

# BITU BLOCKS NEW WAY TO BUILD HOME

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## ABSTRACT

This paper describes term Bitublock. It is created by engineer John Forth of the University of Leeds in England. This is a building block incorporating aggregate sourced exclusively from by-product / recycled / waste materials and which uses bitumen as the binder. Bitumen is the substance that binds the component materials, helping to compaction and so achieving the block form. Successful Bitublock mix designs can incorporate a range of materials including fly ash (PFA); furnace bottom ash (FBA); and other waste materials such as crushed glass and steel slag. Two types of bitumen were tested in this investigation namely a 50 penetration bitumen and a hard H 80/90 bitumen. The potential of Bitublock is gauged by drawing comparisons with cementitious bound aggregate blocks that are available. Currently, the bitumen binder content is 10% to 12% by mass of the Bitublock. This is high when compared to the typical cement content in dense aggregate blocks (approx 6%). Also, when the cost ratio is considered (Rs. 200 bitumen: Rs 60 cement per tone) it is clear that the amount of bitumen binder used in Bitublock needs to be reduced to keep it competitive. Previously, heat curing has been used to improve the resistance of Bitublock to creep deformation. However, this time-dependent stability needs to be further improved to make Bitublock at least as stable as current cementitious bound dense aggregate blocks. It was possible to do this by optimizing the porosity of the compacted product (ideal range 10 to 15%) and the curing regimes (i.e. curing time and temperature). By applying adequate heat curing, a range of Bitublocks can be produced with properties that are at least equivalent to current concrete block masonry units.