

(Research Article)
Investigation of form influence in design and manufacturing of sound control chambers of compressor

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Received: 2020/04/12, Accepted: 2020/07/25

Abstract

In some cases, the placement of equipment that causes noise pollution in office and educational environments is inevitable. Therefore, the only way to ensure the sound comfort of the environment is to control sound emission from its source. The use of sound control chambers in this regard is common, and the performance of these types of chambers is determined by selecting adsorbent and its thickness. Given that the shape and form of the adsorbent also have a significant effect on sound control, the study of the common form of sound adsorption has been performed on the control of sound emission. In order to reduce the noise emitted from the sound source among the forms available in the market, three shutter panel models pyramid and oval shoulder made of polyurethane with the same density and thickness were selected from floor to peak. Measurements were performed in two directions and each test was performed twice with an audiometer. The tests were performed in two types of spectrum for each form of adsorbent and also without adsorption and ambient noise. After measuring the equivalent level intensity and frequency spectrum and comparing the results, the pyramid form was the best among the selected forms.

Keywords: Acoustic chamber, Sound absorption form, Compressor.

pp. 61-67 (In Persian)

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