

INTERNATIONAL STANDARD

**ISO
636**

Second edition
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Bare solid filler rods for oxy-acetylene and tungsten inert gas arc (TIG) welding, depositing an unalloyed or low alloyed steel — Codification

iTeh STANDARD PREVIEW

*Baguettes métalliques nues massives pour le soudage oxyacétylénique et le soudage
à l'arc en atmosphère inerte avec électrode en tungstène (TIG), déposant un acier
non allié ou faiblement allié — Codification*

ISO 636:1989

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Reference number
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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 636 was prepared by Technical Committee ISO/TC 44, *Welding and allied processes*.

[ISO 636:1989](#)

This second edition replaces the first edition (ISO 636 : 1975), which was withdrawn in 1983.

Bare solid filler rods for oxy-acetylene and tungsten inert gas arc (TIG) welding, depositing an unalloyed or low alloyed steel – Codification

1 Scope

This International Standard specifies an identification code applicable to bare solid filler rods for oxy-acetylene welding and tungsten inert gas arc welding (TIG welding), depositing an unalloyed or low alloyed steel; the identification code comprises symbols referring to the welding process used and the chemical composition of the filler materials.

— symbol for the chemical composition: one Roman numeral.

2.1 General symbol

The letter G or T, placed as the first element of the code, designates the two welding processes, i.e. oxy-acetylene welding and TIG welding, respectively.

2 Identification code

The identification code of filler rods covered by this International Standard comprises the following two symbols:

- general symbol: letter G or T

2.2 Symbols for the chemical composition

The Roman numeral designates the chemical composition of the filler material; the relevant chemical composition shall be in accordance with either table 1 (I and VII) or table 2 (I and V) depending on the welding process used.

Table 1 — Chemical composition¹⁾ of filler material for oxy-acetylene welding

Values in percentages by mass

Identification code	C	Si	Mn	P	S	Mo	Ni	Cr	Cu ²⁾
G I	0,03 to 0,13	0,02 to 0,2	0,35 to 0,65	< 0,03	< 0,025	< 0,15	< 0,15	< 0,15	< 0,15
G II	0,03 to 0,2	0,05 to 0,25	0,5 to 1,2	< 0,025	< 0,025	< 0,15	< 0,15	< 0,15	< 0,15
G III	0,05 to 0,15	0,05 to 0,2	0,95 to 1,25	< 0,02	< 0,02	< 0,15	0,35 to 0,8	< 0,15	< 0,15
G IV	0,07 to 0,15	0,05 to 0,25	0,8 to 1,2	< 0,025	< 0,025	0,45 to 0,65	< 0,15	< 0,15	< 0,15
G V	0,1 to 0,16	0,05 to 0,25	0,8 to 1,2	< 0,02	< 0,02	0,45 to 0,65	< 0,15	0,85 to 1,2	< 0,15
G VI	0,03 to 0,1	0,05 to 0,25	0,4 to 0,7	< 0,02	< 0,02	0,90 to 1,15	< 0,15	2 to 2,2	< 0,15
G VII	0,14 to 0,25	0,1 to 0,35	0,8 to 1,2	< 0,025	< 0,025	< 0,15	0,65 to 0,9	< 0,15	< 0,15

1) The values for the content of other elements shall be as follows:

- total content: < 0,5 %
- content of any one element: < 0,3 %
- vanadium content: < 0,1 %

2) These values apply before any copper coating (residual copper only); if a copper coating is applied, the total copper content (for rods having a diameter greater than or equal to > 1,6 mm) shall not exceed 0,3 %.

Table 2 – Chemical composition of filler material for TIG welding

Values in percentages by mass

Identification code	C	Si	Mn	P	S	Mo	Cr	Cu ¹⁾
T I	0,06 to 0,13	0,5 to 0,8	1 to 1,3	< 0,025	< 0,025	< 0,15	< 0,15	< 0,15
T II	0,06 to 0,13	0,7 to 1	1,3 to 1,6	< 0,025	< 0,025	< 0,15	< 0,15	< 0,15
T III	0,08 to 0,12	0,5 to 0,8	0,9 to 1,3	< 0,02	< 0,02	0,4 to 0,6	< 0,15	< 0,15
T IV	0,08 to 0,14	0,5 to 0,8	0,8 to 1,2	< 0,02	< 0,02	0,4 to 0,6	1 to 1,3	< 0,15
T V	< 0,1	0,5 to 0,8	0,8 to 1,2	< 0,02	< 0,02	0,9 to 1,2	2,3 to 3	< 0,15

1) These values apply before any copper coating (residual copper only); if a copper coating is applied, the total copper content (for rods having a diameter greater than or equal to $\geq 1,6$ mm) shall not exceed 0,5 %.

3 Test for chemical composition

The requirements specified for the chemical composition (see tables 1 and 2) are based on the chemical analysis of the rod.

The analysis shall be carried out only on the elements for which values are specified in table 1. For this purpose, a sample of

filler material shall be taken; the size of the sample shall be determined according to the analysis method used. (If the residual copper content is to be checked, the sample of filler material for the chemical analysis shall be subjected first of all to a chemical etching or mechanical cleaning treatment so as to remove the coating.)

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