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Stainless steel flux cored wires and
rods for arc welding

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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 The Japan Welding Engineering Society (JWES)/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 Z 3323** : 2007), which has been technically revised.

However, **JIS Z 3323** : 2007 may be applied in the **JIS** mark certification based on the relevant provisions of Article 30, paragraph (1), etc. of the Industrial Standardization Act until 19 July 2022.

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Stainless steel flux cored wires and rods for arc welding

Introduction

This Japanese Industrial Standard has been prepared based on **ISO 17633** : 2017, Edition 3, with some modifications of the technical contents. **ISO 17633** is a combined standard of the standard used in Europe and the standard used around the Pacific Rim, either or both of which may be used in different global markets. Therefore, this Standard gives the parts corresponding to the standard used around the Pacific Rim (System B of **ISO 17633**) in the main body, and the parts corresponding to the standard used in Europe (System A of **ISO 17633**) in Annex JA for reference.

The vertical lines on both sides and dotted underlines indicate changes from the corresponding International Standard. A list of modifications with the explanations is given in Annex JB.

1 Scope

This Standard specifies requirements for the following stainless steel flux cored electrodes (hereafter referred to as electrodes) and cored rods for gas tungsten arc welding (hereafter referred to as rods) which generate the deposited metal of chromium not less than 10.5 % (mass fraction) and nickel not more than 37.0 % (mass fraction).

- Flux cored electrodes for gas-shielded arc welding
- Metal cored electrodes for gas-shielded arc welding
- Flux cored electrodes for self-shielded arc welding
- Cored rods for gas tungsten arc welding

NOTE The International Standard corresponding to this Standard and the symbol of degree of correspondence are as follows.

ISO 17633 : 2017 *Welding consumables — Tubular cored electrodes and rods for gas shielded and non-gas shielded metal arc welding of stainless and heat-resisting steels — Classification* (MOD)

In addition, symbols which denote the degree of correspondence in the contents between the relevant International Standard and **JIS** are IDT (identical), MOD (modified), and NEQ (not equivalent) according to **ISO/IEC Guide 21-1**.

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 1201	<i>Iron and steel — General rules for analytical methods</i>
JIS G 3101	<i>Rolled steels for general structure</i>
JIS G 3106	<i>Rolled steels for welded structure</i>
JIS G 4304	<i>Hot-rolled stainless steel plate, sheet and strip</i>
JIS G 4305	<i>Cold-rolled stainless steel plate, sheet and strip</i>
JIS Z 3001-1	<i>Welding and allied processes — Vocabulary — Part 1 : General</i>
JIS Z 3001-2	<i>Welding and allied processes — Vocabulary — Part 2 : Welding processes</i>
JIS Z 3001-7	<i>Welding and allied processes — Vocabulary — Part 7 : Arc welding</i>
JIS Z 3011	<i>Welding positions defined by means of angles of slope and rotation</i>
JIS Z 3111	<i>Methods of tension and impact tests for deposited metal</i>
JIS Z 3181	<i>Method of fillet weld test for welding consumables</i>
JIS Z 3184	<i>Method of preparing deposited metal pad and samples for chemical analysis</i>
JIS Z 3200	<i>Welding consumables — Technical delivery conditions for welding filler materials — Type of product, dimensions, tolerances and markings</i>
JIS Z 3253	<i>Shielding gases for fusion welding and thermal cutting</i>
JIS Z 3423	<i>Procurement guidelines for welding consumables</i>

3 Terms and definitions

For the purpose of this Standard, the following terms and definitions, and those given in **JIS Z 3001-1**, **JIS Z 3001-2** and **JIS Z 3001-7** apply.

3.1

flux cored electrodes

electrode filled with an appropriate amount of flux which generates slag when welding is performed

3.2

metal cored electrodes

electrode filled with flux containing metallic powder as the major ingredient or filled with only metallic powder

3.3

cored rods for gas tungsten arc welding

rod, filled with flux or metallic powder, intended for gas tungsten arc welding

4 Classification

The electrodes and rods shall be classified according to the chemical composition of deposited metal, classification of electrodes and rods, class of shielding gas and welding position which electrodes can apply. The symbol for the classification of electrodes and rods shall be as shown in Figure 1.

