Studi pengaruh perforasi terhadap koefisien absorpsi bunyi pada material gipsum = Study of the influence of perforation to the sound absorption coefficient of gypsum material

Palupi, Maharani Ratna, author

Abstrak

[ABSTRAK
Telah dilakukan penelitian tentang pengaruh diameter perforasi terhadap koefisien absorpsi bunyi pada material gipsum secara eksperimen dengan menggunakan metode pengukuran yang tercantum dalam ISO 354-1985. Sampel divariasikan terhadap kondisi tanpa perforasi dan terhadap diameter perforasi yaitu 0,8 mm, 1,2 mm, 2 mm, 4 mm, 6 mm, 8 mm, 10 mm dan 12 mm. Ada dua konfigurasi sampel yang diteliti, yaitu sampel lapis tunggal (Sampel T) dan sampel sandwich (Sampel S). Hasil penelitian menunjukkan adanya peningkatan koefisien absorpsi bunyi hingga 27,97% seiring dengan penambahan diameter perforasi terutama di frekuensi 125 Hz, 250 Hz, dan 500 Hz. Kenaikan koefisien absorpsi bunyi juga terjadi pada saat diberikan sisipan rockwool di antara dua panel gipsum. Kedua konfigurasi sampel dengan diameter perforasi 12 mm bisa digunakan sebagai pilihan bahan penyerap bunyi untuk pengendalian bunyi di frekuensi 125 Hz, 250 Hz, dan 500 Hz.
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ABSTRACT
Investigation on the influence of the perforation diameter to the sound absorption coefficient in the gypsum material has been conducted experimentally by using measurement methods in ISO 354-1985. The samples were varied on the condition perforation. Perforation diameter about none, 0.8 mm, 1.2 mm, 2 mm, 4 mm, 6 mm, 8 mm, 10 mm and 12 mm. There were two configurations of samples, namely a single-layer samples (Sample T) and sandwich samples (Sample S). The results show the increasing in sound absorption coefficients up to 27,97% along with the addition of diameter perforations, especially in the frequency of 125 Hz, 250 Hz, and 500 Hz. The increasing in sound absorption coefficient also occur during insertion of rockwool between two gypsum panels. Both sample configuration with 12 mm diameter perforation can be used as a sound absorbent material to control sound at frequencies of 125 Hz, 250 Hz, and 500 Hz., Investigation on the influence of the perforation diameter to the sound absorption
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