ANALYSIS OF THE WAYS INCREASING THE ECOLOGICAL SAFETY OF HIGHWAY TERRITORIES

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Solution of the problem how to increase highways safety level problem for the environment of large industrial cities is one of the main problem for modern megalopolises. Constant growth of the vehicles number leads to increase of ecological danger for residents, and worsens the quality of life near highways and renders the adverse effect on the people’s health. The total environmental pollution, which is caused by means of transport vehicles in general view is divided into three types:

1) the dust and gas contamination of the air by dangerous substances, which are formed due to the movement of vehicles on the roads;
2) vibroacoustic pollution which consists in the harmful radiation of acoustic vibrations in the sound and infrasonic frequency ranges as well as in vibration;
3) the electromagnetic pollution caused by the contact system with voltage of 600V urban electric transport, and 3 kV for supplying the trains with power.

Each of the transport means has the individual ecological pressure for environment, which is formed from the above-mentioned components. Value of the load depends on the characteristics of the vehicle and the characteristics of its movement on the city roads.

Compare of the values of emissions of main dangerous substance by means of transport shows that the most harmful in terms of gas emissions is the road transport. The studies have shown that road transport in most large cities of Ukraine causes from 40 to 70 % of the total atmospheric pollution.

In connection with proved harm of chemical substances contained in discharge gas of motor vehicles for environment and people who work or live in homes that are located close to highways, there is an impelling need of development the organizational-technical measures which would prevent the formation and spread of harmful emissions into the atmospheric space.

Analyzing the measures aimed to improve the condition of air environment near the transport highways, it can be concluded that by two criteria - gas contamination and traffic flow noise - they are contradictory. So, for example, as the average speed of vehicles movement in the stream directly affects on the equivalent noise level, it is reasonable to decrease this value in order to reduce the acoustic load levels. However, this, in turn, causes the increasing of gas contamination in this area of the transport route. Most of the measures that would be definitely effective in the aspect of air pollution and reducing the acoustic load (for example, tunnels) require significant investment. Creation of buffer zones that could protect dwelling zone from noise, dust and gas contamination of the traffic flows contradicts tendencies of compaction of urban development in cities and can not be implemented for the already formed architectural layout. Green plantations which are planted to protect buildings from dangerous and harmful factors of highways must be planted with width of more than 20 meters to obtain a significant effect, which is practically impossible in the cities with their deficit of area.

Thus, the most effective measures that would protect dwelling zones from the harmful effects of transport highway, is the implementation of local measures and means, which would allow to substantially improve the environmental pressure on the surroundings. Such measures include the installing Y-shaped protective screens, which allow not only reducing the acoustic load on highway territories, but also prevent the spread of dangerous substances, which are generated by vehicles.