World Academy of Science, Engineering and Technology
International Journal of Structural and Construction Engineering
Vol:8, No:07, 2014

Research and Development of Lightweight Repair Mortars with Focus on Their Resistance to High Temperatures

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Abstract : In this article our research focused on study of basic physical and mechanical parameters of polymer-cement repair materials is presented. Namely the influence of applied aggregates in combination with active admixture is specially considered. New formulas which were exposed in ambient with temperature even to 1000°C were suggested. Subsequently densities and strength characteristics including their changes were evaluated. Selected samples were analyzed using electron microscope. The positive influence of porous aggregates based on sintered ash was definitely demonstrated. Further it was found than in terms of thermal resistance the effective micro silica amount represents 5% to 7.5% of cement weight.

Keywords : aggregate, ash, high, lightweight, microsilica, mortar, polymer-cement, repair, temperature
Conference Title : ICCCE 2014 : International Conference on Civil and Construction Engineering
Conference Location : Stockholm, Sweden
Conference Dates : July 14-15, 2014