

JIS

JAPANESE
INDUSTRIAL
STANDARD

Translated and Published by
Japanese Standards Association

JIS H 4630 : 2012

(JIS/JSA)

**Titanium and titanium alloys — Seamless
pipes**

ICS 77.120.50;77.150.50

Reference number : JIS H 4630 : 2012 (E)

PROTECTED BY COPYRIGHT

9 5

H 4630 : 2012

Date of Establishment: 1964-07-01

Date of Revision: 2012-04-20

Date of Public Notice in Official Gazette: 2012-04-20

Investigated by: Japanese Industrial Standards Committee

Standards Board

Technical Committee on Non-Ferrous Metals

JIS H 4630 : 2012, First English edition published in 2013-02

Translated and published by: Japanese Standards Association

4-1-24, Akasaka, Minato-ku, Tokyo, 107-8440 JAPAN

In the event of any doubts arising as to the contents,
the original JIS is to be the final authority.

© JSA 2013

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the publisher.

Printed in Japan

KA/HN

PROTECTED BY COPYRIGHT

Contents

		Page
1	Scope	1
2	Normative references	1
3	Terms and definitions	1
4	Classification, dimensions, finishing methods, heat treatment and symbols	2
5	Quality	4
5.1	Appearance	4
5.2	Chemical composition	4
5.3	Mechanical properties	5
5.4	Flattening resistance	6
5.5	Airtightness	6
5.6	Pressure resistance	6
5.7	Non-destructive inspection characteristics	6
6	Dimensional tolerances	7
6.1	Tolerances on outside diameter	7
6.2	Tolerances on wall thickness and wall thickness deviation	7
6.3	Tolerances on length	8
7	Tests	8
7.1	Chemical analysis	8
7.2	Tensile test	8
7.3	Flattening test	9
7.4	Airtightness test	9
7.5	Pressure resistance test	10
7.6	Non-destructive inspection characteristics test	10
8	Inspection	10
9	Marking	11
	Annex A (informative) Representative dimensions of seamless pipes	12

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 Titanium Society (JTS)/Japanese Standards Association (JSA) 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 H 4630:2007** is replaced with this Standard.

This **JIS** document is protected by the Copyright Law.

Being in conformance with this Standard may come under the use of the patent rights held by the following:

- Name: Kobe Steel, Ltd.
- Address: Wakinohama-cho 2-10-26, Chuo-ku, Kobe-shi, Hyogo-ken
- Name: Sumitomo Metal Industries, Ltd.
- Address: Harumi 1-8-11, Chuo-ku, Tokyo-to

The relevant holders of the above-mentioned industrial property rights have indicated to the Japanese Industrial Standards Committee an intention of granting license to anyone under the nondiscriminatory and reasonable conditions, except to the other holders of the industrial property rights related to this Standard who will not grant their licenses under the same conditions.

It should be noted that following this Standard does not always refer to granting a free license.

Attention is drawn to the possibility that some parts of this Standard may conflict with patent rights other than mentioned above. The Minister of Economy, Trade and Industry and Japanese Industrial Standards Committee are not responsible for identifying such patent rights.

The “patent rights” as mentioned here include patent right, application for a patent after opening to the public or utility model right.

Titanium and titanium alloys — Seamless pipes

1 Scope

This Japanese Industrial Standard specifies the titanium and titanium alloy seamless pipes having a circular cross-section, which are used for purposes other than for a heat exchanger (hereafter referred to as “pipes”).

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 H 0321 *General rules for inspection of non-ferrous metal materials*
- JIS H 0515 *Eddy current inspection of titanium pipes and tubes*
- JIS H 0516 *Ultrasonic inspection of titanium pipes and tubes*
- JIS H 1610 *Titanium and titanium alloys — Sampling methods*
- JIS H 1612 *Methods for determination of nitrogen in titanium and titanium alloys*
- JIS H 1614 *Methods for determination of iron in titanium and titanium alloys*
- JIS H 1617 *Methods for determination of carbon in titanium and titanium alloys*
- JIS H 1619 *Titanium and titanium alloys — Determination of hydrogen content*
- JIS H 1620 *Methods for determination of oxygen in titanium and titanium alloys*
- JIS H 1621 *Methods for determination of palladium in titanium alloys*
- JIS H 1622 *Titanium alloys — Methods for determination of aluminium*
- JIS H 1624 *Titanium alloys — Method for determination of vanadium*
- JIS H 1630 *Method for atomic emission spectrometric analysis of titanium*
- JIS H 1631 *Titanium alloys — Method for X-ray fluorescence spectrometric analysis*
- JIS Z 2241 *Metallic materials — Tensile testing — Method of test at room temperature*

3 Terms and definitions

For the purposes of this Standard, the following terms and definitions apply.

3.1 low-temperature annealing

heat treatment in which annealing is performed at a temperature lower than that of full annealing in order to remove residual stress with strength retained