

THE EFFECTS OF DIFFERENTIAL SHRINKAGE IN COMPOSITE CONCRETE GIRDERS MADE CONTINUOUS

Mašović, S.

Abstract: Due to the effects of creep and shrinkage of concrete, stress redistribution occurs between the various materials involved in the section. If a statically indeterminate concrete structure is made from several precast elements which are made continuous with one another after being subjected to permanent loads as separate elements, then the distribution of moments and forces within the structure will progressively change during the subsequent life of the structure, tending to approach the values and the distribution that would be obtained loading the structure with the same permanent loads in its final static configuration. In case of composite girder sections, differential shrinkage generates additional force redistribution in the structure even if no external load is applied. This study was undertaken as an attempt to evaluate the influence of bare differential shrinkage (no other load applied) between the precast girder and the situ-cast deck slab, on the continuity behavior of composite concrete girders made continuous, after an extended period of time.

Keywords: composite concrete girders, structural change, creep, differential shrinkage.



Authors' data: Assist. Mašović, S.[nežana], M. Sc., Faculty of Civil Engineering University of Belgrade, Serbia, 73, Kralja Aleksandra Blvd, stosa@imk.grf.bg.ac.yu.