



## Properties of fresh and hardened concrete

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### ABSTRACT

The present paper reviews the literature related to the properties of fresh and hardened concrete published after the previous (12th) International Congress on the Chemistry of Cement held in Montreal in 2007.

Workability and fundamental rheological properties, reversible and non-reversible evolution, thixotropy, slump loss, setting time, bleeding, segregation and practical issues related to formwork filling and pressure, are addressed among the properties of fresh concrete.

Among hardened concrete properties compressive strength and other mechanical and physical properties of hardened concrete, such as tensile strength, elastic properties, shrinkage, creep, cracking resistance, electrical, thermal, transport and other properties are covered. Testing, interpretation, modeling and prediction of properties are addressed, as well as correlation with properties of fresh concrete and durability, effects of special binders, recycled and natural aggregates, fiber reinforcement, mineral and chemical admixtures. Special attention is given to the properties of hardened lightweight and self-compacting concrete.

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