New Alternative Solutions for Pelješac Bridge in Croatia

Jure RADIC
Professor
Zagreb University
Zagreb, Croatia
jradic@grad.hr

Zlatko SAVOR
Civil Engineer
Zagreb University
Zagreb, Croatia
savor@grad.hr

Marjan PIPENBAHER
Civil Engineer
Ponting Consulting Engineers
Maribor, Slovenia
marjan.pipenbaher@ponting.si

Gordana HRELJA KOVAČEVIĆ
Civil Engineer
Zagreb University
Zagreb, Croatia
hgoga@grad.hr

Summary

A fixed link between all parts of Croatian territory will be established after completion of the Mainland–Pelješac Peninsula Bridge over a navigable sea strait, with minimum required navigation clearance of 200x55m. The bridge is located in the high-activity seismic zone with design ground acceleration a_g=0,41g, strong winds and extremely adverse foundation soil conditions. The original main design of the bridge was completed and building permit was obtained. The construction of the bridge began in 2007, but it was slowed down and finally stopped in 2012 due to financial problems. Two alternative bridge solutions were proposed in the new preliminary design, a continuous steel beam bridge and a multi-span extradosed semi-integral bridge with hybrid deck. After a short account of the original bridge design, both preliminary designs are described in the paper. The multi-span extradosed semi-integral bridge with hybrid deck was chosen for further design.

Keywords: design, cable stayed steel bridge, box girder bridge, multi-span extradosed semi-integral bridge, steel deck, hybrid deck, seismicity, soil parameters, deep foundations

https://doi.org/10.2749/222137814814068526