

HJ

INDUSTRY STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

HJ 2059-2018

**Technical specification for wastewater treatment of copper
smelting**
(English Translation)

Issued on: December 28, 2018

Implemented on: March 1, 2019

Issued by: Ministry of Ecology and Environment

Table of Contents

Foreword

- 1 Scope of application
- 2 Normative references
- 3 Terms and definitions
 - 3.1 Copper smelting wastewater copper smelting wastewater
 - 3.2 Stained acid contaminated acid
 - 3.3 Acid wastewater containing heavy metals
- 4 Contaminants and pollution loads
 - 4.1 Wastewater source and classification
 - 4.2 Wastewater volume
 - 4.3 Wastewater quality
- 5 General requirements
 - 5.1 General provisions
 - 5.2 Source control
 - 5.3 Construction scale
 - 5.4 Engineering composition
 - 5.5 Project site selection and overall layout
- 6 Process design
 - 6.1 General requirements
 - 6.2 Process selection
 - 6.3 Sewage treatment
 - 6.4 Acid wastewater treatment

Foreword

In order to implement the Law of the People's Republic of China on Environmental Protection and the Law of the People's Republic of China on the Prevention and Control of Water Pollution, to prevent and control environmental pollution, standardize the construction and operation management of copper smelting wastewater treatment projects, and develop this standard.

This standard specifies the technical requirements for the design, construction, acceptance, operation and maintenance of copper smelting wastewater treatment engineering.

This standard is a guiding standard.

This standard is the first release.

This standard was formulated by the Science and Technology and Finance Department of the Ministry of Ecology and Environment.

This standard was drafted. China Metallurgical Construction Research Institute Co., Ltd., China Enfei Engineering Technology Co., Ltd., Yunnan Copper Co., Ltd., Jiangxi Copper Co., Ltd., Changsha Huashijie Environmental Technology Development Co., Ltd.

This standard is approved by the Ministry of Ecology and Environment on December 28, 2018.

This standard has been implemented since March 1, 2019.

This standard is explained by the Ministry of Ecology and Environment.

Technical specification for copper smelting wastewater treatment engineering

1 Scope of application

This standard specifies the technical requirements for the design, construction, acceptance, operation and maintenance of copper smelting wastewater treatment engineering.

This standard applies to the construction and operation management of copper smelting wastewater treatment project, and can be used as the environmental impact of copper smelting construction projects.

Reference basis for evaluation, environmental protection facility design, construction, acceptance and operation management.

This standard does not apply to the treatment of recycled copper smelting wastewater.

2 Normative references

The contents of this standard refer to the terms in the following documents. Valid versions of undated references, including modifications Single) Applicable to this standard.

GB 5085.1 Identification of hazardous wastes Corrosion identification GB 5085.3
Identification criteria for hazardous wastes GB 5086.1 Solid waste leaching toxicity leaching
method flip method GB 14048 low voltage switchgear and control equipment GB 14554
Odor Pollutant Emission Standard GB 18597 Hazardous Waste Storage Pollution Control
Standard GB 18598 Hazardous Waste Landfill Pollution Control Standard GB 18599
General industrial solid waste storage and disposal site pollution control standards GB/T
22580 Special environmental conditions Technical requirements for plateau electrical
equipment Low-voltage switchgear and control equipment GB 25467 Copper, nickel and
cobalt industrial pollutant discharge standards GB 50009 Building Structure Load

