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

GB/T 10322.7-2016

**Iron ores and direct reduced iron -- Determination of size
distribution by sieving
(English Translation)**

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Table of Contents

Foreword...	3
1 Scope...	9
2 Normative references...	9
3 Terms and definitions...	10
4 Principles and planning...	10
5 Apparatus...	17
6 Samples...	20
7 Procedures...	21
8 Verification...	30
9 Results...	30
10 Test report and working log...	33
11 Precision...	33

Foreword

GB/T 10322 "Iron ores" is divided into 8 parts.

- Part 1.Iron ores - Sampling and sample preparation procedures;
- Part 2.Iron ores - Experimental methods for evaluation of quality variation;
- Part 3.Iron ores - Experimental methods for checking the precision of sampling;
- Part 4.Iron ores - Experimental methods for checking the bias of sampling;
- Part 5.Iron ores - Determination of the moisture content of a lot;
- Part 6.Iron ore - Determination of decrepitation index;
- Part 7.Iron ores and direct reduced iron - Determination of size distribution by sieving;
- Part 8.Iron ores - Single-point determination of specific surface area - Nitrogen adsorption method.

This Part is Part 7 of GB/T 10322.

This Part is drafted in accordance with the rules given in GB/T 1.1-2009.

This Part replaces GB/T 10322.7-2004 "Iron ore - Determination of size distribution by sieving". Compared with GB/T 10322.7-2004, in addition to editorial changes, the main technical changes of this Part are as follows.

- Add direct reduced iron to the scope of application; so change the standard name to "Iron ores and direct reduced iron - Determination of size distribution by sieving".
- In Clause 1 Scope, change the previous "This Standard specifies the methods to be employed for determination of size distributions by sieving of iron ore, utilizing sieves having aperture sizes of 36 μm or larger. The size distribution is expressed in terms of mass and percentage mass, passed or retained on selected sieves. The purpose of this Standard is to provide a basis for any testing of iron ore involving size determination for use by contracting parties in the sale and purchase of these materials" TO "This Part of GB/T 10322 specifies the methods to be employed for determination of size distributions of iron ore and direct reduced iron. This Part applies to the determination of size distributions of iron ore and direct reduced iron, utilizing sieves having aperture sizes of 36 μm or larger".
- Change the previous Clause 4?"Principles and scheme" to "Principles and planning".
- Supplement the ground state requirements for test samples that "The determination of size distribution of iron ores and direct reduced iron (DRI) may be carried out on a 'dry' or 'natural' (or 'as-received') basis" to the 4.1 "General".
- Simplify the content of 4.3.1 Effect of moisture content; change to "When it is difficult to conduct sample division due to sample being adhesive or excessively wet, the sample shall be dried to constant mass in accordance with 7.1".
- In 4.3.2, change "For brittle iron ore during particle size analysis, the

deviation check between mechanical sieving and hand sieving shall be carried out according to the procedure given in GB/T 10322.4-2000 (see 5.2)" TO "There are differences in degradation of ores. Certain iron ores, particularly lump ore, and DRI may be subject to significant degradation during the sampling and size analysis sequences. Furthermore, different sampling and size analysis processes can cause degradation of ores and DRI to different extents. Consequently this may lead to significant variation in results for the same lot. It is therefore essential that any degradation should be minimized through the correct design of manual sampling, mechanical sampling and size analysis systems. Sampling systems should be designed in accordance with the guidelines set out in ISO 3082 and ISO 10835".

- In subclause 4.3.3, change "For iron ores with pronounced magnetic properties, demagnetization of the size sample shall be carried out" TO "For iron ores with pronounced magnetic properties and DRI that has been handled by magnets, it is desirable to ensure that the size sample be demagnetized or that the sieves are non-magnetic".

- In subclause 4.4, change "Sampling methods for iron ore (GB/T 10322.1) will generally provide number of samples in excess of the sieving requirements" TO "Iron ore and DRI are prepared according to ISO 3082 and ISO 10835 for the number of samples required for sieving, respectively".

- Change the previous 4.5 "Choice of dry and wet sieving" to "Choice of sieving method".

- Change the content in subclause 4.5.1 to "Two different sieving methods are available to perform particle size analysis (see Annex I). a) dry sieving, i.e. sieving without the application of water; b) wet sieving, i.e. sieving with a sufficient application of water to ensure the passage of undersize particles through the sieve apertures. A table summarizing the sample preparation

and sieving procedure is given in Annex B".

- In subclause 4.5.2, change "The choice of sieving method for each part of a size determination shall be made on the basis of attaining the defined precision of testing (see 11.1). Details on the procedure shall be recorded in the working log" TO "The results of these methods may not be the same.

No specific preference is given in this Part for either method when sieving iron ore samples. For DRI, dry sieving is recommended".

- In subclause 4.5.3, change "If a combination of any of the sieving methods is employed for different parts of the same overall size distribution, the changeover from dry to wet sieving shall be clearly indicated on the report sheet (see Clause 10)" TO "The choice of sieving method (see 4.5.5) for each part of a size determination shall be made on the basis of attaining the defined precision of testing (see 11.1). Details on the procedure shall be recorded in the working log".

- Change the content of 4.7.1 "General" to "The loading of a sieve or nest of sieves or continuous sieving machine shall be limited as prescribed in 4.7.2 and 4.7.3 and requires previous information about the size distribution of the sample to be sieved".

- The previous 4.7.2 corresponds to 4.7.2.1. And change "The maximum mass retained shall not exceed the values tabulated in Annex A or as determined in 4.7.2.1 or 4.7.2.2" TO "The maximum mass retained shall not exceed the values tabulated in Annex C or as determined in 4.7.2.2 or 4.7.2.3".

- Change the previous "4.7.2.1 Apertures $\geq 500 \mu\text{m}$ " TO "4.7.2.2 Apertures $\geq$

4 mm"; supplement the bulk density of the sample and measure it according

to ISO 3852.

- Change the previous "4.7.2.2 Apertures $< 500 \mu\text{m}$ " TO "4.7.2.3 Apertures $<$