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**Seamless nickel-chromium-iron alloy heat  
exchanger tubes**

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## Foreword

This translation has been made based on the original Japanese Industrial Standard 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 The Japan Iron and Steel Federation (JISF) with the draft being attached, based on the provision of Article 12 Clause 1 of the Industrial Standardization Law applicable to the case of revision by the provision of Article 14.

Consequently **JIS G 4904:2008** is replaced with this Standard.

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# Seamless nickel-chromium-iron alloy heat exchanger tubes

## 1 Scope

This Japanese Industrial Standard specifies seamless nickel-chromium-iron alloy tubes (hereafter referred to as tubes) to be used, for example for heat exchangers or condensers in chemical and petroleum industries, and steam generators in nuclear industry, where the tube is designed for exchanging heat between inside and outside of its body. However, this Standard is not applicable to steel tubes for fired heater <sup>1)</sup>.

The supplementary quality requirements and U-bend tubes, which can be specified by the purchaser upon the agreement with the manufacturer, are specified in Annex A and Annex B, respectively.

Note <sup>1)</sup> Steel tubes for fired heaters are specified in **JIS G 3467**.

## 2 Normative references

The following standards contain provisions which, 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 G 0321 *Product analysis and its tolerance for wrought steel*
- JIS G 0404 *Steel and steel products — General technical delivery requirements*
- JIS G 0415 *Steel and steel products — Inspection documents*
- JIS G 0551 *Steels — Micrographic determination of the apparent grain size*
- JIS G 0567 *Method of elevated temperature tensile test for steels and heat-resisting alloys*
- JIS G 0582 *Automated ultrasonic examination of steel pipes and tubes*
- JIS G 0583 *Automated eddy current examination of steel pipes and tubes*
- JIS G 1281 *Methods for chemical analysis of nickel-chromium-iron alloys*
- JIS H 1270 *Nickel and nickel alloys — Sampling and general rules for analytical methods*
- JIS Z 2241 *Metallic materials — Tensile testing — Method of test at room temperature*
- JIS Z 2245 *Rockwell hardness test — Test method*
- JIS Z 8401 *Guide to the rounding of numbers*