INTERNATIONAL STANDARD

ISO 6848

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Arc welding and cutting — Nonconsumable tungsten electrodes — Classification

Soudage et coupage à l'arc — Électrodes non consommables en tungstène — Classification

Reference number
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Foreword

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International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 6848 was prepared by Technical Committee ISO/TC 44, *Welding and allied processes*, Subcommittee SC 3, *Welding consumables*.

This second edition cancels and replaces the first edition (ISO 6848:1984), which has been technically revised.

Introduction

Tungsten electrodes are used in a variety of welding and allied processes, including tungsten inert gas welding, plasma arc welding and cutting, plasma spraying, and atomic hydrogen welding. In contrast to most other welding electrodes, tungsten electrodes are not intended to become part of the weld deposit. Nevertheless, the chemical composition of a tungsten electrode has an important effect on its range of usage in welding and allied processes. Therefore, tungsten electrodes are classified according to their chemical composition.

Requests for official interpretations of any aspect of this International Standard should be directed to the Secretariat of ISO/TC 44/SC 3 via your national standards body. A complete listing of national standards bodies can be found at www.iso.org.

Arc welding and cutting — Nonconsumable tungsten electrodes — Classification

1 Scope

This International Standard specifies requirements for classification of nonconsumable tungsten electrodes for inert gas shielded arc welding, and for plasma welding, cutting and thermal spraying.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 31-0:1992, *Quantities and units — Part 0: General principles*

3 Classification

Classification of a tungsten electrode is based upon its chemical composition.

4 Symbols and requirements

4.1 Symbol for the product/process

The symbol for gas shielded tungsten arc processes is the letter W.

4.2 Symbol for the chemical composition

The symbol for the chemical composition of the tungsten electrode is the chemical symbol for the principal oxide additive followed by digits indicating the nominal mass percent of the oxide additive multiplied by 10. If there is no additive, the symbol is the letter P. Table 1 lists the composition requirements for the various classifications. Compositions not listed in Table 1 shall be symbolized by the letters WG, followed by the chemical symbol and digits for the major oxide additive, according to the principle used for the other compositions given in Table 1.

5 Chemical analysis

Chemical analysis shall be performed on specimens of the electrode being classified. Any analytical technique may be used but, in cases of dispute, reference shall be made to established published methods.

6 Retests

If any test fails to meet the requirement, that test shall be repeated twice. The results of both retests shall meet the requirements. Specimens for retesting may be taken from the original test assembly or from a new test assembly. For chemical analysis, retests need only be for those specific elements that failed to meet their