

Effects of Sand Bed Anti-Vibration Mount on Transmitted Noise from Portable On-Site Electricity Generator

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Abstract

This study investigated the effect of different particle sizes of sand bed anti-vibration mount on transmitted noise from a portable on-site electricity generator. Ten sand bed anti-vibration mounts, 650mm × 650mm in cross section and 75mm thickness were prepared with particle sizes ranging from 0.09 to 2.30mm. Noise measurements were taken in the four cardinal directions using Extech HD600 digital sound level meter. The results of the study showed that the ability of the sand particles to dampen vibration noise from the portable electricity generator reduces with increase in particle size. The sand bed anti-vibration mounts reduced noise levels by 0.11 to 2.78 dB(A). However, fine sand bed of particle size 0.09mm and 0.15mm exhibited superiority in noise reduction over all other sand beds. In order to achieve appreciable noise reduction, the use of ISO 14688-1:2002 fine sand category is recommended as anti-vibration mount in combination with other damping methods.

Keywords: Electricity generator, noise, sand, particle size and attenuation

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