# SLOVENSKI STANDARD
# SIST EN 12536:2001

**01-maj-2001**

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**Dodajni in pomoǵni materiali za varjenje - Palice za obloļ no varjenje nelegiranih in proti lezenju odpornih jekel v zaģļ itnem plinu - Razvrģļ anje**

Welding consumables - Rods for gas welding of non alloy and creep-resisting steels - Classification

Schweißzusätze - Stäbe zum Gasschweißen von unlegierten und warmfesten Stählen - Einteilung



Produits consommables pour le soudage - Baguettes pour le soudage aux gaz des aciers résistant au fluage - Classification



**Ta slovenski standard je istoveten z:** **EN 12536:2000**

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**ICS:**

25.160.20 Potrošni material pri varjenju Welding consumables

**SIST EN 12536:2001** **en**

# EUROPEAN STANDARD
# NORME EUROPÉENNE
# EUROPÄISCHE NORM

**EN 12536**

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English version

# Welding consumables - Rods for gas welding of non alloy and creep-resisting steels - Classification

Produits consommables pour le soudage - Baguettes pour le soudage aux gaz des aciers non alliés et des aciers résistant au fluage - Classification

Schweißzusätze - Stäbe zum Gasschweißen von unlegierten und warmfesten Stählen - Einteilung

This European Standard was approved by CEN on 24 December 1999.

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This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.



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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

**Central Secretariat: rue de Stassart, 36 B-1050 Brussels**



Ref. No. EN 12536:2000 E

## Contents

## Foreword

This European Standard has been prepared by Technical Committee CEN/TC 121 "Welding", the secretariat of which is held by DS.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by August 2000, and conflicting national standards shall be withdrawn at the latest by August 2000.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

## 1 Scope

This standard specifies a classification in order to designate rods for gas welding of non alloy and creep-resisting steels in terms of the chemical composition of the rod.

## 2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

| | |
|---|---|
| EN 759 | Welding consumables - Technical delivery conditions for welding filler metals - Type of product, dimensions, tolerances and marking. |
| ISO 31-0:1992 | Quantities and units - Part 0: General principles |

## 3 Classification



A rod shall be classified with the symbol for its chemical composition in table 1. Information about welding behaviour is given in annex A.



The classification is divided into two parts:

1) The first part gives a symbol indicating the product/process to be identified;

2) The second part gives a symbol indicating the chemical composition of the rod.

## 4 Symbols and requirements

### 4.1 Symbol for the product/process

The symbol for the rod used in the gas welding process shall be the letter O.

### 4.2 Symbol for the chemical composition of rods

The symbol in table 1 indicates the chemical composition of the rod, determined under conditions given in clause 5.

## Table 1 - Symbol for chemical composition of rods, percentage by mass

| Symbol | Chemical composition in % [1)2)3)] | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | C | Si | Mn | P | S | Mo | Ni | Cr |
| O Z | Any other agreed composition | | | | | | | |
| O I | 0,03 to 0,12 | 0,02 to 0,20 | 0,35 to 0,65 | 0,030 | 0,025 | - | - | - |
| O II | 0,03 to 0,20 | 0,05 to 0,25 | 0,50 to 1,20 | 0,025 | 0,025 | - | - | - |
| O III | 0,05 to 0,15 | 0,05 to 0,25 | 0,95 to 1,25 | 0,020 | 0,020 | - | 0,35 to 0,80 | - |
| O IV | 0,08 to 0,15 | 0,10 to 0,25 | 0,90 to 1,20 | 0,020 | 0,020 | 0,45 to 0,65 | - | - |
| O V | 0,10 to 0,15 | 0,10 to 0,25 | 0,80 to 1,20 | 0,020 | 0,020 | 0,45 to 0,65 | - | 0,80 to 1,20 |
| O VI | 0,03 to 0,10 | 0,10 to 0,25 | 0,40 to 0,70 | 0,020 | 0,020 | 0,90 to 1,20 | - | 2,00 to 2,20 |

1) If not specified: Mo ≤ 0,3 %, Ni ≤ 0,3 %, Cr ≤ 0,15 %, Cu ≤ 0,35 % and V ≤ 0,03 %. Residual copper content in the steel including any coating shall not exceed 0,35 weight percent.
2) Single values shown in the table are maximum values.
3) The results shall be rounded to the same number of significant figures as in the specified value using the rules in accordance with annex B, Rule A of ISO 31-0:1992.

## 5 Chemical analysis

Chemical analysis is performed on specimens of the rod. Any analytical technique can be used, but in case of dispute reference shall be made to established published methods.

NOTE: See annex B.

## 6 Technical delivery conditions

Technical delivery conditions shall meet the requirements in EN 759.

## 7 Designation

A rod for gas welding has a chemical composition within the limits for the alloy symbol O III of table 1.

The designation will be:

Rod EN 12536 - O III

where,

EN 12536 = standard number;

O = rod/gas welding (see 4.1);

III = chemical composition of rod (see table 1).

## Annex A (informative)

## Welding behaviour

Rods with symbol I to VI have different welding behaviour. In table A.1 typical welding behaviour of different rods is listed.

**Table A.1 - Welding behaviour**

| Rod symbol \ Behaviour | O I | O II | O III | O IV | O V | O VI |
|---|---|---|---|---|---|---|
| fluidity | highly fluid | less fluid | viscous | | | |
| spatter | much | less | no | | | |
| sensitive to porosity | yes | yes | no | | | |