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**Determination of carbon dioxide content of steel slag during
carbonation fixation**

钢渣碳酸化固定二氧化碳含量的测定方法

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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.

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This document was proposed by the China Iron and Steel Association.

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Carbonation of steel slag to fix carbon dioxide Content determination method

Warning---People who use this document should have formal laboratory work experience.

This document does not address all possible safety issues.

The user is responsible for taking appropriate safety and health measures and ensuring that the conditions stipulated by relevant national laws and regulations are met.

1 Scope

This document specifies the method for determining the content of carbonation-fixed carbon dioxide in steel slag by infrared absorption method.

This document is applicable to the determination of fixed carbon dioxide content in converter slag and electric furnace slag by carbonation, with a determination range of 0.2% to 30.0%.

2 Normative references

GB/T 2007.2

GB/T 6379.1

GB/T 6379.2

GB/T 6682

GB/T 8170

3 Terms and definitions

The terms and definitions defined in YB/T 804 and the following apply to this document.

3.1

The mineral components in the steel slag react with carbon dioxide to form carbonates, thus achieving the process of fixing carbon dioxide.

4 Principle

The sample is heated and burned in the oxygen flow of the high-frequency induction furnace, and the generated carbon dioxide is carried by the oxygen to the measuring chamber of the infrared analyzer.

Carbon dioxide absorbs infrared energy of a certain wavelength, and its absorption energy is proportional to its concentration. The mass of total carbon can be measured based on the change in the detector's absorption energy.

The sample was decomposed by hydrochloric acid, dissolved by sodium fluoride (hydrofluoric acid), and the residue was acid-washed, washed with water, and dried on acid-washed asbestos.

Determine the mass fraction of free carbon in the sample. The difference between the mass fraction of total carbon and free carbon is the mass fraction of fixed carbon, which is then calculated. Obtain the mass fraction of carbon dioxide fixed by the sample.