سیویلیکا - ناشر تخصصی مقالات کنفرانس ها و ژورنال ها
گواهی ثبت مقاله در سیویلیکا
CIVILICA.com

عنوان مقاله:

Experimental Study on Prefabricated Concrete Bridge Girder-to-Girder Intermittent Bolted Connections System

محل انتشار:

اولین همایش بین المللی مقاوم سازی لرزه ای (سال: 1385)

تعداد صفحات اصل مقاله: 52

نویسندگان:

Bijal N. Shah - *Graduate students, Ryerson University, Civil Engineering Department, Toronto, Ontario, Canada*

Khaled Sennah - *Corresponding Author, Associate Professor, Civil Engineering Department, Ryerson University, ۳۵۰ Victoria St, Toronto, Ontario, Canada M۵B ۲K۳*

M. Reza Kianoush - *Professor, Civil Engineering Department, Ryerson University, Toronto, Ontario, Canada*

Siyin Tu - *Head, Bridge Research, Bridge Office, Ontario Ministry of Transportation, St.Catharines, Ontario, Canada*

خلاصه مقاله:

This paper reports on a new bridge deck slab flange-to-flange connection system for pre-cast Deck Bulb Tee (DBT) girders. In prefabricated bridge system made of DBT girders, the concrete deck slab is cast with the prestressed girder in a controlled environment at the fabrication facility and then shipped to the bridge site. This system requires that the individual prefabricated girders be connected through their flanges to make it continuous for live load distribution. The objectives of this study are to develop an intermittent bolted connection for DBT bridge girders and to provid experimental data on the ultimate strength of the connection system. This includes identifying the crack formation and propagation, failure mode and ultimate load carrying capacity. In this study, three different types of intermittent bolted connection were developed. Four actual-size bridge panels were fabricated and then tested to collapse. The effects of the size and the level of the fixity of the connecting steel plates, as well as the location of the wheel load were examined. The developed joint was considered successful if the experimental wheel load satisfied the requirements specified in North American Bridge Codes. It was concluded that location of the wheel load at the deck slab joint affected the ultimate load carrying capacity of the developed connections. Failure of the joint was observed to be due to either the excessive deformation and yielding of the connecting steel plates or debonding of the embedded studs in concrete.

کلمات کلیدی:

Bridges, concrete, precast girders, connections, experiments, flange-to-flange connections, bridge connection system, intermittent bolted connection

لینک ثابت مقاله در پایگاه سیویلیکا:

https://civilica.com/doc/5756