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# YB

FERROUS METALLURGY INDUSTRY STANDARD

OF THE PEOPLE'S REPUBLIC OF CHINA

ICS 29.050

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## YB/T 4090-2015

Replacing YB/T 4090-2000

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### Ultra high power graphite electrode

超高功率石墨电极

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# Ultra high power graphite electrode

## 1 Scope

This standard specifies the shape, dimensions and tolerances, technical requirements, test methods, inspection rules, packaging, marking, storage, transportation and quality certificates of ultra high-power graphite electrodes.

This standard is applicable to ultra high-power graphite electrodes made of needle coke and coal tar pitch as main raw materials, formed by molding, burning, impregnation, graphitization and mechanical processing, and used as the conductive materials for electric furnace.

## 2 Normative references

The following documents are essential to the application of this document. For the dated documents, only the versions with the dates indicated are applicable to this document; for the undated documents, only the latest version (including all the amendments) are applicable to this standard.

GB/T 1427 Sampling method for carbon material

GB/T 1429 Carbon materials - Determination of the ash content

GB/T 3074.1 Method for the determination of the flexure strength of graphite electrodes

GB/T 3074.2 Method for the determination of the elastic modulus of graphite electrodes

GB/T 3074.4 Method for the determination of the coefficient of thermal expansion of graphite electrodes

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

GB/T 8719 General rule for packing, marking, storage, transport and quality certificates of carbonaceous material and products

GB/T 24525 Carbon material resistivity determination method

GB/T 24528 Carbon materials - Determination method of the bulk density

provisions of GB/T 24528.

**5.5** The thermal expansion factor is determined in accordance with the provisions of GB/T 3074.4.

**5.6** Determination of ash content is carried out in accordance with the provisions of GB/T 1429.

**5.7** The end surface clearance at the electrode joint is measured using a feeler gauge.

## **6 Inspection rules**

**6.1** The quality inspection of the electrode shall be carried out by the supplier's quality supervision and inspection department; the buyer may make acceptance in accordance with the provisions of this standard.

**6.2** Sampling method shall be carried out in accordance with GB/T 1427.

**6.3** Batch of thermal expansion coefficient (CTE) and quantity to be sampled per batch:

**6.3.1** Electrodes and joints of the same type and specifications shall be measured at least once a month.

**6.3.2** Not less than 2 samples are determined every time.

**6.4** The numerical rounding off is carried out in accordance with the provisions of GB/T 8170.

## **7 Packaging, marking, storage, transport and quality**

### **certificates**

**7.1** The finished electrode is marked with a safety line on the surface of the electrode corresponding to the bottom of the joint.

**7.2** The packaging, marking, storage, transport and quality certificates of electrodes and joints shall be in accordance with GB/T 8719.

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