

O 22. CORROSION DAMAGES IN STEEL STRUCTURES AND CORROSION PREVENTION METHODS

Yasin Duysak¹, Gunnur Yavuz¹

¹ *Department of Civil Engineering, Selcuk University, Konya, Turkey*

E-mail: ysndysk@outlook.com, gyavuz@selcuk.edu.tr

ABSTRACT: Corrosion is one of the most important problems of steel structures under aggressive environmental conditions. Corrosion deterioration usually forms in steel and steel-concrete composite bridges and marine structures. Also, corrosion of reinforcing steel is a main cause of deterioration of reinforced concrete bridge decks under environmental effects. The effects of corrosion on the structural members and, material losses and damages can be minimized by taking precautions. Although these precautions increase the cost of construction, the service life of structure extends and it is economical in long-term. In this study, a general information is presented about the formation of corrosion damages in steel structural systems and steel connection members, and the effects of these damages on the behaviour of structure are explained. Additionally, the precautions that can be taken to prevent corrosion formation or to minimize the occurrence of corrosion are presented. Also, the structural behaviour of steel beams having corrosion damages at different regions (web or flange) and reference beam (no corrosion) under vertical loading are investigated theoretically.

Keywords: Steel structures, corrosion, damage, beam