

EFFECTS OF SELF-DESICCATION ON AUTOGENOUS DEFORMATIONS, MICROSTRUCTURE AND LONG-TERM HYGRAL BEHAVIOUR

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The influence of water-cement ratio (W/C) has been investigated on the internal relative humidity (RH) measured at a given age in sealed conditions, and on the resulting degree of hydration of the cement. The consequences of the significant internal RH decrease and of the resulting low degree of hydration recorded in cementitious materials with low W/C, typically the high-performance concretes, have been analyzed both at early age, for example on autogenous deformations, and in the long term as regards microstructure and hygral behaviour. In this last case, moisture profiles in cementitious materials exposed to various laboratory and natural environments have been assessed by means of gamma-ray attenuation measurements. In addition, water vapour desorption-adsorption isotherms have been determined at room temperature by means of the saturated salt solution method. The very similar moisture profiles and the high saturation ratio recorded in various high-performance materials, whatever the age and the environmental conditions within a broad RH range, can be mainly attributed to the peculiar shape of their water vapour desorption-adsorption isotherms. In addition, and as expected, the total shrinkage, induced by a lower environmental RH than the internal one, of materials affected by a strong self-desiccation will be reduced.

*Přednáška v **angličtině** se koná ve velké zasedací síni děkana (místnost B 169) v budově Stavební fakulty ČVUT v Praze, Thákurova 7, Dejvice. **Všichni zájemci jsou srdečně zváni.***

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