



JAPANESE
INDUSTRIAL
STANDARD

Translated and Published by
Japanese Standards Association

JIS B 2316 : 2017

(JPFA/JSA)

Steel socket-welding pipe fittings

ICS 23.040.40

Reference number : **JIS B 2316 : 2017 (E)**

PROTECTED BY COPYRIGHT

 **Documents**
Document Sharing Hub

13 S

Date of Establishment: 1982-10-15

Date of Revision: 2017-09-20

Date of Public Notice in Official Gazette: 2017-09-20

Investigated by: Japanese Industrial Standards Committee
Standards Board for ISO area
Technical Committee on Machine Elements

JIS B 2316:2017, First English edition published in 2017-11

Translated and published by: Japanese Standards Association
Mita MT Building, 3-13-12, Mita, Minato-ku, Tokyo, 108-0073 JAPAN

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

© JSA 2017

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

PROTECTED BY COPYRIGHT

Contents

	Page
Introduction	1
1 Scope	1
2 Normative references	1
3 Terms and definitions	2
4 Classification	2
5 Materials	5
6 Manufacturing method	7
7 Performance	8
7.1 Mechanical properties	8
7.2 Austenitic grain size	8
7.3 Pressure resistance	8
8 Shape and dimensions	9
9 Appearance	9
10 Tests	9
10.1 Mechanical tests	9
10.2 Austenitic grain size test	10
10.3 Pressure resistance test	10
11 Inspection	10
11.1 Types of inspection and inspection items	10
11.2 Chemical analysis	11
11.3 Mechanical properties	11
11.4 Austenitic grain size inspection	11
11.5 Pressure resistance inspection	11
11.6 Shape and dimensions inspection	11
11.7 Appearance inspection	11
11.8 Reinspection	11
12 Designation of products	11
13 Marking	12
14 Report	12
Annex A (normative) Supplementary quality requirements	16
Annex B (informative) ASTM materials comparable to JIS materials	19

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 Japan Pipe Fittings Association (JPFA)/ 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 B 2316:2007** is replaced with this Standard.

However, **JIS B 2316:2007** may be applied in the **JIS** mark certification based on the relevant provisions of Article 19 Clause 1, etc. of the Industrial Standardization Law until September 19, 2018.

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

Attention is drawn to the possibility that some parts of this Standard may conflict with patent rights, applications for a patent after opening to the public or utility model rights. The relevant Minister and the Japanese Industrial Standards Committee are not responsible for identifying any of such patent rights, applications for a patent after opening to the public or utility model rights.

Steel socket-welding pipe fittings

Introduction

This Japanese Industrial Standard was established in 1982 and has gone through five revisions since then, the last one of which was made in 2007. This revision was initiated to meet the users' demand for revising parts of this Standard, as well as to reflect the revised contents of the related Japanese Industrial Standards (JISs).

No corresponding International Standard has been established at this point.

1 Scope

This Standard specifies the steel seamless pipe fittings, to be fitted by socket-welding, mainly to pressure service pipings¹⁾, high pressure service pipings²⁾, high temperature service pipings³⁾, alloy steel pipings⁴⁾, stainless steel pipings⁵⁾ and low temperature service pipings⁶⁾ (hereafter referred to as pipe fittings).

Supplementary quality requirements for pipe fittings are provided in Annex A, a part or all of which can be specified by agreement between the purchaser and the manufacturer.

- Notes
- ¹⁾ Pipings employing carbon steel pipes for pressure service specified in **JIS G 3454**
 - ²⁾ Pipings employing carbon steel pipes for high pressure service specified in **JIS G 3455**
 - ³⁾ Pipings employing carbon steel pipes for high temperature service specified in **JIS G 3456**
 - ⁴⁾ Pipings employing alloy steel pipes specified in **JIS G 3458**
 - ⁵⁾ Pipings employing stainless steel pipes specified in **JIS G 3459**
 - ⁶⁾ Pipings employing steel pipes for low temperature service specified in **JIS G 3460**

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 B 0151 *Iron and steel pipe fittings—Vocabulary*
- JIS B 0601 *Geometrical Product Specifications (GPS)—Surface texture: Profile method—Terms, definitions and surface texture parameters*
- JIS G 0404 *Steel and steel products—General technical delivery requirements*
- JIS G 0415 *Steel and steel products—Inspection documents*
- JIS G 0567 *Method of elevated temperature tensile test for steels and heat-resisting alloys*
- JIS G 3202 *Carbon steel forgings for pressure vessels*

