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Sound-absorbing polyurethane foam for the auto industry

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Abstract

© 2017, Allerton Press, Inc. Ambient noise harms the human organism: it produces high levels of the stress hormones, disrupts the operation of the nervous system, provokes cardiovascular damage, and impairs hearing. In the creation of new noise-reducing materials, the goal is to increase porosity without loss of structural strength. With greater porosity and reduced thickness, acoustic insulation will be lighter, which is better for use in automobiles. In addition, the dynamic characteristics are improved, and vehicle assembly is simplified.

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Keywords

absorption coefficient, auto design, polyurethane foam, porosity, sound absorption

References

- [1] Noise and its impact on human health. <http://megabook.ru/article/IllyM>. Accessed April 26, 2015.
- [2] Grechishnikov, V.A., Petukhov, Yu.E., Kosarev, V.A., et al., Instrumental'naya tekhnika, tekhnologiya izgotovleniya v SAPR RI: uchebnoe posobie (Instrumental Technique and Production Technology in CAD RI: Manual), Grechishnikov, V.A., Ed., Moscow: Mosk. Gos. Tekh. Univ., Stankin, 2015.
- [3] Zharin, D.E., Yurasov, S.Y., Gumerov, M.I., and Shafigullin, L.N., Vibration-and noise-absorbing polymer composites used in manufacturing, Russ. Eng. Res., 2010, vol. 30, no. 2, pp. 194-196.
- [4] GOST (State Standard) 28157-89: Tests for Flammability of Plastic Materials, Moscow: Izd. Standartov, 1990.
- [5] GOST (State Standard) 16297-80: Sound Insulation and Sound Absorption Materials. Methods of Testing, Moscow: Izd. Standartov, 1981.
- [6] GOST (State Standard) 7076-99: Method of Determination of Steady-State Thermal Conductivity and Thermal Resistance, Moscow: Gosstroj Rossii, 2000.
- [7] GOST (State Standard) 427-75: Measuring Metal Rules. Basic Parameters and Dimensions. Specifications, Moscow: Izd. Standartov, 1977.