The type of arc welding process and class of shielding gas according to the classification of electrodes and rods shall be as given in Table 1.

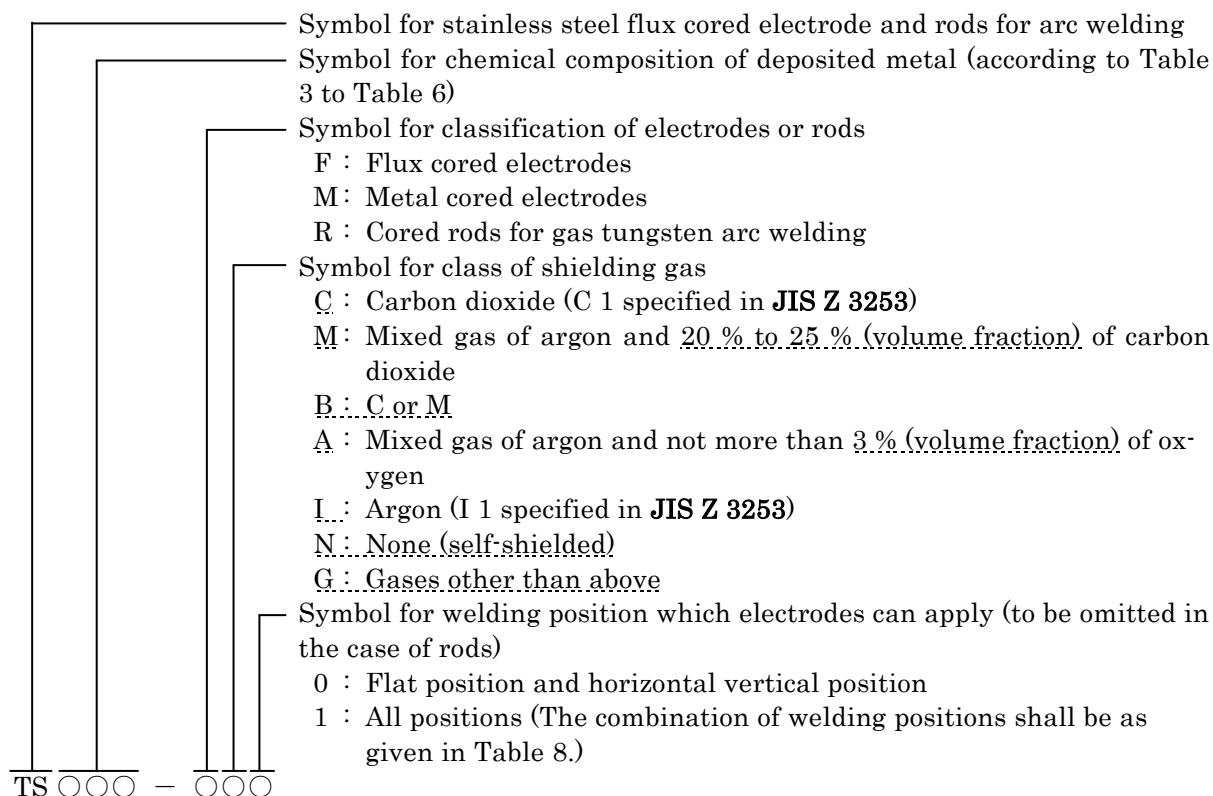


Figure 1 Symbol for classification of electrodes and rods

Table 1 Type of arc welding process and class of shielding gas according to the classification of electrodes and rods

Classification of electrodes and rods	Type of arc welding process	Class of shielding gas
F	Gas-shielded	C, M, B or G
	Self-shielded	N
M	Gas-shielded	A, M, I or G
R	Gas-shielded	I or G

5 Quality

5.1 Dimensions, dimensional tolerances and product conditions

The dimensions, dimensional tolerances and product conditions of electrodes and

rods shall be as follows.

- a) Dimensions and dimensional tolerances shall be in accordance with Clause 4 of **JIS Z 3200**.

Product conditions shall be in accordance with Clause 5 of **JIS Z 3200**.

- b) Examples of typical diameter and mass are given in Table 2.
- c) Items other than a) or b) shall be subjected to the agreement between the interested parties.

