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Conversion of floor impact sound levels in apartment buildings

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A procedure to convert the floor impact sound level of the bang machine as well as the tapping machine into that of the impact ball was suggested. Because the bang machine has been the only standard heavy-weight impact source for a long time in Japan and Korea, much of its data is available. The conversion factor of the sound pressure level between the impact ball and other standard impact sources was applied to the sound pressure level of a bang machine and a tapping machine. In addition, a conversion method using a correlation analysis between the sound pressure level of impact ball and that of other standard impact sources at each octave band was also investigated. Results indicate that bang machine and tapping machine data can be successfully converted into impact-ball data, in the case of box-framed type, reinforced concrete structures.