Mathematical model for durability design of reinforced concrete structures

Dubravka Bjegović[1], Vedrana Krstić[2], Dunja Mikulić[3], Jure Radić[1] and Vinko Čandrlić[1]

[1] *Faculty of Civil Engineering, University of Zagreb, Fra Andrije Kačića Miošića 26, HR-10000 Zagreb, CROATIA*
[2] *Department of Civil and Environmental Engineering, Rutgers University, P.O. Box 909, Piscataway, NJ 08855-0909, USA*
[3] *Department for Concrete and Masonry Structures, Civil Engineering Institute of Croatia, Janka Rakuše 1, HR-10000 Zagreb, CROATIA*

SUMMARY

After twenty or thirty years of service reinforced concrete structures may be in a condition that leads towards their structural failure. It is not due to design or construction faults, but due to severe environmental conditions which may cause considerable concrete and reinforcement damage. In this paper a proposal for durability design of reinforced concrete structures in aggressive environment is given. According to this proposal, the damage is anticipated already at the design phase and thus, the impact of environmental influences is considerably reduced during the service life of the structures. In this way, the least probable structural damage resulting from the effect of special environmental loads can be provided already in the design phase.