Table 2 Examples of typical diameter and mass of electrodes and rods

Shape	Diameter mm	Mass kg
Electrodes	0.8, 0.9, 1.2, 1.4, 1.6, 2.0, 2.4, 3.2	5, 10, 12.5, 20
Rods	2.0, 2.2, 2.4	5

5.2 Chemical composition of deposited metal

The chemical composition of deposited metal, when tested in accordance with the method in 6.3, shall conform to the requirements specified in Table 3 to Table 6. For electrodes and rods having chemical composition different from that of the deposited metal specified in Table 3 to Table 6, the composition system similar to that in Table 3 to Table 6 is acceptable by agreement between the interested parties. The symbol for chemical composition similar to that specified in Table 3 to Table 6 shall be prefixed by the letter “Z”.

NOTE When “Z” is prefixed, even if the symbols for chemical composition are the same, deposited metals with Z and without Z are sometimes not interchangeable as their chemical compositions are not always the same.

Table 3 Chemical composition of deposited metal (flux cored electrodes for gas-shielded arc welding)

Unit: % (mass fraction)

Symbol for chemical composition ^{b)}	Chemical composition ^{a)}											
	C	Si	Mn	P	S	Ni	Cr	Mo	Cu	N	Nb + Ta	Others
307	0.13 max.	1.0 max.	3.30 to 4.75	0.04 max.	0.03 max.	9.0 to 10.5	18.0 to 20.5	0.5 to 1.5	0.75 max.	—	—	—
308	0.08 max.	1.0 max.	0.5 to 2.5	0.04 max.	0.03 max.	9.0 to 11.0	18.0 to 21.0	0.75 max.	0.75 max.	—	—	—

Table 3 (continued)

Unit: % (mass fraction)

Symbol for chemical composition ^{b)}	Chemical composition ^{a)}											
	C	Si	Mn	P	S	Ni	Cr	Mo	Cu	N	Nb + Ta	Others
308L	0.04 max.	1.0 max.	0.5 to 2.5	0.04 max.	0.03 max.	9.0 to 12.0	18.0 to 21.0	0.75 max.	0.75 max.	—	—	—
308H	0.04 to 0.08	1.0 max.	0.5 to 2.5	0.04 max.	0.03 max.	9.0 to 11.0	18.0 to 21.0	0.75 max.	0.75 max.	—	—	—
308N2	0.10 max.	1.0 max.	1.0 to 4.0	0.04 max.	0.03 max.	7.0 to 11.0	20.0 to 25.0	0.5 max.	0.5 max.	0.12 to 0.30	—	—
308Mo	0.08 max.	1.0 max.	0.5 to 2.5	0.04 max.	0.03 max.	9.0 to 11.0	18.0 to 21.0	2.0 to 3.0	0.75 max.	—	—	—
308MoJ	0.08 max.	1.0 max.	0.5 to 2.5	0.04 max.	0.03 max.	8.0 to 11.0	17.5 to 20.5	2.0 to 3.0	0.5 max.	—	—	—
308LMo	0.04 max.	1.0 max.	0.5 to 2.5	0.04 max.	0.03 max.	9.0 to 12.0	18.0 to 21.0	2.0 to 3.0	0.75 max.	—	—	—
309	0.10 max.	1.0 max.	0.5 to 2.5	0.04 max.	0.03 max.	12.0 to 14.0	22.0 to 25.0	0.75 max.	0.75 max.	—	—	—
309L	0.04 max.	1.0 max.	0.5 to 2.5	0.04 max.	0.03 max.	12.0 to 14.0	22.0 to 25.0	0.75 max.	0.75 max.	—	—	—
309H	0.04 to 0.10	1.0 max.	0.5 to 2.5	0.04 max.	0.03 max.	12.0 to 14.0	22.0 to 25.0	0.75 max.	0.75 max.	—	—	—
309J	0.08 max.	1.0 max.	0.5 to 2.5	0.04 max.	0.03 max.	12.0 to 14.0	25.0 to 28.0	0.5 max.	0.5 max.	—	—	—
309Mo	0.12 max.	1.0 max.	0.5 to 2.5	0.04 max.	0.03 max.	12.0 to 16.0	21.0 to 25.0	2.0 to 3.0	0.75 max.	—	—	—
309LMo	0.04 max.	1.0 max.	0.5 to 2.5	0.04 max.	0.03 max.	12.0 to 16.0	21.0 to 25.0	2.0 to 3.0	0.75 max.	—	—	—
309LNb	0.04 max.	1.0 max.	0.5 to 2.5	0.04 max.	0.03 max.	12.0 to 14.0	22.0 to 25.0	0.75 max.	0.75 max.	—	0.70 to 1.00	—
309LNi Mo	0.04 max.	1.0 max.	0.5 to 2.5	0.04 max.	0.03 max.	15.0 to 17.0	20.5 to 23.5	2.5 to 3.5	0.75 max.	—	—	—

