

ENVIRONMENTAL ASPECTS IN THE TECHNICAL OPERATION OF THE "ARCELORMITTAL KRYVYI RIH" PLANT

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Urban planning for industrial enterprises is an essential aspect of territorial planning, as such facilities have a significant impact on the environment, economy, and social sphere. In Ukraine, urban development is regulated by laws, state building codes (DBN), and environmental standards. One of the largest industrial enterprises in Ukraine is the ArcelorMittal Kryvyi Rih steel plant, which operates a full steel production cycle.

Requirements for Industrial Enterprises in Urban Areas

The placement of metallurgical industry enterprises is determined by several regulatory documents, including:

Urban Planning Requirements: Law of Ukraine "On Regulation of Urban Development Activities" – establishes the procedure for planning and construction of territories, determines the basic requirements for the placement of industrial facilities, and provides for measures to reduce the negative impact of production on the population and the environment; Law of Ukraine "On Environmental Protection" – obliges enterprises to comply with environmental standards, minimize harmful emissions, and implement modern environmental protection technologies; city master plan and local zoning plans – determine the possibility of locating enterprises in certain industrial zones and regulate distances to residential areas, transport infrastructure, and nature conservation areas.

Key Principles of Urban Planning for Industrial Facilities:

- Placement of the plant in specially designated industrial zones.
- Compliance with sanitary protection zones between the enterprise and residential areas.
- Minimization of the negative impact on the environment.
- Ensuring efficient logistics, transport, and engineering communications.

State Building Standards (DBN) establish technical requirements for the design, construction, and operation of industrial facilities.

The main DBNs regulating the construction of metallurgical plants include:

1. DBN B.2.2-12:2019 "Planning and Development of Territories"
This document defines general requirements for the placement of industrial facilities, their connection to transport infrastructure, and engineering communications.

Key provisions regulated by this DBN: industrial enterprises must be located in specially designated areas, away from residential districts; sanitary protection zones must be maintained according to the hazard class of the enterprise; effective water supply, sewage, and energy supply must be ensured.

2. DBN B.2.2-40:2018 "Accessibility of Buildings and Structures. General Provisions".

This document regulates general requirements for industrial facilities, in particular: planning of production premises must contribute to an efficient production process and minimize harmful impacts on employees; buildings must comply with fire and technogenic safety standards; requirements for ventilation, air conditioning, and noise protection systems are provided.

3. DBN B.1.1-31:2013 "Protection of Territories, Buildings, and Structures from Noise". Considering that metallurgical enterprises are sources of significant noise pollution, this regulatory document establishes requirements for sound insulation and measures to minimize noise impact on the environment.
4. DBN B.2.5-20-2018 "Gas Supply". Metallurgical enterprises consume large volumes of gas for technological processes. This document establishes the rules for the design, construction, and operation of gas supply systems.
5. DBN B.1.1-12:2014 "Construction in Seismic Areas of Ukraine". The ArcelorMittal Kryvyi Rih plant is located in the Kryvyi Rih iron ore basin, where there is a risk of earthquakes and ground subsidence. Therefore, the requirements of this DBN must be taken into account in the design to increase the stability of buildings.

Environmental and Sanitary Requirements.

Every industrial enterprise must comply with environmental standards. The main requirements include: control of harmful emissions: enterprises must use treatment facilities and modern filters to reduce pollution levels; water supply and sewage: discharging untreated wastewater into water bodies is prohibited; land reclamation: after the completion of activities, industrial zones must be restored. For the ArcelorMittal Kryvyi Rih plant, the introduction of modern technologies that reduce emissions of dust, gases, and heavy metals is of particular importance.

Conclusion. Urban planning for metallurgical plants is a complex process that requires compliance with numerous norms and standards. The ArcelorMittal Kryvyi Rih plant must meet Ukrainian legislation, including state building codes and environmental requirements. Adhering to these requirements minimizes the negative impact of industrial production on the population and the environment while ensuring the safe operation of the enterprise.

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