

납선조건에 따른 에스컬레이터 소음예측지수 개발 Noise Prediction Index Development of Escalator with respect to Room Conditions

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ABSTRACT

It is necessary to consider conditions of room in which the escalator is installed to estimate noise of the escalator. In this study, the escalator and the surrounding room are modeled and analyzed using SEA. The SEA model was validated with the test using speaker source within 3 dB. Sizes and absorption coefficients of the surrounding room were selected as main variables of room condition through several building sites installed escalators. Central composite method in design of experiment was introduced to develop noise prediction indices of escalator with established SEA models suitable to room types. The numerous SEA analysis was integrated with design optimization S/W to avoid iterative and time-consuming procedure. Two kinds of noise prediction indices were developed, which had a high correlation over 0.9. Noise of escalator with respect to room conditions can be evaluated easily using these indices. Also it is easy for beginners to use noise prediction indices by using spread sheet.

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