



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

GB/T 39733-2024

Replacing GB/T 39733-2020

Recycled iron and steel materials

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Foreword

This document was drafted in accordance with the provisions of GB/T 1.1-2020 "Directives for standardization - Part

1. Rules for the structure and drafting of standardizing documents". This document replaces GB/T 39733-2020 "Recycling iron-steel materials". Compared with GB/T 39733-2020, in addition to structural adjustments and editorial changes, the main technical changes are as follows:

- a) CHANGE the definition of "carried-waste" (see 3.5;
3.5 of the 2020 edition);
- b) ADD the terms and definitions of "non-ferrous metal substances" and "physical quantity of recycling iron-steel materials" (see
- c) CHANGE the types of recycling iron-steel materials, adjusting the types of light recycling iron-steel materials from 3 types to 4 types; ADD the LRS304 designation (see 4.2;
4.2 of the 2020 edition);
- d) ADD the block-type recycling iron-steel materials formed by bundling shredded recycling iron-steel materials (see 4.2);

- e) ADD the technical requirements for "physical quantity of steel" (see 5.5);
- f) CHANGE the inspection method of "carried-waste" (see 6.4;
6.5 of the 2020 edition);
- g) ADD the inspection method of "physical quantity of steel" (see 6.5);
- h) ADD the sampling of "physical quantity of steel" (see 7.3);
- i) ADD the determination of the inspection result of "physical quantity of steel" (see 7.4.5);

1 Scope

GB/T 39733-2024 is the Chinese standard for recycled iron and steel materials, and it is the document that decides whether a shipment of scrap is a raw material or a waste. That distinction is the whole point: since this standard came into force, material meeting it may be imported into China freely as a resource, while material failing it falls under the solid waste import ban. The standard sets the classification of the recycled materials by form and by composition, the requirements on the shape and dimensions, the bulk density, the chemical composition and the residual elements, the limits on non-metallic and non-ferrous inclusions, the limits on radioactive contamination and on hazardous substances and articles such as sealed vessels and explosive items, the sampling and the test methods, the inspection rules and the marking and the accompanying documents. The 2024 edition replaces GB/T 39733-2020. For a scrap trader, a steelworks buying charge material or a customs broker, this is the deciding text.

This document specifies the classification, technical requirements, inspection methods, acceptance rules, transportation and quality certificates of recycling iron-steel materials. This document applies to the processing and inspection of recycling iron-steel materials used as ferrous furnace materials in ironmaking, steelmaking, casting, and ferroalloy smelting.

2 Normative references

The contents of the following documents constitute essential clauses of this document through normative references in the text. Among them, for dated references, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies to this document.

GB 5085.1 Identification standards for hazardous wastes - Identification for corrosivity

GB 5085.2 Identification standards for hazardous wastes - Screening test for acute toxicity

GB 5085.3 Identification standards for hazardous wastes - Identification for extraction toxicity

GB 5085.4 Identification standards for hazardous wastes - Identification for ignitability

GB 5085.5 Identification standards for hazardous wastes - Identification for reactivity

GB 5085.6 Identification standards for hazardous wastes - Identification for toxic substance content

GB 5085.7 Identification standards for hazardous wastes - General specifications

GB/T 5202 Radiation protection instrumentation - Alpha, beta and alpha/beta (beta energy > 60 keV) contamination meters and monitors

GB/T 8170 Rules of rounding off for numerical values and expression and judgement of limiting values

GB/T 12162.3 X and gamma reference radiation for calibrating dosimeter and dose- rate meters and for determining their response as a function of photon energy - Part

3. Calibration of area and personal dosimeter and the measurement of their response as a function

3 Terms and definitions

The following terms and definitions apply to this document.

3.1 Recycling raw materials Steel products or steel scraps that have lost their original value or have not lost their value but have been discarded or abandoned.

3.2 Recycling iron-steel materials Raw materials of recycling materials that can be used directly into the furnace as ferrous resources after classification and processing.

3.3 Radioactive materials Radioactive materials or radioactive sources contained in recycling iron-steel materials.

3.4 Explosive materials Weapons, ammunition, flammable and explosive materials, explosives and other items carried by recycling iron-steel materials.

3.5 Carried-waste Non-metallic substances mixed into recycling iron-steel materials during production, collection, bundling, transportation, including wood waste, waste paper, waste plastic, waste rubber, waste glass, stones, but excluding bundling materials and other substances used during transportation.

3.6 Non-ferrous metal substances Non-ferrous metal substances, such as copper, aluminum, ferroalloys, which are inevitably contained in the processing of recycling iron-steel materials.

3.7 Physical quantities of recycling iron-steel materials The ratio -- of the physical quantity of metal after removing carried-waste and non- ferrous metal substances per unit mass of the sample TO the mass of the original sample.

3.8 Bulk density The mass of recycling iron-steel materials per cubic meter.

4 Classification

4.1 Categories and codes Recycling iron-steel materials are divided into 7 categories according to appearance or chemical composition through different processing methods. They are heavy recycling iron-steel materials, medium recycling iron-steel materials, light recycling iron-steel materials, shredded recycling iron-steel materials, bundled recycling iron-steel materials, recycled alloy steel raw materials, recycled cast iron raw materials. The categories, codes, designations of recycling iron-steel materials are shown in Table 1; typical photos are shown in Appendix A.

4.2 Classification requirements The classification requirements for recycling iron-steel materials are shown in Table 2, and the characteristic properties are shown in Appendix B.

4.3 Processing method The processing flow diagram of different types of recycling iron-steel materials is shown in Figures 1 ~ 7.

5 Technical requirements

5.1 Radioactive pollutants The control of radioactive pollutants shall meet the following requirements.

5.2 Explosives Explosives shall not be mixed in recycling iron-steel materials.

5.3 Hazardous wastes The following hazardous wastes shall be restricted in recycling iron-steel materials.

- a) Hazardous wastes listed in the National Hazardous Waste List;
- b) Other hazardous wastes not listed in the National Hazardous Waste List that have one or more hazardous characteristics such as corrosiveness, toxicity, flammability, reactivity, etc.

5.4 Carried-waste The inclusion requirements of recycling iron-steel materials shall comply with the provisions of Table 3.

5.5 Physical quantity of steel Recycling iron-steel materials shall ensure high-quality metal properties; the physical quantity of recycling iron-steel materials shall comply with the provisions of Table 4.

6 Inspection method

6.1 Radioactive pollutants It shall be inspected in accordance with the provisions of SN/T 0570 or Appendix C.

6.2 Explosive materials Visual sensory inspection.

6.3 Hazardous wastes Visual sensory inspection. When it is uncertain whether it meets the