

ICS 77.150.30

CCS H 62



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

GB/T 30016-2013

Bronze alloy plate and strip for overhead contact lines

接触网用青铜板带

Issued on: November 27, 2013

Implemented on: August 1, 2014

**Issued by: General Administration of Quality Supervision, Inspection and
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. This standard is carried out according to the special requirements of the development of high-speed rail copper belt. The reference standard EN1652.1998 "Copper and Copper Alloys General-purpose plate, sheet, strip and round timber "in CuNi2Si (R450 state) sheet and strip technical requirements. This standard by the national non-ferrous metals Standardization Technical Committee (SAC/TC243) centralized. This standard is drafted by: Chinalco Luoyang Copper Co., Ltd., China Railway Electrification Bureau Group Co., Ltd. Baoji equipment. This standard was drafted. Zhao million to spend, Zhang Xiangyun, Sun drops, Zhong Qi, Han Weiguang, Ding Shunde, Zhu Yingli, Cao Xiulan. Catenary with bronze plates

1 Scope

China's national standard for the bronze alloy plate and strip used in overhead contact line fittings. It specifies the requirements, the test methods, the inspection rules, the marking, packaging, transport and storage, the quality certificate and the contents of the contract or purchase order, and it applies to the bronze alloy plate and strip used for the fittings of high speed electrified railway catenary. It is the companion to the bar standard, covering the same nickel silicon bronze in flat product, and it was written with reference to the technical requirements for CuNi2Si plate and strip in the R450 condition in EN 1652. The two product forms serve different fittings. Bar is turned and machined into the solid components - the bolts, the pins, the clamp bodies and the connectors. Plate and strip is pressed, formed and punched into the flat ones: the brackets, the straps, the clips, the shims and the contact pieces. A fitting made from strip is formed rather than cut, which brings a requirement the bar standard does not have. The material must be strong in service and formable during manufacture, and for a precipitation hardened alloy those are opposite states of the same metal: it is formed in the softer condition and hardened afterwards, or it is supplied hardened and formed within a limited range of bend radii. The condition in which the strip is supplied is therefore central to the specification, which is why the reference to the R450 condition in the European standard appears in the foreword. The requirements cover the

composition, the temper and condition, the mechanical properties, the electrical conductivity, the bend behaviour, the dimensions, the flatness and the surface quality. Issued on 27 November 2013 and in force since 1 August 2014.

This standard specifies the high-speed electrified railway catenary parts bronze alloy strip material requirements, test methods, inspection rules and signs, Packaging, transportation, storage and quality certificate and contract (or purchase order) content. This standard applies to high-speed electrified railway catenary parts bronze alloy plate and strip.

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 228.1-2010 metal material tensile test - Part 1. room temperature test methods (ISO 6892-1.2009, MOD)

GB/T 232 metallic materials - Bend test

GB/T 351 metal material resistivity measurement method Test Method.

GB/T 4340.1 metallic materials - Vickers hardness test - Part 1 (ISO 6507-1.2005, MOD)

GB/T 5121 (all parts) of copper and copper alloys -

GB/T 8888 heavy non-ferrous metal processing products, packaging, labeling, transportation and storage

GB/T 26303.3 copper and copper alloy processing material Dimensions detection methods - Part 3. plate and strip YS/T 478 copper and copper alloy conductivity eddy current testing method YS/T 482 copper and copper alloy analysis photoemission spectroscopy

3.1 Categories

3.1.1 grade specifications state Plate and strip grades, status, and shall conform to the specifications in Table 1. Table 1 grades, status and specifications Trademark product Types of status Specifications/mm Thickness Width Length QSi0.6-

2.1 Sheet Precipitation hardening cold solution (TH04) 1.0 ~ 3.0 ~ 3000 300 ~ 600 1000

Strip Precipitation hardening cold solution (TH04) 1.0 ~ 3.0 30 ~ 600 -

Note 1. The agreement between, and also can supply other specifications of sheet strip.

2.1 equivalent EN1652 in CuNi2Si grades.