Table 3 (continued)

Unit: % (mass fraction)

Symbol for chemical composition ^{b)}	Chemical composition ^{a)}											
	C	Si	Mn	P	S	Ni	Cr	Mo	Cu	N	Nb + Ta	Others
310	0.20 max.	1.0 max.	1.0 to 2.5	0.03 max.	0.03 max.	20.0 to 22.5	25.0 to 28.0	0.75 max.	0.75 max.	—	—	—
312	0.15 max.	1.0 max.	0.5 to 2.5	0.04 max.	0.03 max.	8.0 to 10.5	28.0 to 32.0	0.75 max.	0.75 max.	—	—	—
316	0.08 max.	1.0 max.	0.5 to 2.5	0.04 max.	0.03 max.	11.0 to 14.0	17.0 to 20.0	2.0 to 3.0	0.75 max.	—	—	—
316L	0.04 max.	1.0 max.	0.5 to 2.5	0.04 max.	0.03 max.	11.0 to 14.0	17.0 to 20.0	2.0 to 3.0	0.75 max.	—	—	—
316H	0.04 to 0.08	1.0 max.	0.5 to 2.5	0.04 max.	0.03 max.	11.0 to 14.0	17.0 to 20.0	2.0 to 3.0	0.75 max.	—	—	—
316LCu	0.04 max.	1.0 max.	0.5 to 2.5	0.04 max.	0.03 max.	11.0 to 16.0	17.0 to 20.0	1.25 to 2.75	1.0 to 2.5	—	—	—
317	0.08 max.	1.0 max.	0.5 to 2.5	0.04 max.	0.03 max.	12.0 to 14.0	18.0 to 21.0	3.0 to 4.0	0.75 max.	—	—	—
317L	0.04 max.	1.0 max.	0.5 to 2.5	0.04 max.	0.03 max.	12.0 to 14.0	18.0 to 21.0	3.0 to 4.0	0.75 max.	—	—	—
318	0.08 max.	1.0 max.	0.5 to 2.5	0.04 max.	0.03 max.	11.0 to 14.0	17.0 to 20.0	2.0 to 3.0	0.75 max.	—	8 × C to 1.0	—
329J4L	0.04 max.	1.0 max.	0.5 to 2.0	0.04 max.	0.03 max.	8.0 to 11.0	23.0 to 27.0	2.5 to 4.0	1.0 max.	0.08 to 0.30	—	—
347	0.08 max.	1.0 max.	0.5 to 2.5	0.04 max.	0.03 max.	9.0 to 11.0	18.0 to 21.0	0.75 max.	0.75 max.	—	8 × C to 1.0	—
347L	0.04 max.	1.0 max.	0.5 to 2.5	0.04 max.	0.03 max.	9.0 to 11.0	18.0 to 21.0	0.75 max.	0.75 max.	—	8 × C to 1.0	—
347H	0.04 to 0.08	1.0 max.	0.5 to 2.5	0.04 max.	0.03 max.	9.0 to 11.0	18.0 to 21.0	0.75 max.	0.75 max.	—	8 × C to 1.0	—
409	0.10 max.	1.0 max.	0.80 max.	0.04 max.	0.03 max.	0.60 max.	10.5 to 13.5	0.75 max.	0.75 max.	—	—	Ti : 10 × C to 1.5

Table 3 (concluded)

Unit: % (mass fraction)

