

Methodology for the assessment of corrosion damage in reinforced concrete structures

Shamsad Ahmad

Proceedings of Eighth International Conference on Concrete Engineering & Technology
(CONCET 2004), Kuala Lumpur, Malaysia, 19-21 April 2004, pp. 66-72

Abstract:

Corrosion of steel embedded in reinforced concrete structures is a major cause of deterioration of buildings and structures. Assessment of the corrosion damage to determine the extent and causes of damage is required prior to repair and rehabilitation works for achieving effectiveness and economy. In this paper, a literature review has been presented on the various aspects pertaining to the assessment of corrosion damage in reinforced concrete structures, namely: diagnostic methods, prediction of the time to corrosion cracking, and prediction of residual flexural strength. Well established diagnostic test methods and the criteria for the interpretation of test results for detecting reinforcement corrosion and diagnosing its causes; models for the prediction of time to cracking of concrete and estimating the loss of flexural strength, have been identified and integrated systematically in order to develop a step-by-step methodology for the assessment of corrosion damage in reinforced concrete structures. In conclusion, the utility of the suggested methodology has been illustrated using a set of typical data.