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FIGHT AGAINST NOISE AND VIBRATION IN INDUSTRIAL BUILDINGS

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ABSTRACT	KEYWORDS
Annotation: this article provides descriptions of sources of noise in industrial premises, the level and spectral composition of noise, measures to reduce noise.	noise sources, noise level, noise reduction methods.

People involved in the production process are constantly operating in the influence of noise, which is released during technological processes. The emitted noise aggravates the working conditions, has a negative effect on the human organism, the high level of noise also has its own effect on production efficiency, so the fight against noise causes great household, sanitary-hygienic and economic damage. In industrial buildings, noise sources are heterogeneous. Music from the movement of any machines and mechanisms used in technological processes, from the flow of gases and liquids flowing from pipes, from radio and tv installations, various messages from announcements and others, high-pitched speech, sounds from sanitary and technical and engineering devices, sounds generated from the movement of intra-workshop transport cargo equipment can be a source of noise.

Based on the level and spectral composition of the noise, the noise value that affects a person is divided into three steps : i – pitch, noise at a level of more than 120-140 db, causes mechanical damage to the hearing organs of a person; ii-pitch, low noise less than 100-120 db and moderate noise at 80-90 db, which can cause incurable damage to the hearing organs of Measures to reduce noise were carried out on the basis of acoustic calculations. In acoustic calculations, the sources of noise formation, noise characteristics, the way of propagation of noise, the level of sound that is expected to be generated at the corresponding operating points of the room, the selection of means for reducing the noise level, etc.are carried out. The acceptable means for noise reduction are confirmed by accurate calculations with the indication of acoustic efficiency.

In industrial buildings, the following methods are used to reduce noise.

1. Construction-acoustic method of noise reduction.
2. Sound protection (insulation) method.
3. Method of using coating and acoustic screens in sound absorption.
4. Method of reducing noise by ventilation and in aerodynamic devices.

Noise reduction in industrial buildings is considered a much more complex process. When choosing which method to use to reduce noise, it is required to take into account the architectural and planned solutions of the building, its gabarite dimensions, the location of noise-generating sources in relation to each other, the nature of the noise, the peculiarities of noise propagation and feasibility factors.

In the initial process of design in the construction-acoustic method of noise reduction, two cases are considered in advance. In the first case, the spread of noise in the insulated room is reduced, in the second case, the sources of noise distribution in the room (technological equipment, sanitary and technical devices, etc.) Are reduced.k.the noise level from) is reduced.

In order to reduce the amount of noise in the room by the method of sound protection (insulation), it is recommended to design the partitions, outer walls, intermediate walls, doors and windows of the building from soundproof products, in addition to various sound-absorbing coating products when covering walls and floors.

In buildings belonging to the i-category in terms of sound protection, the wall thickness is acceptable in the range of rooms from double-sided plastered walls with a thickness of 125 mm (0.5 bricks), when doors and windows make up 10% or more of the total wall area, in the amount of 250mm (1 brick). The above requirement is also provided by reinforced concrete walls with a thickness of 100 mm.

