Research of necessary operating parameters of prospective temporary bridges for rail transport

Výzkum nutných provozních parametrů perspektivních mostních provizórií určených pro železniční dopravu

Funding: National (Czech Republic)
Duration: Jan 2012 - Dec 2014
Status: Complete with results

Objectives:

The project determines and objectifies the parameters of temporary bridge structures to deal with rapid restoration of railway bridges on the upgraded double-track railway and corridors discarded due to emergencies such as floods and big accidents. The applicability of the identified parameters is verified by conceptual design of future temporary bridge construction, accelerating the restoration of transport services on railway and by experimental verification of key details of the structure.

Parent Programmes:
ALFA - ALFA PROGRAMME

Institute type: Research agency
Institute name: The Technology Agency of the Czech Republic
Funding type: Public (national/regional/local)
Other funding sources: Technology agency of the Czech Republic

Partners:
- University of defence in Brno
- Technical university in Brno / Faculty of Civil Engineering

Organisation: Engineering
Address: Mlýnská 68
Zipcode: 60200
City: Brno
Contact country: Czech Republic
Telephone: +420 543 532 295
Organisation Website: http://fiserv.cz/

Key Results:
- The main output of the project are guidelines for determining the parameters of a temporary bridge structure suitable for the use on upgraded lines and corridors - the guidelines establish and objectify the parameters of new temporary bridge structures for dealing with the fast recovery of railway bridges on upgraded double-track lines and railway corridors excluded due to crisis situations caused by floods or any major disasters. The methodology uses scientific methods such as analysis and synthesis in examining the needs of a future user, prospective investors and statistics on a railway infrastructure. The applicability of the identified parameters has been verified by the conceptual design of the perspective temporary bridge construction which accelerate the restoration of transport services on railways and by experimental verification of structural key details.
• The shear connection on a flange (utility model) - the aim of the technical solution is to eliminate the deficiencies of shear connections on the flanges, especially of steel beams. We can achieve this requirement for shear connection of flanges, especially of steel beams, by using this technical solution. The essence of the solution is the rigid elastic rubber inserted between the adjacent walls of shear trigs on upper and lower flange.

• The flange connection used for I beams (utility model) - the aim of the technical solution is to eliminate the deficiencies of the existing flange connections of the beams as far as possible and to lower the number of screws used for such connections and thereby simplify the mounting. We can achieve these requirements by using the flange connection of the beams according to this solution. The connection consists of heads fixed on the connected flanges and stirrups stung on both sides of the heads.

STRIA Roadmaps: Infrastructure
Transport mode: Rail transport
Transport sectors: Passenger transport, Freight transport
Geo-spatial type: Other