PERFORMANCE BASED BUILDING

Case Study

METHODS FOR THE SERVICE LIFE ESTIMATION OF METAL BUILDING PRODUCTS AS APPLIED TO SCHOOLS AND BRIDGES

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ABSTRACT

Internationally within the European Performance Based Building (PeBBu) network and in the CIB Working group W80 on design life of buildings significant efforts are being made to develop accurate procedures for the on service life estimation of building products. In Australia, service life research is focused primarily on prediction of reference service life which already includes environmental factors via laboratory testing (embedded in many Australian Standard but connection between tests and life uncertain), and maps derived from understanding the degradation process.

This paper presents a case based reasoning approach to service life prediction and illustrates this method with reference to prediction of the life of metal components on the façade of schools. In this application of case based reasoning, cases are similar if they have similar service conditions that would manifest similar rates of corrosion. The rate of corrosion in a particular case is estimated by reference to a number of different data bases derived from maintenance data, fundamental models and expert opinion. The paper outlines the generic method and then describes the various data bases.

Keywords: **corrosion prediction, service life, case-based reasoning, durability, holistic model**