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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB 39726-2020

Emission Standard of Air Pollutants for Foundry Industry

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1 Scope of application

This standard specifies the air pollutant emission control requirements, monitoring and supervision and management requirements for the foundry industry.

This standard is applicable to the management of air pollutant emissions of existing foundry industrial enterprises or production facilities, as well as the environment of foundry industrial construction projects Impact assessment, design of environmental protection facilities, completed environmental protection acceptance, issuance of pollutant discharge permits and management of air pollutant emissions after they are put into operation.

Foundry pig iron enterprises, as well as blast furnaces, sintering, and pelletizing processes in foundry enterprises are subject to GB 28663, GB 28662 relevant provisions.

2 Normative references

This standard refers to the following documents or clauses thereof. For dated references, only the dated version applies to this standard.

For undated references, the latest edition (including all amendments) applies to this standard.

GB 28662 Iron and Steel Sintering and Pelletizing Industrial Air Pollutants Emission Standard

GB 28663 Ironmaking Industry Air Pollutant Emission Standard

GB 37822 Volatile organic compound fugitive emission control standard

GB/T 4754-2017 National Economic Industry Classification

GB/T 15264 Determination of lead in ambient air flame atomic absorption spectrophotometry

GB/T 15432 Determination of total suspended particulate matter in ambient air by gravimetric method

GB/T 16157 Determination of particulate matter in exhaust gas from stationary pollution sources and sampling methods for gaseous pollutants

GB/T 16758 Classification and technical conditions of exhaust hoods HJ 38 Determination of total hydrocarbons, methane and non-methane total hydrocarbons in waste gas from stationary pollution sources by gas chromatography HJ/T 42 Determination of nitrogen oxides in exhaust gas from stationary pollution sources by UV spectrophotometry HJ/T 43 Determination of nitrogen oxides in exhaust gas from stationary pollution sources - Naphthalene ethylenediamine hydrochloride spectrophotometric method HJ/T 55 Technical guidelines for monitoring fugitive emissions of air pollutants HJ/T 56 Determination of sulfur dioxide in exhaust gas from stationary pollution sources by iodometric method HJ 57 Determination of Sulfur Dioxide in Waste Gas from Stationary Pollution Source Constant Potential Electrolysis HJ 75 Technical Specification for Continuous Monitoring of Flue Gas (SO2, NOx, Particulate Matter) Emissions from Stationary Pollution Sources HJ/T 397 Technical Specification for Stationary Source Waste Gas Monitoring HJ 539 Determination of Lead in Ambient Air Graphite Furnace Atomic Absorption Spectrophotometry HJ 604 Determination of Total Hydrocarbons, Methane and Non-Methane Total Hydrocarbons in Ambient Air Direct Injection-Gas Chromatography HJ 629 Determination of Sulfur Dioxide in Exhaust Gas from Stationary Pollution Source Non-dispersive Infrared Absorption Method HJ 657 Determination of lead and other metal elements in air and exhaust particulates Inductively coupled plasma mass spectrometry HJ 685 Determination of Lead in Exhaust Gas from Stationary Pollution Source Flame Atomic Absorption Spectrophotometry 2HJ 692 Determination of nitrogen oxides in waste gas from stationary pollution sources by non-dispersive infrared absorption method HJ 693 Determination of nitrogen oxides in waste gas from stationary pollution sources by constant potential electrolysis HJ 732 Sampling air bag method for volatile organic compounds in waste gas from stationary pollution sources HJ 734 Determination of Volatile Organic Compounds in Waste Gas from Stationary Pollution Sources Solid Phase Adsorption-Thermal Desorption/Gas Chromatography-Mass Spectrometry HJ 777 Determination of Metal Elements in Air and Exhaust Particulates by Inductively Coupled Plasma Emission Spectrometry HJ 819 General Principles of Technical Guidelines for Self-Monitoring of Pollutants HJ 836 Gravimetric Method for Determination of Low-Concentration Particulate Matter in Exhaust Gas from Stationary Pollution Sources HJ 944 General Principles of Technical Specifications for Environmental Management Ledger and Pollution Permit