Specification GB 50013 Outdoor Water Supply Design Code GB 50014 Outdoor Drainage Design Code GB 50015 Building Water Supply and Drainage Design Code GB 50016 Building Design Fire Code GB 50034 Architectural Lighting Design Code GB 50046 industrial building anti-corrosion design specification GB 50052 design specification for power distribution system GB 50053 10KV and below substation design specifications GB 50054 Low Voltage Distribution Design Specification GB 50055 general purpose electrical equipment power distribution design specification GB 50057 lightning protection design code for buildings GB 50058 Specification for design of electrical installations for explosion and fire hazard environments GB 50059 35kV~110kV substation design specification GB 50093 automation instrument engineering construction and acceptance specifications GB 50116 Automatic fire alarm system design specification GB 50140 Building fire extinguisher configuration design specification GB 50141 Water supply and drainage structure engineering construction and acceptance specification GB 50187 General Plan for Design of Industrial Enterprises GB 50189 Public building energy-saving design standards GB 50191 seismic design code for structures GB 50194 Safety specifications for power supply at construction site GB 50204 Concrete structure engineering construction quality acceptance specification General specification for construction and acceptance of GB 50231 mechanical equipment installation engineering GB 50254 Electrical installation engineering Low-voltage electrical installation and acceptance specifications GB 50268 Water supply and drainage pipeline engineering construction and acceptance specifications GB 50974 Technical specification for fire water supply and fire hydrant systems GB 50981 Architectural Electromechanical Engineering Seismic Design Specification GB 50988 Non-ferrous metal industry environmental protection engineering design specification GB J 22 factory mine road design specification GB J 50141 Water supply and drainage structures engineering construction and acceptance specifications GBZ 1 industrial enterprise design hygiene standard GBZ 2.1 Occupational exposure limits for hazardous factors in industrial locations - Part 1. Chemically harmful factors GBZ 2.2 Occupational exposure limits for harmful factors in industrial sites - Part 2. Physical factors GBZ 158 industrial site occupational disease hazard warning sign CJJ 60 Urban Wastewater Treatment Plant Operation, Maintenance and Safety Technical Regulations HJ 557 Solid Waste Leaching Toxicity Leaching Method Horizontal Oscillation HJ 863.3 Sewage permit application and issuance technical specification Non-ferrous metal industry - copper smelting "Measures for Completion and Acceptance of Construction Projects (Engineering)" (Project Construction [1990] No. 1215) Regulations on the Safety Management of Dangerous Chemicals (Order No. 591 of the State Council) "Technical Requirements for Standardization and Remediation of Sewage Discharge Ports" (Trial) (Environmental Supervision [1996] No. 470) "Standard Conditions for Copper Smelting Industry" (Industry and Information Technology Department Announcement No. 29, 2014) Measures for the Administration of Hazardous Waste Transfer Joint Orders (Order No. 5 of the State Environmental Protection Administration) Interim Measures for Environmental Protection Acceptance of Construction Project Completion (Guohuan Environmental Impact Assessment [2017] No. 4) "Guidelines

for Feasible Technical Measures for Copper Smelting Pollution Prevention (Trial)" (Promulgation of Environmental Protection Department No. 24, 2015) National Directory of Hazardous Wastes (Order No. 39 of the Ministry of Environmental Protection) Catalogue of Major Environmental Protection Technology and Equipment Encouraged by the State

3 Terms and definitions

The following terms and definitions apply to this standard.

3.1 Copper smelting wastewater copper smelting wastewater

Refers to the production wastewater and initial rainwater discharged during the copper smelting production process.

3.2 Stained acid contaminated acid

Refers to the dilute acid containing sulfuric acid, heavy metals and other harmful impurities emitted from the smelting process of the smelting process.

Solution.

3.3 Acid wastewater containing heavy metals

Refers to wastewater containing heavy metals, acids, suspended solids and other harmful substances produced during the copper smelting process.

4.1 Wastewater source and classification

4.1.1

Production wastewater is mainly wastewater such as sulphuric acid, acid wastewater and general production wastewater.

4.1.2

Sewage is mainly derived from the purification process in the process of acid production from copper smelting flue gas. The main pollutants are dilute sulfuric acid, heavy metals and fluorine.

And suspended matter, etc.

4.1.3

Acidic wastewater is mainly derived from the sewage effluent treatment liquid, the effluent washing water discharged from the flue gas sulphuric acid system, the desulfurization wastewater, Acid washing area floor flushing water, wet process workshop drainage, acid mist purification drainage, contaminated ground washing water, laboratory wastewater, dangerous Leachate, raffinate, etc. in hazardous waste landfills, the main pollutants are