

Conservation of energy in buildings using polymer concrete composites

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Polymers are versatile materials, they can be tailored to meet various applications. They have been widely used as efficient insulants in building and refrigerators industry owing to their low thermal conductivity. In building industry they are usually facing and used in semi- structural panels and cladding. In this work polymers are incorporated in the concrete mix to reduce heat loss gain to achieve energy conservation. The paper discusses the thermal conductivity characteristics of polymer cement concrete and polymer concrete systems that were properly designed based on polyurethane foams. Calculated results of the thermal performance of the designed polymer concrete composites of different composition, thickness and polymer content are presented, discussed and compared with those of conventional concrete.