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Freeze-Thaw Resistance of Concretes with BFSA

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Abstract : Air-cooled Blast furnace slag aggregate (BFSA) is usually referred to as a material providing for unique properties of concrete. On the other hand, negative influences are also presented in many aspects. The freeze-thaw resistance of concrete is dependent on many factors, including regional specifics and when a concrete mix is specified it is still difficult to tell its exact freeze-thaw resistance due to the different components affecting it. An important consideration in working with BFSA is the granularity and whether slag is sorted or not. The experimental part of the article represents a comparative testing of concrete using both the sorted and unsorted BFSA through the freeze-thaw resistance as an indicator of durability. Unsorted BFSA is able to be successfully used for concretes as they are specified for exposure class XF4 with providing that the type of cement is precisely selected.

Keywords : blast furnace slag aggregate, concrete, freeze-thaw resistance
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