LARGE-SCALE INVESTIGATIONS OF PRECAST CONCRETE SLABS

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ABSTRACT
Due to increasing traffic numbers, especially heavy goods vehicles and higher global temperatures, the road infrastructure requires more and longer maintenance measures, leading to longer non-availabilities for the road users. In the research project “HESTER” (Hybrid Retrofitting System for Maintaining Roads including the Usage of Novel Materials), a precast concrete pavement was established aiming for an economical and durable construction in the shortest time possible. Particularly in heavy load areas like bus stops, this approach is an extremely innovative and promising option for solving the before-mentioned problem. As part of the cooperative research project, the TU Dresden conducted large-scale investigations of precast concrete slabs under realistic conditions. Four precast slabs, having four different jointing systems respectively, enabled the examination of eight systems under high cyclic loading. The slabs, bedded on a silica-resin material, consisted of a novel concrete mixture, especially designed in order to withstand higher traffic and climatic loading.