Portland cement clinker and in ground form as a component of materials as cementitious has become an important part of the cement industry. The incorporation of latent hydraulic (such as ground granulated blast furnace slag), pozzolanic (such as fly ash) and filler (such as ground limestone) materials as cementitious components has become an important part of the cement industry. Indeed, the European standard EN 197 (2011) for common cements recognizes blast furnace slag, silica fume, pozzolana (natural and natural calcined), fly ash (siliceous and calcareous), burnt shale and limestone as allowable cementitious components, along with clinker, and specifies 27 different categories of cements based on the content range of these constituents. In addition to the benefits of conserving natural resources and reducing cement clinker demands and the associated carbon

footprint, these materials have also proved to be useful for enhancing certain performance aspects of concrete.

Keywords: Sustainable, Construction Materials, Modern Environmental, Modern Materials, Sustainable Materials and Green World.