

INFLUENCE OF THE GASEOUS REGIME OF THE INDOOR SWIMMING POOL ONTO CORROSION OF REINFORCING BARS OF ENCLOSURE STRUCTURES

Evaporation of the swimming pool water into the indoor air causes penetration of the water vapour containing chlorine derivatives into the enclosure structures and corrosion of the reinforcement due to the presence of dissolved chlorine derivatives in the water. Water vapour migration through outdoor and indoor enclosures is intensive in the cold season, but it may also occur in the warm season. Bearing elements of outdoor and indoor enclosures are now made of the reinforced concrete that has fillers — Portland cement or other types of cement and steel, metal (steel) bars of different diameters. In “ideal” conditions, the concrete must stop corrosion of the steel reinforcement, but it does not happen this way in practice, as corrosion of the reinforcement is influenced by a number of factors.

The concentration of chlorides that diffuse into the concrete is lower than the concentration of chlorides in the concrete, but their corrosive influence is higher because of their “non-free” condition. The authors describe the causes and results of corrosion of the steel reinforcement caused by derivatives of chlorine and boosted by the gaseous regime inside the swimming pool building. Analysis of the cases of influence of the water containing 3% of chlorine onto the corrosion of reinforced Portland cement aimed at the reduction of the reinforcement rod diameter is performed. Corrosion of bearing structures causes the loss of strength and durability of buildings, and this process is unsafe from the viewpoint of security of people.

Key words: gas regime of buildings, ventilation, chlorine derivatives, water vapour, penetration, corrosion.

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