


Olarn Wiengweera 2008: Strengthening for Pre-tension Bridge Girder by Link Slab. Master of Engineering (Civil Engineering), Major Field: Civil Engineering, Department of Civil Engineering. Thesis Advisor: Associate Professor Prasert Suwanvitaya, Ph.D. 79 pages.

Trucks have recently been allowed to carry greater load than previous limits. Existing bridges are getting older, while the traffic has increased in response to transportation demand. The need for strengthening of highway bridges was considered for maintenance cost efficiency and service life. The strengthening of bridge superstructure by link slab is a retrofit method for changing the behavior from simple span to continuous span of multi-simple-span bridge. By this method, tension reinforcement in the deck is essential to resist the negative moment at connecting region. This thesis aims to study and investigate the behaviour and load carrying capacity of a joint of adjoining beams continuously made by the link slab.

In the experiment, two precast concrete beams were joined as one simple beam with cast-in-place reinforced concrete deck. The gap between the two precast concrete beams was filled with non-shrinkage mortar. Two different sizes of link slab beams were tested under two point loading system to compare with monolithic beams. The results of this study showed that the flexure capacity of both link slab beams was about the same as the corresponding conventional beams.



Student's signature



Thesis Advisor's signature

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