

COMBINING CHEMICAL AND MECHANICAL FOAMING IN GEOPOLYMER FOAM CONCRETES

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Chemical and mechanical foaming techniques have been successfully used in foam concrete technology for introducing voids in concrete, enhancing their thermal insulating properties, and reducing their weight. The combination of both foaming techniques have been proved useful in reducing the pore size and narrowing the size distribution of the pores in foam concretes. However, there is no clear understanding regarding the impact of combined foaming on structural properties and thermal performance of geopolymer foams. In this study, different geopolymer foams are made by various combination of chemical and mechanical foaming technique and the impact of pore distribution on thermal and mechanical performance of concretes is investigated. It is concluded that the pore size distribution is not the key factor affecting the performance of foam concretes, and the concrete expansion regime and pore connectivity are more critical aspects.

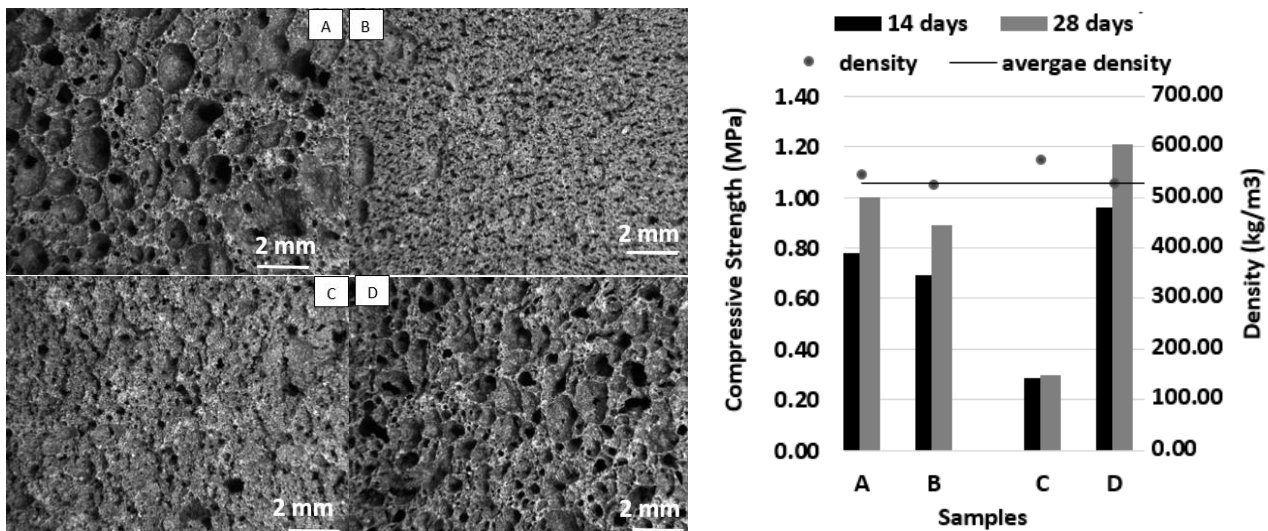


Figure 1 – The impact of combined foaming techniques on pore size distribution and mechanical properties of geopolymer foams