Symbol for chemical composition ^{b)}	Chemical composition ^{a)}											
	C	Si	Mn	P	S	Ni	Cr	Mo	Cu	N	Nb + Ta	Others
409Nb	0.10 max.	1.0 max.	1.2 max.	0.04 max.	0.03 max.	0.6 max.	10.5 to 13.5	0.5 max.	0.5 max.	—	8 × C to 1.5	—
410	0.12 max.	1.0 max.	1.2 max.	0.04 max.	0.03 max.	0.60 max.	11.0 to 13.5	0.75 max.	0.75 max.	—	—	—
410NiMo	0.06 max.	1.0 max.	1.0 max.	0.04 max.	0.03 max.	4.0 to 5.0	11.0 to 12.5	0.40 to 0.70	0.75 max.	—	—	—
430	0.10 max.	1.0 max.	1.2 max.	0.04 max.	0.03 max.	0.60 max.	15.0 to 18.0	0.75 max.	0.75 max.	—	—	—
430Nb	0.10 max.	1.0 max.	1.2 max.	0.04 max.	0.03 max.	0.6 max.	15.0 to 18.0	0.5 max.	0.5 max.	—	0.5 to 1.5	—
16-8-2	0.10 max.	0.75 max.	0.5 to 2.5	0.04 max.	0.03 max.	7.5 to 9.5	14.5 to 17.5	1.0 to 2.0	0.75 max.	—	—	Cr + Mo : 18.5 max.
2209	0.04 max.	1.0 max.	0.5 to 2.0	0.04 max.	0.03 max.	7.5 to 10.0	21.0 to 24.0	2.5 to 4.0	0.75 max.	0.08 to 0.20	—	—
2307	0.04 max.	1.0 max.	2.0 max.	0.03 max.	0.02 max.	6.5 to 10.0	22.5 to 25.5	0.8 max.	0.50 max.	0.10 to 0.20	—	—
2553	0.04 max.	0.75 max.	0.5 to 1.5	0.04 max.	0.03 max.	8.5 to 10.5	24.0 to 27.0	2.9 to 3.9	1.5 to 2.5	0.10 to 0.25	—	—
2594	0.04 max.	1.0 max.	0.5 to 2.0	0.04 max.	0.03 max.	8.0 to 10.5	24.0 to 27.0	2.5 to 4.5	1.5 max.	0.20 to 0.30	—	W : 1.0 max.
2594W	0.04 max.	1.0 max.	0.5 to 2.0	0.04 max.	0.03 max.	8.0 to 11.0	23.0 to 27.0	2.5 to 4.0	1.0 max.	0.08 to 0.30	—	W : 1.0 to 2.5
Notes ^{a)} “—” signs in the table are used to indicate that these elements are not required to be analysed. ^{b)} When the content of bismuth (Bi) is specified to be not more than 10 ppm (mass fraction), BiF may be suffixed to the symbol indicating the chemical composition (example : 308L-BiF). The unit “ppm” indicates $\mu\text{g/g} = 10^{-6}$.												

Table 4 Chemical composition of deposited metal (flux cored electrodes for self-shielded arc welding)

Unit: % (mass fraction)

