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Iron ore fines - Determination of moisture capacity

铁矿粉 湿容量的测定方法

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Foreword

This document is in accordance with the provisions of GB/T 1:1-2020 "Guidelines for Standardization Work Part 1: Structure and Drafting Rules for Standardization Documents" drafting: Please note that some contents of this document may refer to patents: The issuing agency of this document assumes no responsibility for identifying patents: This document is proposed by China Iron and Steel Industry Association: This document is under the jurisdiction of the National Iron Ore and Direct Reduced Iron Standardization Technical Committee (SAC/TC317): This document is drafted by: Chongqing University, Chongqing Institute of Science and Technology, Laiwu Branch of Shandong Iron and Steel Co., Ltd., Baoshan Iron and Steel Co., Ltd. Company, CCID Information Technology (Chongqing) Co., Ltd., Chongqing Iron and Steel Co., Ltd., Chengdu Advanced Metal Materials Industry Technology Research Institute Co., Ltd., Shougang Jingtang Iron and Steel United Co., Ltd., Pangang Group Panzhihua Iron and Steel Research Institute Co., Ltd., Kunming Industrial Occupational Technology College, Handan Iron and Steel Group Co., Ltd., Metallurgical Industry Information Standard Research Institute: The main drafters of this document: Lu Xuewei, Huang Qingyun, You Yang, Xu Jian, Li Gang, Liang Dong, Zhou Maojun, Xie Hao, Wang Gang, Wang Kai, Pan Cheng, Yang Mingrui, Hu Peng, Wu Wangping, Zhao Wei, Zhang Xiaolei, Lin Anchuan, Hou Jian, Huang Xiaobo, Wu Jianlong, Sun Xiaodong, Xu Can, Chen Zibin, Zhu Rong, Yao Qianguang, Xiang Junyi, He Wenchao, Chen Meijin: Method for determination of wet capacity of iron ore powder Caution

--- Personnel using this document should have practical experience in formal laboratory work: This document does not address all possible safety issues question: It is the user's responsibility to take appropriate safety and health measures and ensure compliance with the conditions stipulated in the relevant national laws and regulations:

1 Scope

China's national method for determining the moisture capacity of iron ore fines. The property matters for one reason above all: cargo liquefaction. A bulk cargo of fine ore that contains more moisture than it can hold in its pore structure behaves as a solid while it is

loaded and can turn to a slurry under the vibration and rolling of a ship at sea, at which point it shifts to one side and the vessel capsizes. Several bulk carriers have been lost this way with all hands. The international regulations therefore require that such cargoes be shipped below a transportable moisture limit, and determining that limit requires knowing how much water the material can hold before it becomes unstable. That is what the moisture capacity measurement establishes, and China's position as the destination for most of the world's seaborne iron ore is why the method is a national standard here.

This document describes a method for the determination of the wet capacity of iron ore fines: This document applies to the determination of the wet capacity of iron ore concentrates and iron ore powders with a particle size greater than 10mm and a mass ratio of no more than 10%:

2 Normative references

The contents of the following documents constitute the essential provisions of this document through normative references in the text: Among them, dated references For documents, only the version corresponding to the date is applicable to this document; for undated reference documents, the latest version (including all amendments) is applicable to this document:

GB/T 1914-2017 Chemical Analysis Filter Paper GB/T 6003:

1 Test sieve technical requirements and inspection Part 1: Metal wire mesh test sieve

GB/T 6005 Basic dimensions of test sieve wire mesh, perforated plate and electroformed sheet sieve GB/T 6730:

1 Preparation of pre-dried samples for iron ore analysis GB/T 10322:

1 Iron ore sampling and sample preparation methods GB/T 10322:

3 Terms and Definitions

The following terms and definitions defined in GB/T 20565 apply to this document: 3:1 wet capacity moisture capacity The mass percentage of the maximum water content (physical water) that minerals can maintain in the state of natural accumulation to the mineral dry material:

Note: Expressed in percentage (%): 3:

2 The maximum water content that a mineral can hold in its natural accumulation state:

Note: The unit is grams (g): 3:

3 Water absorption rate water absorption rate The mass of water in minerals that enters the natural accumulation state under capillary force per unit time:

Note: The unit is grams per second (g/s): 3:

4 The mass transfer distance of water per unit time under the action of capillary force in the particle bed:

7 Sieve determination of particle size distribution of iron ore

GB/T 20565 Terminology of iron ore and direct reduced iron

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