

# INTERNATIONAL STANDARD



# 3677

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## Filler metals for brazing and soldering — Code of symbols

*Métaux d'apport de brasage tendre et de brasage fort — Code de symbolisation*

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## FOREWORD

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO Member Bodies). The work of developing International Standards is carried out through ISO Technical Committees. Every Member Body interested in a subject for which a Technical Committee has been set up 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.

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.

International Standard ISO 3677 was drawn up by Technical Committee ISO/TC 44, *Welding*, and circulated to the Member Bodies in February 1975.

It has been approved by the Member Bodies of the following countries :

|          |                       |             |
|----------|-----------------------|-------------|
| Austria  | Ireland               | Spain       |
| Belgium  | Israel                | Sweden      |
| Bulgaria | Italy                 | Switzerland |
| Canada   | New Zealand           | Turkey      |
| Finland  | Portugal              | U.S.A.      |
| France   | Romania               | U.S.S.R.    |
| Germany  | South Africa, Rep. of | Yugoslavia  |

The Member Bodies of the following countries expressed disapproval of the document on technical grounds :

Australia  
Japan  
United Kingdom

# Filler metals for brazing and soldering — Code of symbols

## 1 SCOPE AND FIELD OF APPLICATION

This International Standard establishes the symbolization of filler metals for brazing and soldering, on the basis of chemical composition and solidus-liquidus temperature.

It deals only with filler metals for brazing<sup>1)</sup> and soldering<sup>1)</sup>.

## 2 SYMBOLS AND REQUIREMENTS

The symbolization is divided into three parts :

**2.1** A first letter **B** denoting an alloy essentially intended for soldering and brazing.

**2.2** A group of **chemical symbols** corresponding to the alloy constituents.

**2.2.1** Alloy constituents which account for less than 2 % of the composition are not taken into consideration.

**2.2.2** The alloy constituent having the highest content in the alloy is placed first in the group of chemical symbols.

**2.2.3** The first chemical symbol is followed by the percentage by mass of the metal concerned contained in the alloy (this value shall be given with an accuracy better than  $\pm 0,5$  in terms of absolute value or  $\pm 1\%$  in terms of relative value).

**2.2.4** The other chemical symbols are classified in decreasing order of percentage of the metals symbolized; if two or more metals have the same percentage, they are classified in decreasing order of atomic number.

**2.2.5** Only the first six chemical symbols are taken into account.

**2.3** The last group indicating the **solidus-liquidus temperature** of the alloy.

The method used for these measurements shall provide an accuracy better than  $\pm 0,5\%$  for brazing alloys and  $\pm 2\%$  for soldering alloys.

## 3 EXAMPLES

**3.1** The binary eutectic alloy with 72 % silver and 28 % copper with a melting temperature of  $780^{\circ}\text{C}$  is symbolized as follows :

**B Ag72 Cu 780**

**3.2** The nickel-base alloy (63 %) with 16 % tungsten, 10 % chromium, 3,8 % iron, 3,2 % silicon, 2,5 % boron, 0,5 % carbon, 0,6 % phosphorus, 0,1 % manganese and 0,2 % cobalt, with a melting temperature of  $S 970^{\circ}\text{C} - L 1 105^{\circ}\text{C}$ , is symbolized as follows :

**B Ni63 W Cr Fe Si B 970 — 1 105**

1) For definitions of brazing and soldering, see ISO/R 857, *Definitions of welding processes*.