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ISSUE: 08. ROAD BRIDGES IN WINTER CONDITIONS

SUB-ISSUE: Maintenance of road bridges under winter conditions

Session: ( )

Poster: 06/02/2014 (15:30 - 18:30 h)

Room:

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Presentation title:

BRIDGE DECK PRESERVATION SYSTEMS FOR EXPRESSWAY NETWORKS

Summary:

Deicing chemical such as Sodium Chloride, NaCl, is typically used in winter season to prevent icing on the pavements and bridges. However, these deicing chemicals are known to cause severe degradation and deterioration of concrete bridge decks. These chemicals penetrate into concrete and cause corrosion of reinforcements as well as exacerbate concrete damage. To extend durability of concrete deck, installation of wearing surface over the concrete deck has been implemented around the world. Wearing surface, which is placed on the top of concrete deck, is required to prevent the infiltration of water and aggressive deicing chemicals. Different types of wearing surfaces or overlays have been tried in Korea Expressway Corporation (KEC). Asphalt concrete overlay along with waterproofing membranes had been typically adopted to protect concrete deck. However, the performance of the system was not satisfactory as severe deterioration of the overlays and decks had been reported. The system also turned out to have long-term durability problems. Recently latex modified concrete (LMC) overlay systems are mainly used for new and existing bridges in KEC. The exposed (or bare) concrete deck of high-performance concrete was also proposed for the bridges with limited use of deicing chemicals.