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

GB/T 31934-2015

**Measuring and calculation method for the heat storage capacity
of high radiative coatings**

高辐射覆层蓄热量的测定与计算方法

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Quarantine;
Standardization Administration of the PRC**

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Foreword

This standard was drafted in accordance with GB/T 1.1-2009 given rules. The standard proposed by China Iron and Steel Association. This standard by the National Steel Standardization Technical Committee (SAC/TC183) centralized. This standard was drafted. Shandong Huimin Technology Development Co., Ltd., Metallurgical Industry Information Standards Institute, Shougang, Angang has Limited. The main drafters of this standard. Zhou Huimin, Zhangshao Jiang, Wang Jiang, Chenguan Jun, Chou Jinhui, Xu Dayong Liu Yi Zhou, Liang, Liu Changfu, Wang Lianjie, Liu Changpeng. Determination and calculation of high radiation coating of heat storage

1 Scope

China's national method for measuring and calculating the heat storage capacity of high radiative coatings. It specifies the terms and definitions, the test method, the materials, the equipment, the preparation of samples, the determination and calculation of the heat storage capacity, the permissible difference and the test report, and it applies to fired refractory regenerator media of all kinds carrying a high radiative coating. A regenerator is the heat recovery device of an industrial furnace: a mass of refractory through which hot exhaust gas and cold combustion air are passed alternately, so that heat taken from the exhaust in one half of the cycle is given back to the air in the next. Its effectiveness depends on how much heat the medium can absorb and release in a cycle, and a high radiative coating is applied to the medium to increase the rate at which it exchanges heat by raising the emissivity of its surface. The claim made for such a coating is that a furnace fitted with it recovers more heat and burns less fuel, and that claim is worth a great deal because fuel is the largest operating cost of a reheating or heat treatment furnace. This standard is what allows it to be tested. The method is comparative and deliberately simple: two regenerator samples of the same material, shape and size, from the same batch, one coated and one not, are heated under identical conditions, and the heat each has stored is measured in a calorimeter and calculated. The difference is what the coating is worth, measured rather than asserted. Issued on 11 September 2015 and in force since 1 June 2016.

This standard specifies the terms and definitions of determination and calculation method

of high radiation coating of heat storage, test methods, materials, equipment, sample Preparation, determination and calculation of heat storage, allowing the poor and the measurement report. This standard applies to all kinds of high radiation firing refractory matrix coating regenerator.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version suitable for use herein Member. For undated references, the latest edition (including any amendments) applies to this document.

GB/T 7321 sample preparation method shaped refractory products

GB/T 8170 repair value expressed about the rules and limit values \u200b\u200band judgment

3 Terms and Definitions

The following terms and definitions apply to this document.

3.1 High radiation coating highradiativecoating Regenerator in high emissivity surface layer of the coating material to the substrate emissivity.

3.2 High radiation coating regenerator regeneratorwithhighradiativecoating Coated high radiation coating can improve the regenerator heat exchange rates.

3.3 Heat storage heatstoragecapacity At a predetermined time and temperature conditions set by the regenerator heat absorbed in joules (J).

3.4 Pretreatment liquid pretreatmentsolution Corresponding to the high radiation coating material in the high temperature binder and water in certain proportion of the solution. Test Method

4 The same batch of coated high radiation coating and high radiation coating uncoated two of the same material, the same shape, the same size regenerator sample Heating under the same conditions, reuse calorimeter measurement and calculation of heat accumulation two samples.

Regenerator, high radiation coating material and the pretreatment liquid.