

PATENTOLOGICAL APPROACHES TO THE STUDY OF NOISE TECHNOLOGIES IN THE REDUCTION OF THE NOISE ON THE CONSTRUCTION AREA AND THE ENVIRONMENT

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Noise causes a person to "acoustical stress", leading to heart failure, angina pectoris, increased blood pressure and to the dysregulation of many body functions. Intense noise (more than 80 dBA) with daily exposure leads to the emergence of occupational disease - hearing loss. Construction area are a notable source of noise in residential buildings, so complaints from people living in the areas adjacent to him are about discomfort from noise. Noise on construction area are a notable source of noise in residential buildings, so complaints from people living in the areas adjacent to him are about discomfort from noise. Noise on construction area is one of the main sources of environmentally harmful noise pollution of the environment [1,2,3]. sites is one of the main sources of environmentally harmful noise pollution of the environment [1,2,3].

Works on construction sites can be accompanied by varying degrees of noise, depending on the nature of the work. When carrying out construction work, dump trucks, cranes, loaders, mobile compressor stations and other equipment with diesel engines are used. Works of asphalt laying is accompanied by noise (75 - 80 dBA), sealing work is very noisy (80 - 85 dBA), piling works - super noise (85 - 100 dBA) [4,5].

In connection with the urgency of the impact of noise on builders and the population living near the construction site, the question arises of optimizing construction technologies from the viewpoint of reducing noise in their implementation. For this purpose, it is possible to conduct patentological studies [6] in this direction. From the literature it is known about patentological approaches to the study of patent and technical objects in the field of production technologies [7], engineering [8], technospheric safety [9].

Stages of a patentological study on a particular topic under study include preprocessing of patent arrays on a given topic and the formation of a thematically restricted locus of patent data, a patentological analysis of the results obtained, analysis of technologies from the point of view of their classification. The main information base for the formation of a patent locus is the initial search patent cluster, which includes a thematically limited search area of the patent space. At the same time, loci of patents are used, which are the required part of the patent cluster - a thematic set of patents interconnected by functional links. A patent clone is formed by a patent information chain of modifiable characteristics of prototype technologies.

The main noise reduction measures on the construction site are subdivided into ways to reduce noise in its source, in the way of noise propagation in residential buildings. Technological and constructive measures are associated with the creation of less noisy equipment and technological processes, and the results of them are already being used at the construction site [10].

Proceeding from the above, the patent-technical objects (devices, methods, technologies) associated with noise protection by reducing it in the source of noise generation (low noise technologies) on the way of noise propagation are primarily of interest in the area of patents research in the analyzed direction: personal protective equipment from noise (antinoise, headphones, liners, helmets), mobile acoustic screens, etc.

Bibliography

- 1. Tomakov M.V., Tomakov V.I., Kurochkina O.V. Protection of residential buildings from the noise of construction sites - an urgent environmental problem of a large city. // Izvestiya Yugo-Zapadnogo Gosudarstvennogo Universiteta. – 2016. – № 2. – P.91-109.*
 - 2. Minina N.N., Ivanov N.I., Tyurina N.V., Elkin Yu.I., Gribov S.A., Kuklin D.A. Noise reduction during construction // Life safety. – 2005. – № 8. – P. 22-25.*
 - 3. Evstropov V.M. Prevention of emergencies: a textbook. – Rostov-on-Don: RGSU, 2014. – 152 p.*
 - 4. Ivanov N.I. Engineering practice. Theory and practice of noise control: a textbook. – M: University book, Logos, 2008. – 424 p.*
 - 5. Minina N.N. The noise of construction sites // Vestnik MGSU. – 2011. – №3. – P.128 - 133.*
 - 6. Evstropov V.M. General characteristics of the concept of patentology // International Journal of Experimental Education. – 2017. – No. 4-2. – P. 162-162; URL: <http://expeducation.ru/en/article/view?id=11477> (July 16, 2017).*
 - 7. Evstropov V.M. PATENTOLOGY AND PRODUCTION TECHNOLOGY. International Journal Of Applied And Fundamental Research. – 2017. – № 3 – URL: www.science-sd.com/471-25229 (23.10.2017).*
 - 8. Evstropov V.M., Pushenko S.L., Nikhaeva A.V. PATENTOLOGICAL ASPECTS OF ENGINEERING . International Journal Of Applied And Fundamental Research. – 2017. – № 3 – URL: www.science-sd.com/471-25360 (25.11.2017).*
 - 9. Evstropov V.M., Pushenko S.L., Nikhaeva A.V. PROSPECTS OF PATENTOLOGICAL RESEARCH IN THE ASPECT OF TECHNOSPHERE SAFETY. International Journal Of Applied And Fundamental Research. – 2017. – № 3 – URL: www.science-sd.com/471-25225 (15.10.2017).*
 - 10. Orlov O.G. Protection of residential buildings from the noise of construction equipment and technologies // INTERCTROIMECH 2014: materials of the International Scientific and Technical Conference. Samara, 2014. – P.244-246.*
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