

Sustainable Production of Self Compacting Concrete by using Fly Ash and Granite Waste

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Abstract: *The development of sustainable concrete has gained plenty of awareness in recent years. Researchers have conducted many experimental investigations for the manufacture of different forms of concrete by using numerous low carbon footprint materials, such as granite waste and fly ash. The using of low carbon footprint materials in construction industry will minimize the exploitation of natural raw materials and promote sustainability in construction industry. This research thus aimed to investigate the influence of granite waste (GW) and fly ash on the production of self-compacting concrete (SCC). The preliminary investigation was carried out for finding the maximum adding percentage of GW and fly ash in the successful production of SCC. The GW was used in the proportion of 10,20 and 30% as an alternative to fine aggregate (i.e. sand) by weight, while, fly ash was substituted with cement in the proportion of 10,20 and 30% by weight. The fresh characteristics (slump flow, V-funnel, and L-box), mechanical characteristics (compressive strength) were evaluated. The findings revealed that the combined use of GW (up to 30%) and fly ash (up to 30%) in SCC has the potential to considerably enhance the fresh and water absorption properties (without adversely affecting strength characteristics)*

Keywords: Slump flow, V-Funnel, L-box Compressive strength

REFERENCES

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