

RECENT ADVANCES IN DETECTING DELAMINATION IN CONCRETE BRIDGE DECKS

William M. Moore, Gilbert Swift, and Lionel J. Milberger,
Texas Transportation Institute, Texas A&M University

Abridgment

This report describes a research effort directed toward finding a means for detecting delamination, one of the more serious forms of deterioration found in concrete bridge decks. It describes (a) some of the methods employed for delamination detection, (b) the development of the basic components required for automatic detection, and (c) the completed instrument resulting from the research. The detecting unit is in the form of a pushcart, roughly the size and shape of a power lawn mower. Also included in the report is an evaluation of the device, accomplished by measuring specially constructed test slabs and numerous in-service bridges. The evaluation tests indicate that the instrument provides a practical and effective means for the routine detection by maintenance personnel of bridge deck delamination. The instrument was found to be insensitive to deck texture, or to thin asphaltic surfacing layers. The operation of the detector is not impaired by rolling speeds up to 10 mph.