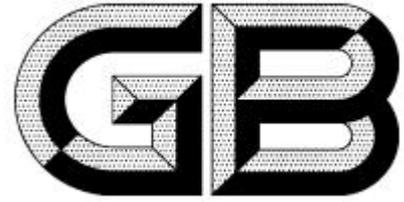


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# National Standard of the People's Republic of China

GB/T 8891-2025

Replaces GB/T 8891-2013

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## Copper and copper alloy tube for heat radiator

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# Foreword

This document is drafted in accordance with the provisions of GB/T 1.1-2020 Directives for Standardization—Part 1: Structure and Drafting Rules of Standard Documents.

This document replaces GB/T 8891-2013 Copper and Copper Alloy Heat Dissipation Tubes. Compared with GB/T 8891-2013, the main technical changes, in addition to structural adjustments and editorial revisions, are as follows:

- a) Revised the Classification and Marking of products (see Chapter 4, corresponding to Clause 3.1 of the 2013 edition);
- b) Added the grade "H96" (see Table 1); revised the temper of grade "T2" and the specification of grade "TU0" (see Table 1, corresponding to Table 1 of the 2013 edition);
- c) Added technical requirements for dimensions and permissible tolerances of trapezoidal tubes (see Table 5);
- d) Added technical requirements for fillet radii of rectangular and trapezoidal tubes (see Clause 5.2.5);
- e) Added technical requirements and test methods for the hardness test (see Table 12 and Clause 6.3.2);
- f) Revised the technical requirements and test methods for the air pressure test (see Clauses 5.4.1 and 6.4.1, corresponding to Clauses 3.5 and 4.4 of the 2013 edition);
- g) Revised the chemical composition analysis method (see Clause 6.1, corresponding to Clause 4.1 of the 2013 edition);
- h) Revised the room-temperature tensile test method for tubes (see Clause 6.3.1, corresponding to Clause 4.3 of the 2013 edition);
- i) Added technical requirements for sampling (see Clause 7.4).

Attention is drawn to the fact that some contents of this document may involve patents. The issuing authority of this document shall not be responsible for identifying any such patents.

This document is proposed by the China Nonferrous Metals Industry Association.

This document is under the jurisdiction of the National Technical Committee of Nonferrous Metals Standardization (SAC/TC 243).

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Principal drafters: Chen Yonggang; Li Feng; Hua Jie; Liu Bin; Wei Lianyun; Liu Jinlong; Cao Li; Song Xixi; Zhang Wenlong; Zhang Xuhui; Pan Junyi; Zhang Peng; Gu Yudong; Zhang Lu; Wang Shaofeng; Zhang Zhiyang; Han Qiushui; Li Baodong; Zhao Baomin; Shen Fanghong; Tang Xiaolin; Miao Zhiqiang; Huang Jiaying; Guo Liqun.

The release history of this document and the documents it replaces is as follows:

—— First issued as GB/T 8891-1988 Copper and Copper Alloy Flat Heat Dissipation Tubes in 1988, and first revised in 2000;

—— Second revised as GB/T 8891-2013 Copper and Copper Alloy Heat Dissipation Tubes in 2013;

—— This is the third revision.

# Copper and copper alloy tube for heat radiator

## 1 Scope

This document specifies the classification and marking, technical requirements, test methods, inspection rules, marking, packaging, transportation, storage, accompanying documents and contents of purchase orders for copper and copper alloy heat dissipation tubes.

This document is applicable to copper and copper alloy heat dissipation tubes (hereinafter referred to as tubes) used for radiators in power machinery such as tanks, automobiles, locomotives and tractors as well as in the aerospace industry.

## 2 Normative References

The contents of the following documents are incorporated as indispensable provisions of this document through normative reference in the text. For dated reference documents, only the edition corresponding to that date is applicable to this document; for undated reference documents, the latest edition (including all amendments) shall apply to this document.

