

The Effect of Floor Impact Sound Insulation Performance Using Scrambled Thermoplastic Poly Urethane and Ethylene Vinyl Acetate

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Abstract : Most of apartments in Korea have wall type structure that present poor performance regarding floor impact sound insulation. In order to minimize the transmission of floor impact sound, flooring structures are used in which an insulating material, 30 mm thickness pad of EPS or EVA, is sandwiched between a concrete slab and the finished mortar. Generally, a single-material pad used for insulation has a heavyweight impact sound level of 44~47 dB with 210 mm thickness slab. This study provides an analysis of the floor impact sound insulation performance using thermoplastic poly urethane (TPU), ethylene vinyl acetate (EVA), and expanded polystyrene (EPS) materials with buffering performance. Following mock-up tests the effect of lightweight impact sound turned out to be similar but heavyweight impact sound was decreased by 3 dB compared to conventional single material insulation pad.

Keywords : floor impact sound, thermoplastic poly urethane, ethylene vinyl acetate, heavyweight impact sound

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