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(JCBA/JSA)

**Copper and copper alloy welded pipes
and tubes**

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Foreword

This Japanese Industrial Standard has been revised by the Minister of Economy, Trade and Industry through deliberations at the Japanese Industrial Standards Committee as the result of proposal for revision of Japanese Industrial Standard submitted by Japan Copper and Brass Association (JCBA)/Japanese Standards Association (JSA) with a draft being attached, based on the provision of Article 12, paragraph (1) of the Industrial Standardization Act applied mutatis mutandis pursuant to the provision of Article 16 of the said Act. This edition replaces the previous edition (**JIS H 3320 : 2006**), which has been technically revised.

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Copper and copper alloy welded pipes and tubes

1 Scope

This Japanese Industrial Standard specifies the requirements for copper and copper alloy welded pipes and tubes (hereafter referred to as tubes), made from strip of C 1220, C 2600, C 2680, C 7060 and C 7150 specified in **JIS H 3100** welded by means of high frequency induction heating.

2 Normative references

Part or all of the provisions of the following standards, through reference in this text, constitute provisions of this Standard. The most recent editions of the standards (including amendments) indicated below shall be applied.

- JIS H 0321 *General rules for inspection of non-ferrous metal materials*
- JIS H 0500 *Glossary of terms used in wrought copper and copper alloys*
- JIS H 0502 *Method of eddy current testing for copper and copper alloy pipes and tubes*
- JIS H 1051 *Copper and copper alloys — Determination of copper content*
- JIS H 1053 *Methods for determination of lead in copper and copper alloys*
- JIS H 1054 *Methods for determination of iron in copper and copper alloys*
- JIS H 1055 *Methods for determination of manganese in copper and copper alloys*
- JIS H 1056 *Methods for determination of nickel in copper and copper alloys*
- JIS H 1058 *Copper and copper alloys — Determination of phosphorus content*
- JIS H 1062 *Methods for determination of zinc in copper and copper alloys*
- JIS H 1292 *Copper alloys — Methods for X-ray fluorescence spectrometric analysis*
- JIS H 3100 *Copper and copper alloy sheets, plates and strips*
- JIS K 0116 *General rules for atomic emission spectrometry*
- JIS K 8085 *Ammonia solution (Reagent)*
- JIS Z 2241 *Metallic materials — Tensile testing — Method of test at room temperature*
- JIS Z 2244-1 *Vickers hardness test — Part 1 : Test method*
- JIS Z 2244-2 *Vickers hardness test — Part 2 : Tables of hardness values*

3 Term and definition

For the purpose of this Standard, the following term and definition, and those given in **JIS H 0500** apply.

3.1

bend

depth of the arc against the total length of tube

Note 1 to entry See Figure 1 in 6.3.

4 Names, alloy numbers, classes and grade designations

The names, alloy numbers, classes and grade designations of tubes shall be as given in Table 1. A product designation consists of the grade designation to which the temper grade (see Table 3) is suffixed.

Table 1 Names, alloy numbers, classes and grade designations of tubes

Name	Alloy number	Class	Grade designation	Characteristics and examples of application (informative)
Phosphorus deoxidized copper	C 1220	Common grade	C 1220 TW	Having good flarability, bendability, drawability, weldability, corrosion resistance and heat conductivity.
		Special grade	C 1220 TWS	Free from hydrogen embrittlement if heated at elevated temperature in reducing atmosphere. Applicable to heat exchanger, chemical industry, water/hot-water supply, gas pipe etc.
Brass	C 2600	Common grade	C 2600 TW	Having good flarability, bendability, drawability and suitable for plating. Applicable to heat exchanger, curtain rod, sanitary tube, machinery and other appliance parts, antenna rod etc.
		Special grade	C 2600 TWS	
	C 2680	Common grade	C 2680 TW	
		Special grade	C 2680 TWS	
Cupronickel	C 7060	Common grade	C 7060 TW	Having good corrosion resistance, particularly in sea water. Applicable to services at comparatively high temperatures. Good for uses in musical instrument, architecture, decoration, heat exchanger etc.
		Special grade	C 7060 TWS	
	C 7150	Common grade	C 7150 TW	
		Special grade	C 7150 TWS	

5 Quality

5.1 Appearance

Tubes shall have a workmanlike even finish and be free from defects that are detrimental to practical use. When requested, criteria for defects shall be subject to the agreement between the purchaser and the manufacturer.