

Study of Design of Wall Using Interlocking Blocks Madeup of Gypsum and Mineral Admixture

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ABSTRACT

Concrete is considered as the second largest material consumed after water. Sustainable design and construction of structures using green material is an alternative to depletion of aggregates and increase in price of cement. To enable an efficient and cost- effective solution, a new concept of construction was investigated with innovative wall structure made up of self-interlocking block. Each block has two interlocking parts as ‘tongue’ part and ‘groove’ part, this helps to resist the lateral movements and horizontal compressive stresses. The projection of one block fits in to the depression of the next so that they always align perfectly. It was observed that the horizontal and vertical grooves helped in maintaining the stability of the wall. Also, the assembly of wall is assisted by the grooves, and it also helped in maintaining the vertical plumb of the wall. And a partial replacement of fly ash and gypsum to cement is done. They are more economic than other conventional materials. Our main aim is to create a new interlocking block wall using gypsum and other mineral admixtures like fly ash, GGBS, Silica fume, Metakoline and to study its properties as an interlocking block wall. In the end, interlocking wall will be compared by its strength and mechanical property to the conventional interlocking hollow block wall made up of cement, sand and stone dust.

Keywords: *Eco-friendly, Gypsum, Interlocking blocks, mineral admixture*

NISDCE'22 – 179