- JIS G 3203 *Alloy steel forgings for pressure vessels for high-temperature service*
- JIS G 3205 *Carbon and alloy steel forgings for pressure vessels for low-temperature service*
- JIS G 3214 *Stainless steel forgings for pressure vessels*
- JIS G 3454 *Carbon steel pipes for pressure service*
- JIS G 3455 *Carbon steel pipes for high pressure service*
- JIS G 3456 *Carbon steel pipes for high temperature service*
- JIS G 3458 *Alloy steel pipes*
- JIS G 3459 *Stainless steel pipes*
- JIS G 3460 *Steel tubes for low temperature service*
- JIS G 4051 *Carbon steels for machine structural use*
- JIS G 4303 *Stainless steel bars*
- JIS Z 2241 *Metallic materials—Tensile testing—Method of test at room temperature*
- JIS Z 2343-1 *Non-destructive testing—Penetrant testing—Part 1: General principles—Method for liquid penetrant testing and classification of the penetrant indication*

3 Terms and definitions

For the purposes of this Standard, the terms and definitions given in **JIS B 0151** apply.

4 Classification

The pipe fittings shall be classified by type and material as follows.

- a) The classifications of pipe fittings by shape and the respective symbols shall be as given in Table 1.

Table 1 Classifications by shape and respective symbols

Classification by shape		Symbol ^{a)}
Classification	Sub-classification	
45° Elbow	Straight	45E(S)
	Reducing	45E(R)
90° Elbow	Straight	90E(S)
	Reducing	90E(R)
Full coupling	Straight	FC(S)
	Reducing	FC(R)
Half coupling	—	HC
Boss	—	B
Cap	—	C
45° Y	Straight	45Y(S)
	Reducing	45Y(R)
T	Straight	T(S)
	Reducing	T(R)
Cross	Straight	CROSS(S)
	Reducing	CROSS(R)
Note ^{a)} The parentheses in the symbols may be omitted. Example: 45E(S) may be 45ES.		

- b) Symbols of classifications by material, and applicable steel pipes shall be as given in Table 2.

The applicable steel pipes refer to the **JIS** steel pipes typically used for connection of the pipe fittings.

Table 2 Symbols of classifications by material and applicable steel pipes

Classification	Symbol of classification by material	Applicable steel pipes	Remarks
Carbon steel	PS370	STPG370 of JIS G 3454 STS370 of JIS G 3455	For pressure service pipings
	PS410	STPG410 of JIS G 3454 STS410 of JIS G 3455	
	PS480	STS480 of JIS G 3455	
	PT370	STPG370 of JIS G 3454 STPT370 of JIS G 3456	For high temperature service pipings
	PT410	STPG410 of JIS G 3454 STPT410 of JIS G 3456	
	PT480	STPT480 of JIS G 3456	
	PL380	STPL380 of JIS G 3460	For low temperature service pipings

Table 2 (concluded)

Classification	Symbol of classification by material	Applicable steel pipes	Remarks
Alloy steel	PA12	STPA12 of JIS G 3458	For high temperature service pipings
	PA22	STPA22 of JIS G 3458	
	PA23	STPA23 of JIS G 3458	
	PA24	STPA24 of JIS G 3458	
	PA25	STPA25 of JIS G 3458	
	PA26	STPA26 of JIS G 3458	
	PL450	STPL450 of JIS G 3460	For low temperature service pipings
	PL690	STPL690 of JIS G 3460	
Stainless steel	SUS304	SUS304TP of JIS G 3459	For corrosion resistant, high temperature and low temperature service pipings
	SUS304H	SUS304HTP of JIS G 3459	
	SUS304L	SUS304LTP of JIS G 3459	
	SUS309S	SUS309STP of JIS G 3459	
	SUS310	SUS310TP of JIS G 3459	
	SUS310S	SUS310STP of JIS G 3459	
	SUS316	SUS316TP of JIS G 3459	
	SUS316H	SUS316HTP of JIS G 3459	
	SUS316L	SUS316LTP of JIS G 3459	
	SUS316Ti	SUS316TiTP of JIS G 3459	
	SUS317	SUS317TP of JIS G 3459	
	SUS317L	SUS317LTP of JIS G 3459	
	SUS321	SUS321TP of JIS G 3459	
	SUS321H	SUS321HTP of JIS G 3459	
	SUS347	SUS347TP of JIS G 3459	
	SUS347H	SUS347HTP of JIS G 3459	
	SUS836L	SUS836LTP of JIS G 3459	
	SUS890L	SUS890LTP of JIS G 3459	
	SUS329J1	SUS329J1TP of JIS G 3459	For corrosion resistant and high temperature service pipings
	SUS329J3L	SUS329J3LTP of JIS G 3459	
	SUS329J4L	SUS329J4LTP of JIS G 3459	
	SUS405	SUS405TP of JIS G 3459	
	SUS430	SUS430TP of JIS G 3459	