

Mass Loss in Concrete with Different Water-to-Binder Ratios and Air Voids Exposed to Fire

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Abstract: Several types of concrete, having different water/binder ratio and porosity, have been investigated in the past decades. Most of the experimental campaigns were carried out to judge the strength of concrete, or, separately, the fire spalling resistance. Studies on both these properties, and on the fracture toughness in compression as well, are very scarce in the technical literatures. We believe that this detailed study, dealing with the effect produced by the water/binder ratio and by porosity on the mechanical performances in compression and fire spalling, is being carried out for the first time and will be very valuable to the field of concrete technology.

Keywords: Concrete, water/binder ratio, fire, mechanical performance, compression, mass loss.

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