Symbol for chemical composition ^{b)}	Chemical composition ^{a)}											
	C	Si	Mn	P	S	Ni	Cr	Mo	Cu	N	Nb + Ta	Others
307	0.13 max.	1.0 max.	3.30 to 4.75	0.04 max.	0.03 max.	9.0 to 10.5	19.5 to 22.0	0.5 to 1.5	0.75 max.	—	—	—
308	0.08 max.	1.0 max.	0.5 to 2.5	0.04 max.	0.03 max.	9.0 to 11.0	19.5 to 22.0	0.75 max.	0.75 max.	—	—	—
308L	0.04 max.	1.0 max.	0.5 to 2.5	0.04 max.	0.03 max.	9.0 to 12.0	19.5 to 22.0	0.75 max.	0.75 max.	—	—	—
308H	0.04 to 0.08	1.0 max.	0.5 to 2.5	0.04 max.	0.03 max.	9.0 to 11.0	19.5 to 22.0	0.75 max.	0.75 max.	—	—	—
308Mo	0.08 max.	1.0 max.	0.5 to 2.5	0.04 max.	0.03 max.	9.0 to 11.0	18.0 to 21.0	2.0 to 3.0	0.75 max.	—	—	—
308LMo	0.04 max.	1.0 max.	0.5 to 2.5	0.04 max.	0.03 max.	9.0 to 12.0	18.0 to 21.0	2.0 to 3.0	0.75 max.	—	—	—
308HMo	0.07 to 0.12	0.25 to 0.80	1.25 to 2.25	0.04 max.	0.03 max.	9.0 to 10.7	19.0 to 21.5	1.8 to 2.4	0.75 max.	—	—	—
309	0.10 max.	1.0 max.	0.5 to 2.5	0.04 max.	0.03 max.	12.0 to 14.0	23.0 to 25.5	0.75 max.	0.75 max.	—	—	—
309L	0.04 max.	1.0 max.	0.5 to 2.5	0.04 max.	0.03 max.	12.0 to 14.0	23.0 to 25.5	0.75 max.	0.75 max.	—	—	—
309Mo	0.12 max.	1.0 max.	0.5 to 2.5	0.04 max.	0.03 max.	12.0 to 16.0	21.0 to 25.0	2.0 to 3.0	0.75 max.	—	—	—
309LMo	0.04 max.	1.0 max.	0.5 to 2.5	0.04 max.	0.03 max.	12.0 to 16.0	21.0 to 25.0	2.0 to 3.0	0.75 max.	—	—	—
309LNb	0.04 max.	1.0 max.	0.5 to 2.5	0.04 max.	0.03 max.	12.0 to 14.0	23.0 to 25.5	0.75 max.	0.75 max.	—	0.70 to 1.00	—
310	0.20 max.	1.0 max.	1.0 to 2.5	0.03 max.	0.03 max.	20.0 to 22.5	25.0 to 28.0	0.75 max.	0.75 max.	—	—	—
312	0.15 max.	1.0 max.	0.5 to 2.5	0.04 max.	0.03 max.	8.0 to 10.5	28.0 to 32.0	0.75 max.	0.75 max.	—	—	—

Table 4 (continued)

Unit: % (mass fraction)

Symbol for chemical composition ^{b)}	Chemical composition ^{a)}											
	C	Si	Mn	P	S	Ni	Cr	Mo	Cu	N	Nb + Ta	Others
316	0.08 max.	1.0 max.	0.5 to 2.5	0.04 max.	0.03 max.	11.0 to 14.0	18.0 to 20.5	2.0 to 3.0	0.75 max.	—	—	—
316L	0.04 max.	1.0 max.	0.5 to 2.5	0.04 max.	0.03 max.	11.0 to 14.0	18.0 to 20.5	2.0 to 3.0	0.75 max.	—	—	—
316LK	0.04 max.	1.0 max.	0.5 to 2.5	0.04 max.	0.3 max.	11.0 to 14.0	17.0 to 20.0	2.0 to 3.0	0.75 max.	—	—	—
316H	0.04 to 0.08	1.0 max.	0.5 to 2.5	0.04 max.	0.03 max.	11.0 to 14.0	18.0 to 20.5	2.0 to 3.0	0.75 max.	—	—	—
316LCu	0.03 max.	1.0 max.	0.5 to 2.5	0.04 max.	0.03 max.	11.0 to 16.0	18.0 to 20.5	1.25 to 2.75	1.0 to 2.5	—	—	—
317	0.08 max.	1.0 max.	0.5 to 2.5	0.04 max.	0.03 max.	13.0 to 15.0	18.5 to 21.0	3.0 to 4.0	0.75 max.	—	—	—
317L	0.04 max.	1.0 max.	0.5 to 2.5	0.04 max.	0.03 max.	13.0 to 15.0	18.5 to 21.0	3.0 to 4.0	0.75 max.	—	—	—
318	0.08 max.	1.0 max.	0.5 to 2.5	0.04 max.	0.03 max.	11.0 to 14.0	18.0 to 20.5	2.0 to 3.0	0.75 max.	—	8 × C to 1.0	—
347	0.08 max.	1.0 max.	0.5 to 2.5	0.04 max.	0.03 max.	9.0 to 11.0	19.0 to 21.5	0.75 max.	0.75 max.	—	8 × C to 1.0	—
347L	0.04 max.	1.0 max.	0.5 to 2.5	0.04 max.	0.03 max.	9.0 to 11.0	19.0 to 21.5	0.75 max.	0.75 max.	—	8 × C to 1.0	—
409	0.10 max.	1.0 max.	0.80 max.	0.04 max.	0.03 max.	0.60 max.	10.5 to 13.5	0.75 max.	0.75 max.	—	—	Ti : 10 × C to 1.5
409Nb	0.12 max.	1.0 max.	1.0 max.	0.04 max.	0.03 max.	0.6 max.	10.5 to 14.0	0.75 max.	0.75 max.	—	8 × C to 1.5	—
410	0.12 max.	1.0 max.	1.0 max.	0.04 max.	0.03 max.	0.60 max.	11.0 to 13.5	0.75 max.	0.75 max.	—	—	—
410NiMo	0.06 max.	1.0 max.	1.0 max.	0.04 max.	0.03 max.	4.0 to 5.0	11.0 to 12.5	0.40 to 0.70	0.75 max.	—	—	—

