

Pre-Stressed Concrete Deck Panels Bridge Decks

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Abstract: The research explains about the use of pre-stressed and pre-cast concrete deck panels in the construction. The exploration additionally experienced to discover whether the extension deck substitutions had been completed had early execution issues. That was perceived, there in certainty at the beginning of performance issues then add these could be in means of testing the load and the use of materials in efficient grade.

Key words: Replacement of deck, transportation, materials, exploration, substitutions, India

INTRODUCTION

The bridge is a lifeline of the road network both in urban and rural areas. With rapid technology growth the current bridge has been replaced by innovative cost effective structural system. It is an important as well as the sophisticated approach of the structural engineer. As in a case of bridge design, span length and live load are always the important factors. These factors affect the conceptualization stage of design (Adamu and Hamid, 2012). A concrete bridge deck obviously has more advantages in the construction compared to the pre-stressed and the precast bridge deck (Barker, 1975). Precast prestressed panels are frequently used in the bridges buildings in us. In the United States, the most of the panels are used. The groups are used as the part of the composite of the deck (Suresh, 2016).

The replaced panels are changed at both upper and bottom layers, i.e., both negative and active components. The details are taken from the Illinois standard design. The utilize of the precast panels has established to be efficient and suitable. Precast panels that are around 2.4-3 m long. These boards are strengthened in the crossways heading and post-tensioned along activity. The parallel shear stud connectors grouped in pockets at around 0.6 m dividing with the main on steel plate beam bridges are placed. The pockets are grouted after the panels are post-tensioned. Also, the post-tensioning ducts involve grouting. The system has no crossways pre-stressing and is thus, focused on cracking under check conditions. Plasmon-assisted enhancement and tuning of optical properties in β it has been described by Warriar *et al.* (2016).

MATERIALS AND METHODS

Analysis and process: By using the pre-cast, the deck substitution and also the concrete floor

planks are pre-stressed. By Illinois Transportation Department, the overall bridge project is determined:

- Determine the heights of the emotionally supportive network and introduce them
- Set the boards successively from one end, beginning with the original jetty end board, then the ordinary boards, then the single end board. Utilize two CAT 950F front end loaders or comparable hardware to introduce each board
- Grout the shear keys between the boards. Ensure the closures are completely fixed to counteract inadvertent spillage into open channels
- Install post-tensioning strands. Post-pressure the deck board as indicated by the development records
- Fill open channels and place overlay concrete

Preparation and characterization of the structural, optical, spectroscopic and electrical properties of Pr_2O_3 doped borate glass review this study (Vasumathy *et al.*, 2016) and also studied synthesis and characterization of Yttrium stabilized Zirconia nanoparticles (Maridurai *et al.*, 2016).

RESULTS AND DISCUSSION

Deck panels and bridge

Types of decks:

- Box layers panel
- Channel layers panels
- Single tee decks panels
- Voided slab panels
- Elevated with sectional
- Plan of the constructed deck (Fig. 1 and 2)

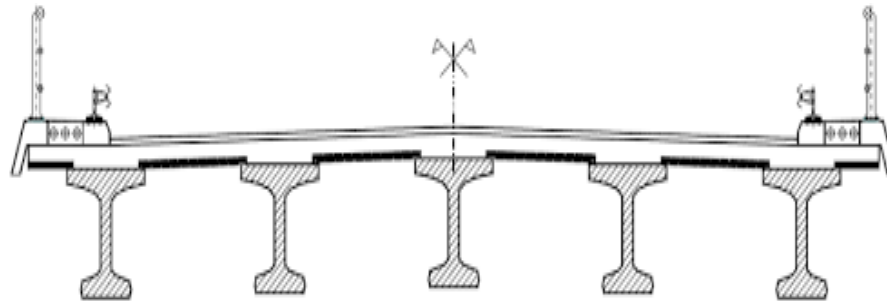


Fig. 1: Sectional elevation of a bridge

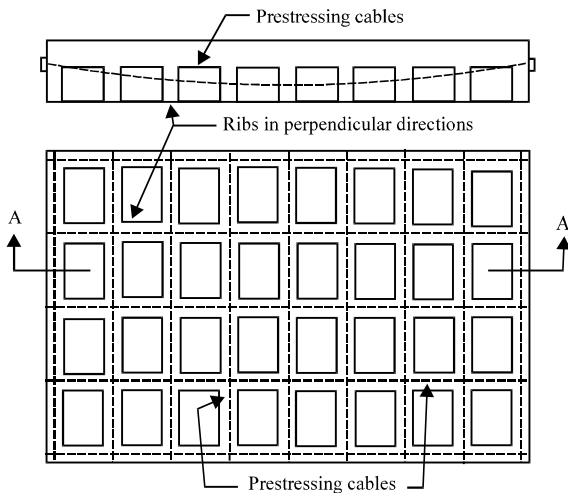


Fig. 2: Top view of the elevated

CONCLUSION

By using the concrete deck panels, the efficient floor system is developed. Thought to invent the appropriate design, it can execute high-value decks with suitable durability. The analysis of the current design and the detailing practice, procedures are evaluated by the Bridge Producer Committee of the Prestressed Concrete Organization. The deck panels which are used, one or

more thing that was noticed which was at the panels are performed with the tough durability and excellent workability.

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