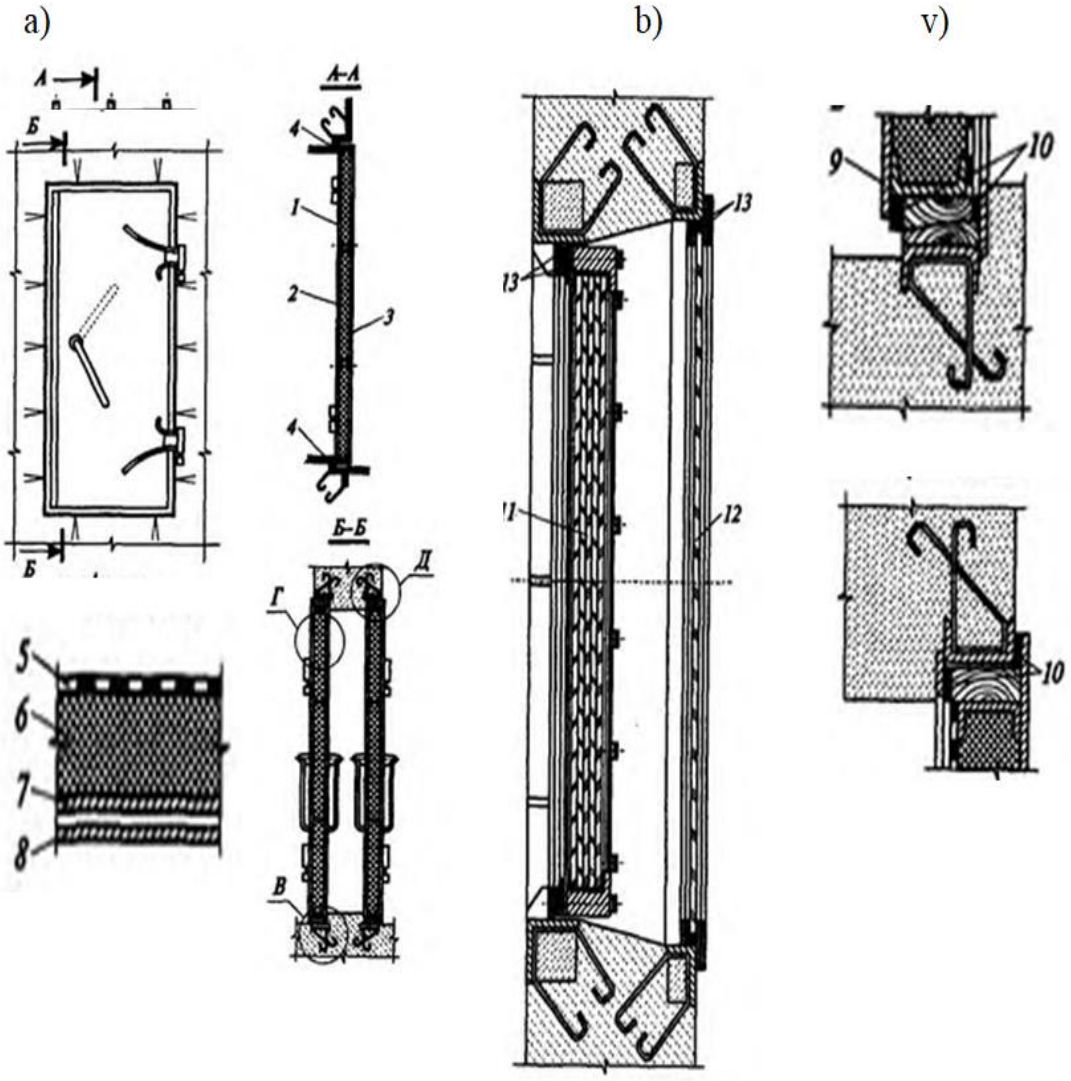
In buildings belonging to category ii in terms of sound protection, rooms are provided through double-sided plastered walls with a thickness of 250 mm (1mm) between them, reinforced concrete walls with a thickness of 200 mm. When 10% or more of the total area of walls is formed by doors and windows, walls with a thickness of 380 mm (1.5 bricks) are used.

In buildings belonging to category iii in terms of sound protection, full-section walls that do not have doors and windows are made of double-sided plastered walls with a thickness of 380 mm (1.5 bricks), and in walls with doors and windows, the thickness of brick walls is assumed to be 510 mm (2 bricks), and the thickness of reinforced concrete walls

In buildings belonging to category iv in terms of sound protection, full-section walls that do not have doors and windows use double-sided plastered walls with a thickness of 625 mm (2.5 bricks), walls with two rows of air slits with a thickness of 380 and 510 mm when doors and windows make up 10% or more of the total wall area.

To increase the sound protection properties of doors located on the walls, it is recommended to work them from products with a high density, cover the door racks with various double-sided soundproofing products, and close the slats and door cutouts and slits on the thresholds with various tissue gaskets or rubber products. Figure 1.9 presents structures of doors and gates that protect against heavy and lightened sound, relief structures are recommended for buildings belonging to category i, and heavy structures are recommended for buildings belonging to category ii. For buildings belonging to category iii and iv, it is recommended to use two-story doors and gates, the structure of which is more complex. Strong dense closing requirements are imposed on the gates and gates, their ceilings and gaskets.

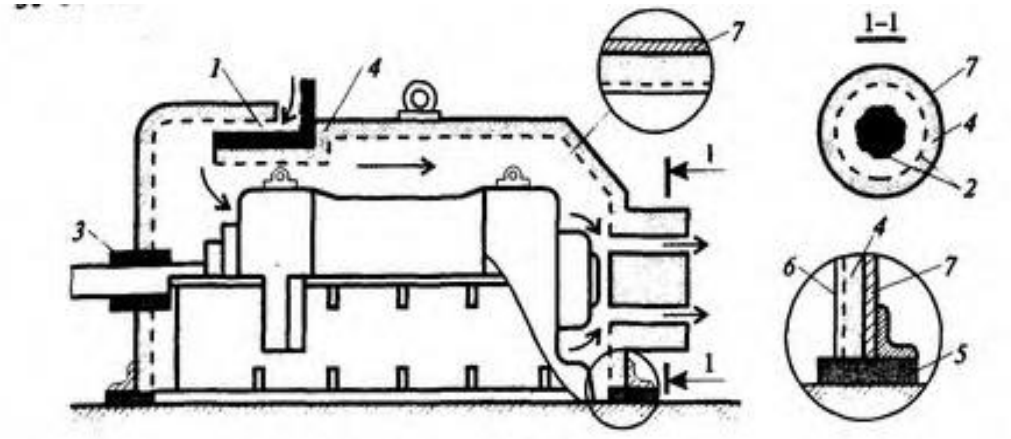
In some cases, observation cabins based on remote control systems hermetically designed from special light structures and sound-proof products are used to reduce noise in production premises.



picture 1. Aeration of one-story industrial buildings.

a)lightened door type; b)heavy door Type; C)window type with a high degree of sound protection; 1-duraluminum tab with a thickness of 2 mm; 2-semi - rigid mineral cotton plate with a thickness of 50 mm; 3-duraluminum tab with a thickness of 3 mm; 4-soft rubber gasket; 5-hole-hole tab with a thickness of 1.2 mm; 6-mineral cotton Tab; 10-soft rubber gasket; 11-silicate window with a thickness of 60 mm; 12–organic window with a thickness of 12 mm; 13-rubber gasket.