GB/T 2828.1 Sampling Procedures for Inspection by Attributes—Part 1: Sampling Plans for Lot-by-Lot Inspection Indexed by Acceptance Quality Limit (AQL)

GB/T 4340.1 Vickers Hardness Test for Metallic Materials—Part 1: Test Method

GB/T 5121 (All Parts) Methods for Chemical Analysis of Copper and Copper Alloys

GB/T 5231 Wrought Copper and Copper Alloys—Designations and Chemical Compositions

GB/T 5248 Eddy Current Testing Method for Seamless Copper and Copper Alloy Tubes

GB/T 8170 Rules for Rounding Off of Numerical Values and Expression and Judgment of Limiting Values

GB/T 8888 Packaging, Marking, Transportation, Storage and Quality Certificate of Non-Ferrous Metals Processing Products

GB/T 10567.2 Test Method for Residual Stress of Copper and Copper Alloy Processed Products—Ammonia Fumigation Test Method

GB/T 26303.1 Dimensional Inspection Methods for Copper and Copper Alloy Processed Products—Part 1: Tubes

GB/T 34505 Room Temperature Tensile Test Method for Copper and Copper Alloy Materials

YS/T 482 Spark Discharge Atomic Emission Spectrometry Method for Analysis of Copper and Copper Alloys

YS/T 483 X-Ray Fluorescence Spectrometry Method (Wavelength Dispersive Type) for Analysis of Copper and Copper Alloys

YS/T 668 Sampling Methods for Physical and Chemical Testing of Copper and Copper Alloys

### 3 Terms and Definitions

There are no terms and definitions to define in this document.

## 4 Classification and Marking

### 4.1 Product Classification

The grade, code, temper and specification of the tubes shall conform to the provisions of Table 1. The schematic diagram of the tube cross-section is shown in Figure 1. Tubes of other grades or specifications may be supplied upon negotiation between the supplier and the purchaser.

Table 1 Grades, Codes, Tempers and Specifications of Tubes

Grade <sup>a</sup>	Code	Temper	Specification mm				Length
			Round Tube	Flat Tube	Rectangular Tube	Trapezoidal Tube	
			Outer Diameter (D) Wall Thickness (S) $D \times S$	Width(A) Height(B) Wall Thickness(S) $A \times B \times S$	Long Side(A) Short Side(B) Wall Thickness(S) $A \times B \times S$	Length of Lower Base(A) Length of Upper Base(C) Height(h) Wall Thickness(S) $A \times C \times h \times S$	
TU0	T10130	Drawn (Hard) (H80) Light Drawing, Light Cold Working (H55)	$(4.00 \sim 25.00) \times$ $(0.15 \sim 2.00)$	—	$(4.00 \sim 25.00)$ $\times (2.00 \sim 12.00)$ $\times (0.20 \sim 0.80)$	—	250~ 4 000
T2	T11050	Drawn (Hard) (H80) Light Drawing, Light Cold Working (H55)	$(10.00 \sim 50.00)$ $\times (0.20 \sim 0.80)$	$(15.00 \sim 25.00)$ $\times (1.90 \sim 6.00)$ $\times (0.20 \sim 0.80)$	$(15.00 \sim 25.00)$ $\times (5.00 \sim 12.00)$ $\times (0.20 \sim 0.80)$	—	
H96	T20800	Drawn (Hard) (H80)	2.00×0.11、 4.00×0.11、 4.00×0.15、 4.00×0.20、 5.00×0.15、 5.00×0.20	—	3.50×1.80×0.11、 3.50×1.80×0.20、 4.00×2.00×0.11、 4.00×2.00×0.20	4.90×2.89× 2.50×0.20、 6.04×3.46× 3.00×0.20、 7.20×4.04× 3.50×0.20	
H95	C21000	Drawn (Hard) (H80)	$(10.00 \sim 50.00)$ $\times (0.20 \sim 0.80)$	$(15.00 \sim 25.00)$ $\times (1.90 \sim 6.00)$ $\times (0.20 \sim 0.80)$	$(15.00 \sim 25.00)$ $\times (5.00 \sim 12.00)$ $\times (0.20 \sim 0.80)$	—	
H90	C22000	Light Drawing, Light Cold Working (H55)					
H85	C23000						
H80	C24000						
H68	T26300						
HAs68-0.04	T26330						
H65	C27000						
H63	C27300	Soft Annealing (O60)					
HSn70-1	T45000						

<sup>a</sup> Products of Grade H96 are aviation heat dissipation tubes, while products of other grades are non-aviation heat dissipation tubes.