

Dynamic Amplification Factors of Some City Bridges

Authors : I. Paeglite, A. Paeglitis

Abstract : The paper presents a study of dynamic effects obtained from the dynamic load testing of the city highway bridges in Latvia carried out from 2005 to 2012. 9 pre-stressed concrete bridges and 4 composite bridges were considered. 11 of 13 bridges were designed according to the Eurocodes but two according to the previous structural codes used in Latvia (SNIP 2.05.03-84). The dynamic properties of the bridges were obtained by heavy vehicles passing the bridge roadway with different driving speeds and with or without even pavement. The obtained values of the Dynamic amplification factor (DAF) and bridge natural frequency were analyzed and compared to the values of built-in traffic load models provided in Eurocode 1. The actual DAF values for even bridge deck in the most cases are smaller than the value adopted in Eurocode 1. Vehicle speed for uneven pavements significantly influence Dynamic amplification factor values.

Keywords : bridge, dynamic effects, load testing, dynamic amplification factor

Conference Title : ICSCE 2014 : International Conference on Structural and Construction Engineering

Conference Location : London, United Kingdom

Conference Dates : December 22-23, 2014