One of the inexpensive and simple ways to reduce noise in industrial buildings is to wrap technological devices and equipment by the upper with various sound-shielding textures and other types of gaskets. The use of this method allows you to reduce the amount of noise in workplaces to the desired amount. Die-casting products can also be stripped or demolished, have technological cracks for the introduction of mirrored tracking devices, various communication devices. 1.9. the figure shows the structure of the device, which is equipped with steel tabs from the top with a 30-50 mm sound conductive protective tissue from the inside, intended for air circulation.

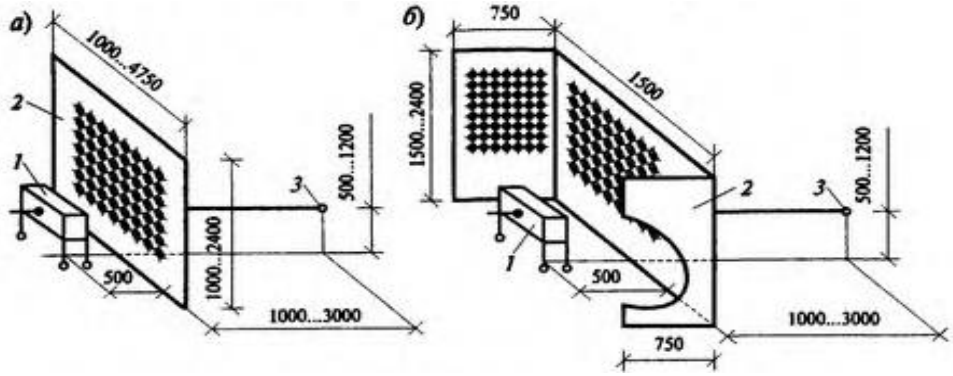


picture 2. Sound protection method.

1.2 - noise reduction devices designed for air circulation; 3 - Noise Reduction device; 4-sound - absorbing coating; 5-rubber gasket; 6-hole-perforated or mesh Tab; 7-metal tab.

In order to reduce the amount of noise in the room, it is also recommended to design rooms with low noise separated from rooms with a high level of noise, place devices in a separate room, install acoustic screens on the path of propagation of sound waves in combination with wrapping the device top with noise protection products.

In industrial buildings, acoustic screens are used to protect service mechanisms or neighboring sources of noise in workplaces. The screens act as a barrier in the way of sounds that spread correctly. Acoustic screens are processed from solid flat metal, plastic and other types of products, the side of which is directed to the noise-producing source is covered with sound-absorbing products with a thickness of 50-60 mm. 1.10 figure shows the types of acoustic screens.



picture 3. Types of acoustic screen.

a) Type" a"; b) Type"b"; 1-noise source; 2-acoustic screen; 3 - workplace (score point).

With the help of acoustic screens, it is possible to achieve a reduction in noise in the workplace in an amount ranging from an average of 10 dB to -15 dB.

USED LITERATURE

1. Botirova N. et al. DEVELOPMENT OF CONCRETE COMPOSITION WITH THE HELP OF CHEMICAL ADDITIVES OF HIGH STRENGTH HEAVY CONCRETE //Академические исследования в современной науке. – 2022. – Т. 1. – №. 17. – С. 99-106.
2. Botirova N., Abdikomilova M., Botirov B. SANOAT BINOLARINI LOYIHALASHNING UMUMIY ASOSLARI //Models and methods in modern science. – 2022. – Т. 1. – №. 17. – С. 75-81.

3. Farhod o‘g‘li B. B. et al. YUQORI MUSTAHKAMLIKKA EGA BO ‘LGAN OG ‘IR BETON UCHUN SEMENT VA TO ‘LDIRUVCHINING TAVSIFI //INTERNATIONAL SCIENTIFIC CONFERENCE" INNOVATIVE TRENDS IN SCIENCE, PRACTICE AND EDUCATION". – 2022. – T. 1. – №. 1. – C. 11-117.
4. Farhod o’g’li B. B., Berdiyev O. B. Optimal Composition and Study of The Physical and Mechanical Properties of High-Strength Heavy Concrete //European Journal of Life Safety and Stability (2660-9630). – 2022. – T. 16. – C. 14-17.