Implementation Report of Pollutant Discharging Units (Trial)

HJ 1131 Portable UV Absorption Method for Determination of Sulfur Dioxide in Waste Gas from Stationary Pollution Sources HJ 1132 Portable UV Absorption Method for Determination of Nitrogen Oxides in Exhaust Gas from Stationary Pollution Sources WS/T 757-2016 Technical Specification for Wind Speed Detection and Evaluation of Local Exhaust Facilities "Administrative Measures for Automatic Monitoring of Pollution Sources" (Order No. 28 of the State Environmental Protection Administration)

Measures for the Administration of Environmental Monitoring (Order No. 39 of the State Environmental Protection Administration)

"Technical Guidelines for Continuous Monitoring of Non-methane Total Hydrocarbon Emissions in Waste Gas from Stationary Pollution Sources (Trial)" (Environmental Office Monitoring Letter [2020] No. 90)

3 Terms and Definitions

The following terms and definitions apply to this standard.

3.1 foundry industry Manufacturing of various metal castings. It belongs to the metal products industry in GB/T 4754-2017 and is classified as ferrous metal casting (C 3391)

and non-ferrous metal casting (C 3392). Ferrous metal casting refers to the manufacture of various finished and semi-finished products such as iron castings and steel castings; non-ferrous metal castings Manufacturing refers to the manufacture of various finished and semi-finished products such as non-ferrous metals and their alloy castings.

3.2 foundry Smelting metal, making molds, and pouring molten metal into molds, solidifying to obtain metal parts of certain shape, size, and properties Forming method of blanks.

3.3 metal melting The process of transforming the metal charge into a molten state by heating and adjusting it to the desired composition of the casting.

3.4 cupola cupola A vertical cylindrical iron furnace with pig iron and (or) scrap iron and steel as metal charge. According to the melting supply air temperature, it is divided into cold air cupola (drum Air temperature<=400 degrees C) and hot air cupola (blast temperature >400 degrees C).

3.5 electronic arc furnace A furnace in which an electric arc is generated between the electrodes and the charge to smelt metal.

3.6 gas smelting furnace A smelting (chemical) furnace for casting that uses only gaseous fuels (LPG, natural gas, coal gas, etc.).

33.7 electric induction furnace Furnace for heating, smelting metal and keeping molten metal warm by induction current.

3.8 holding furnace A furnace that stores molten metal smelted in a smelting furnace and keeps it at the proper temperature.

3.9 refining furnace A furnace for removing gas, impurity elements and inclusions in liquid metal, purifying molten metal and improving the quality of molten metal.

3.10 molding The process of making molds with process equipment such as casting materials and patterns.

3.11 core making The process of making core sand into a core box shape.

3.12 pouring The process of pouring molten metal from a ladle into a mold.

3.13 falling sand shakeout The process of separating the casting from the mold (core) sand by hand or mechanical methods can be carried out with a sand box or after the poke.

3.14 sand treatment sand preparation The process of batching and mixing molding sand according to process requirements, including drying of original sand and treatment of used sand.

3.15 sand reclamation The process of treating waste sand by roasting, wind blowing, water washing or machinery, so that its performance can replace new sand.

3.16 heat treatment for castings The heat treatment process is used to obtain the required mechanical properties or use requirements of the casting.

3.17 surface coatingsurface coating In order to protect or decorate the processing object, the process of coating the surface of the processing object with a coating film layer.

3.18 volatile organic compounds (VOCs)

Organic compounds participating in atmospheric photochemical reactions, or organic compounds determined according to relevant regulations.

When characterizing the overall emission of VOCs, according to industry characteristics and environmental management requirements, total volatile organic compounds (with TVOC) can be used.

expressed), non-methane total hydrocarbons (expressed as NMHC) as pollutant control items.

43.19 total volatile organic compounds (TVOC)

The specified monitoring method is used to measure the single VOCs substances in the exhaust gas, and the total amount of VOCs substances is obtained by summing up the single items.

The sum of the mass concentrations of VOCs substances. In actual work, the single VOCs substances that account for more than 90% of the total should be analyzed according to the expected analysis results.