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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

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Replacing GB 50406-2007

**Code for design of environmental Protection of iron and steel
industry**

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Table of Contents

- 1 General
- 2 terms
- 3 Basic Regulations
- 4 Plant site selection and general plan layout
 - 4.1 Site selection
- 5.3 Raw material field
- 5.4 Sintering, pelletizing

1 General

1.0.1 In order to improve the environmental protection design level of steel industry construction projects, fully implement the "Environmental Protection Law of the People's Republic of China" and laws, regulations and policies related to steel industry pollution prevention and steel industry development policies, etc., to protect and improve environmental quality, formulate this specification.

1.0.2 This code is applicable to the environmental protection design of iron and steel industry construction projects. Iron and steel industry includes iron ore, manganese ore, chromium ore mining and dressing and sintering, pelletizing, coking, ironmaking, steelmaking, steel rolling, ferroalloy, carbon, refractory materials, metal products and other related processes and related supporting processes. Environmental protection of the iron and steel industry, including environmental protection design for waste gas, waste water, noise, and solid waste produced in the production process of the iron and steel industry, site selection, general layout requirements, and division of environmental protection facilities.

1.0.3 The environmental protection design of iron and steel industry construction projects shall not only comply with this code, but also comply with the current relevant national standards.

2.0.1 sintering flue gas purification

Treatment of flue gas containing particulate matter, sulfur dioxide, nitrogen oxides, fluoride and dioxins and other pollutants generated during iron ore powder sintering and pellet production.

2.0.2 Dedusting of blast furnace tapping yard

The control of particulate matter in blast furnace smelting and tapping sites (mainly including taphole, main ditch, iron ditch, slag ditch, scum skimmer, swing nozzle and other production facilities).

2.0.3 Electrical arc furnace flue gas purification

Treatment of flue gas containing particulate matter and dioxins and other pollutants produced by electric furnaces during melting, oxidative decarburization, and reduction smelting processes.

2.0.4 primary dedusting of converter primary dedusting of converter

The control of particulate matter in the flue gas (including recovered gas and vented gas) produced by converter oxygen blowing smelting.

2.0.5 New OG method for con-verter primary flue gas purification

For the particles in the primary flue gas of the converter, the wet purification method of spray tower + annular seam device + dehydration tower is adopted.

2.0.6 Secondary fume and dust of con-verter

In addition to the primary flue gas of converter steelmaking, the treatment of all dust-containing flue gas generated in the production process of molten iron, feeding, slag tapping, and steel tapping.

2.0.7 utilization of recycled water

In a defined production system, the used water is reused in the same production process directly or after appropriate treatment.

2.0.8 cascade utilization of water

According to the different requirements for water quality in each process, each workshop or in different scopes in the production process, the water is used in cascading order according to the water quality requirements from high to low.

2.0.9 direct cooling water direct cooling water

The cooling water is in direct contact with the cooled equipment or medium.

2.0.10 recycle rate of water

Within a certain measurement period, the ratio of the reused water in the whole production process of the enterprise to the total water consumption.

3.0.1 The environmental protection design content should be included in the construction project design documents.

3.0.2 The environmental protection design content of the construction project shall be designed, constructed and put into operation at the same time as the main project.

3.0.3 The environmental protection design of iron and steel industry construction projects should strictly control the total amount of pollutant discharge and ensure that the discharge of pollutants reaches the standard.

3.0.4 The design of waste gas, waste water, solid waste and noise environmental protection treatment facilities and ecological protection of iron and steel industry construction projects shall meet the following requirements.

1 Purification prevention and control technology should adopt mature waste gas pollutant technology, and dry purification technology should be used instead of wet purification for gas purification. In the key control areas for air pollution prevention and control designated by the state, requirements for the prevention and control of exhaust gas pollution should be set. After the exhaust gas pollutants of each process are purified, they should meet the emission requirements of the iron and steel industry and related exhaust gas pollutants.

2 In accordance with the principles of grading, quality-based supply, and water use, technologies such as cleaning and diversion, recycling water, and cascading water are used to increase the reuse rate of production water in each process. Urban reclaimed water should be used as part of the water supply source. It is not allowed to discharge coking phenol cyanide wastewater and cold rolling wastewater containing heavy metals to the environment. After the wastewater pollutants in each process are purified, they should meet the discharge requirements of the iron and steel industry and related wastewater pollutants.

3 Solid waste should be comprehensively utilized or disposed of safely. The storage and disposal of solid waste should comply with the current national standards "Standards for Pollution Control of General Industrial Solid Waste Storage and Disposal Sites" GB 18599, "Standards for Pollution Control of Hazardous Waste Storage" GB 18597 and "Relevant provisions of GB 18598 Standards for Pollution Control of Hazardous Waste Landfills.

4 Low-noise production techniques and equipment should be selected, and noise sources should be controlled. The factory boundary shall comply with the environmental noise emission standards of the iron and steel industry and related factory boundaries.

5 Mining and beneficiation of metal mines in the iron and steel industry should strengthen ecological environment protection during construction, operation and mine closure, and do a good job in the planning and implementation of ecological environment protection.

3.0.5 The design of automatic monitoring of waste gas and waste water in iron and steel industry construction projects shall meet the relevant technical requirements.

3.0.6 For imported projects, the pollutant discharge of its equipment and devices shall meet the relevant requirements for pollutant discharge.

4.1 Site selection

5.2.8 The tailings slurry should be concentrated and transported, and high-concentration transport should be used. The transport system should use wear-resistant pipes, and the transport system should use double-circuit wear-resistant pipes.

5.2.9 The discarded tailings produced by mineral processing should be disposed of properly and should not be discarded at will.

5.2.10 The site selection, closure of tailings ponds and environmental protection measures for tailings facilities shall comply with the relevant provisions of the current national standard "Code for Design of Tailings Facilities" GB 50863.

5.2.11 The vibrating screen of the crushing and screening system should adopt non-metal material screen and spring shock absorber and other noise reduction measures. Partial sealing measures should be taken for vibrating screens and ball mills. Underground mine warehouses should use low-noise feeding and discharging equipment.

5.3 Raw material field

5.3.1 Raw material yards should take measures to prevent dust generation. For raw material yards located in key control areas, and for raw material yards outside of key control areas but within the urban planning area, closed storage techniques should be used for bulk materials. For raw material yards that are not in key control areas or in urban planning areas, pollution prevention and control measures such as dust-proof nets, water spraying or surface covering agents should be taken.

5.3.2 Automatically controlled continuous conveying facilities shall be adopted for bulk material transportation, and spray dust suppression devices shall be installed for material stacking and fetching equipment.

5.3.3 For raw material yards within key control areas, belt conveyors should be equipped with closed corridors or other closed transportation methods, and belt conveyors in other areas should be equipped with belt machine covers. The belt conveyor transfer, unloading, and receiving dust points should be closed and equipped with dust removal or dust suppression facilities. The dust production points of crushing, screening and other facilities should be closed and equipped with dust removal facilities.

5.3.4 Closed measures should be taken for train dumpers and car receiving troughs, and dust removal facilities or high-efficiency spray dust suppression devices should be installed.

5.3.5 The ash discharge, transportation and storage of the dust collector should adopt airtight devices, and the long-distance transportation of the dust should be carried out by