Table 4 (concluded)

Unit: % (mass fraction)

Symbol for chemical composition ^{b)}	Chemical composition ^{a)}											
	C	Si	Mn	P	S	Ni	Cr	Mo	Cu	N	Nb + Ta	Others
430	0.10 max.	1.0 max.	1.0 max.	0.04 max.	0.03 max.	0.60 max.	15.0 to 18.0	0.75 max.	0.75 max.	—	—	—
430Nb	0.10 max.	1.0 max.	1.0 max.	0.04 max.	0.03 max.	0.6 max.	15.0 to 18.0	0.75 max.	0.75 max.	—	0.5 to 1.5	—
16-8-2	0.10 max.	0.75 max.	0.5 to 2.5	0.04 max.	0.03 max.	7.5 to 9.5	14.5 to 17.5	1.0 to 2.0	0.75 max.	—	—	Cr + Mo : 18.5 max.
2209	0.04 max.	1.0 max.	0.5 to 2.0	0.04 max.	0.03 max.	7.5 to 10.0	21.0 to 24.0	2.5 to 4.0	0.75 max.	0.08 to 0.20	—	—
2307	0.04 max.	1.0 max.	2.0 max.	0.03 max.	0.02 max.	6.5 to 10.0	22.5 to 25.5	0.8 max.	0.50 max.	0.10 to 0.20	—	—
2553	0.04 max.	0.75 max.	0.5 to 1.5	0.04 max.	0.03 max.	8.5 to 10.5	24.0 to 27.0	2.9 to 3.9	1.5 to 2.5	0.10 to 0.25	—	—
2594	0.04 max.	1.0 max.	0.5 to 2.5	0.04 max.	0.03 max.	8.0 to 10.5	24.0 to 27.0	2.5 to 4.5	1.5 max.	0.20 to 0.30	—	W : 1.0 max.
Notes ^{a)} “—” signs in the table are used to indicate that these elements are not required to be analysed. ^{b)} When the content of bismuth (Bi) is specified to be not more than 10 ppm (mass fraction), BiF may be suffixed to the symbol indicating the chemical composition (example : 308L-BiF). The unit “ppm” indicates $\mu\text{g/g} = 10^{-6}$.												

Table 5 Chemical composition of deposited metal (metal cored electrodes for gas-shielded arc welding)

Unit: % (mass fraction)

Symbol for chemical composition ^{b)}	Chemical composition ^{a)}											
	C	Si	Mn	P	S	Ni	Cr	Mo	Cu	N	Nb + Ta	Others
209	0.05 max.	0.90 max.	4.0 to 7.0	0.03 max.	0.03 max.	9.5 to 12.0	20.5 to 24.0	1.5 to 3.0	0.75 max.	0.10 to 0.30	—	V : 0.10 to 0.30
218	0.10 max.	3.5 to 4.5	7.0 to 9.0	0.03 max.	0.03 max.	8.0 to 9.0	16.0 to 18.0	0.75 max.	0.75 max.	0.08 to 0.18	—	—