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## Estimation of flow resistivity in polyurethane foams through measurements of normal incidence acoustic absorption coefficients

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The normal incidence acoustic absorption coefficients (NIAAC) in the frequency range (200 Hz to 4000 Hz) were experimentally determined for commercially available polyurethane (PU) foams of densities in the range 12 kg $m^{-3}$ to 21 kg $m^{-3}$ and thicknesses in the range 5.08 cm to10.16 cm using the standing wave tube according to the American Society for Testing and Materials (ASTM) Standard C384-04. Data show that NIAAC increase approximately linearly in the low-frequency range (200 Hz to 500 Hz) and vary (0.71 to 0.97) in high-frequency range (1000 Hz to 4000 Hz) of interest. The NIAAC were calculated using MATLAB based Dunn & Davern model as a function of frequency considering flow resistivity as a variable. The modeled NIAAC fitted well with experimentally determined NIAAC. It has been observed that the flow resistivity increased with increasing density of PU foams. However, no definite relationship was found between flow resistivity values and thickness of PU foam materials.

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