Application of Ultra High Performance Fiber Reinforced Concrete – The Malaysia Perspective

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Abstract

One of the most significant breakthroughs in concrete technology at the end of the 20th century was the development of ultra-high performance fiber reinforced concrete (UHPFRC) with compressive strength and flexure strength beyond 160 MPa and 30 MPa, respectively; remarkable improvement in workability; durability resembled to natural rocks; ductility and toughness comparable to steel. While over the last two decades a tremendous amount of research works have been undertaken by academics and engineers worldwide, its use in the construction industry remain limited and it is particularly true in the Malaysian context. Aiming to utilizing the technology as an alternative for conventional solutions and within the vision of sustainable construction, it is the intent of this paper to demonstrate how UHPFRC can be used as both a sustainable and economic construction material. In general, UHPFRC structures are able to give immediate saving in terms of primary material consumption, embodied energy, CO2 emissions and global warming potential. The major focus of this paper is to present both the various completed and on-going examples of UHPFRC application in Malaysia.

Keywords

Ultra high performance, Fiber, Bridge, Retaining wall, Bridges

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