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JIS Z 3316 : 2001

TIG welding rods and solid wires
for mild steel and low alloy steel

ICS 25.160.20

Descriptors : low-carbon steels, low-alloy steels, gas tungsten-arc welding, welding rods,
filler wire

Reference number : JIS Z 3316 : 2001 (E)

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 in accordance with the Industrial Standardization Law. Consequently **JIS Z 3316 : 1989** is replaced with **JIS Z 3316 : 2001**.

Attention is drawn to the possibility that some parts of this Standard may conflict with a patent right, application for a patent after opening to the public, utility model right or application for registration of utility model after opening to the public which have technical properties. The relevant Minister and the Japanese Industrial Standards Committee are not responsible for identifying the patent right, application for a patent after opening to the public, utility model right or application for registration of utility model after opening to the public which have the said technical properties.

This revision is made for conformity with **ISO 636 : 1989** *Bare solid filler rods for oxy-acetylene and tungsten inert gas arc (TIG) welding, depositing an unalloyed or low alloyed steel—Codification*. Further, **JIS Z 3200** specifying “Welding consumables—Technical delivery conditions for welding filler metals—Type of product, dimensions, tolerances and marking” is used as the normative reference.

Date of Establishment: 1983-11-01

Date of Revision: 2001-04-20

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Investigated by: Japanese Industrial Standards Committee
Divisional Council on Welding

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

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TIG welding rods and solid wires for mild steel and low alloy steel

Introduction This Japanese Industrial Standard specifies TIG welding rods and solid wires for mild steel and low alloy steel, and established in 1983, and revised thereafter several times.

In JIS Z 3316 : 1989, the materials are classified by the chemical composition and the mechanical properties of the deposited metal. On the other hand, in ISO 636 incorporated in the Annex in this revision, the materials are classified only by the chemical composition. In conformity of JIS with the International Standard, it was expected that manufacturers and users might be seriously inconvenienced if the conventional standard is basically changed, and thus, it was decided that this Standard should be conformed with the International Standard step by step. In this Standard, a method of codification of "Bare solid filler rods for oxy-acetylene and tungsten inert gas arc (TIG) welding, depositing an unalloyed or low alloyed steel" specified in ISO 636 was employed and incorporated in the Annex of this Standard. As a result, two kinds of methods of codification are specified in this Standard. Which of these methods is to be used depends on the agreement between the parties concerned with delivery, but in future, this Standard will be in conformity with the requirements of the International Standard. In principle, one kind of codification shall be specified for one item of the material; however, regarding the material to which this Standard is applicable, the material is temporarily classified into two kinds, i.e., the kind specified in the text of this Standard and the kind to which the Annex of this Standard is applicable.

1 Scope This Standard specifies the filler rods (hereafter referred to as "rods") and wires (hereafter referred to as "wires") to be used for TIG-arc-welding of mild steel, high strength steel, molybdenum steel and chromium molybdenum steel.

Remarks : The International Standard corresponding to this Standard is listed as follows:

ISO 636 : 1989 *Bare solid filler rods for oxy-acetylene and tungsten inert gas arc (TIG) welding, depositing an unalloyed or low alloyed steel—Codification*

2 Normative references The standards listed in Attached Table 1 contain provisions which, through reference in this Standard, constitute provisions of this Standard. The most recent editions of the standards (including amendments) shall be applied.

3 Classification Rods and wires are classified according to the chemical composition of rods and wires and mechanical properties of the deposited metal, as shown in Table 1.

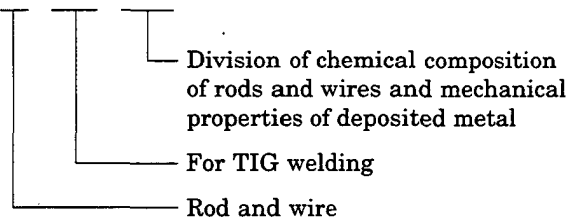
Regarding classification, the requirements in 2 of the Annex may be applied by the agreement between the parties concerned with delivery.

Table 1 Classification of rods and wires

Class	Applicable steel
YGT50 YGT60 YGT62 YGT70 YGT80	Mild steel and high strength steel
YGTM YGTML YGT1CM YGT1CML YGT2CM YGT2CML YGT3CM YGT5CM	Molybdenum steel and chromium molybdenum steel

Remarks : The symbols for classification shall be given as shown in the following example:

Example: Y GT 50



4 Quality Quality shall be as given as follows:

Regarding quality, the requirements in 3 of the Annex may be applied by the agreement between the parties concerned with delivery.

4.1 Appearance Appearance of welding rods and wires shall conform to the requirements in 3 of JIS Z 3200.

4.2 Chemical composition Chemical composition of rods and wires shall conform to the requirements of Table 2 when tested by the method specified in 7.1.