

## **RATIFICACIÓN DE DOCUMENTOS EUROPEOS NOVIEMBRE 2008**

### HOJA DE ANUNCIO

En cumplimiento del punto 11.2.6.4 de las Reglas Internas de CEN/CENELEC Parte 2, se ha otorgado el rango de norma española al Documento Europeo siguiente:

<b>Documento Europeo</b>	<b>Título</b>	<b>Fecha de Disponibilidad</b>
EN 50504:2008	Validación de los equipos de soldadura por arco. (Ratificada por AENOR en noviembre de 2008.)	2008-07-24

Este anuncio causará efecto a partir del primer día del mes siguiente al de su publicación en la revista UNE. La correspondiente versión oficial de este documento se encuentra disponible en la sede de AENOR, Calle Génova 6, 28004 MADRID.

-----  
©..2008.. Derechos de reproducción reservados a los Miembros de CENELEC.

## **Validation of arc welding equipment**

Validation du matériel de soudage à l'arc

Validierung von  
Lichtbogenschweißeinrichtungen

This European Standard was approved by CENELEC on 2008-06-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

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 CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

## **CENELEC**

European Committee for Electrotechnical Standardization  
Comité Européen de Normalisation Electrotechnique  
Europäisches Komitee für Elektrotechnische Normung

**Central Secretariat: rue de Stassart 35, B - 1050 Brussels**

## Foreword

This European Standard has been prepared by the Technical Committee CENELEC TC 26A, Electric arc welding equipment.

The text of the draft was submitted to the formal vote and was approved by CENELEC as EN 50504 on 2008-06-01.

The following dates were fixed:

- latest date by which the EN has to be implemented  
at national level by publication of an identical  
national standard or by endorsement (dop) 2009-06-01
- latest date by which the national standards conflicting  
with the EN have to be withdrawn (dow) 2011-06-01

This European Standard has been developed under the authority of CLC/TC 26A, Electric arc welding equipment. Welding is considered to be a special process because the final result may not always be capable of being verified by testing, hence it requires continuous control and/or adherence to documented procedures.

This European Standard has been developed to identify the controls and procedures required. It requires the use of calibrated welding equipment, then the quality/consistency of the weld depends upon accurate and repeatable setting of parameters such as current, voltage, speed, gas flow, etc.

This European Standard concentrates on validating equipment built to the constructional standard EN 60974-1. The accuracy of this equipment is designated as standard grade. A higher level of accuracy (precision grade) is introduced in this document.

As a code of practice, this European Standard takes the form of guidance and recommendations. It should not be quoted as if it were a specification and particular care should be taken to ensure that claims of compliance are not misleading.

A standard does not purport to include all necessary provisions of a contract. Users of standards are responsible for their correct application.

Compliance with a standard does not of itself confer immunity from legal obligations.

---

Introduction .....	4
1 Scope .....	6
2 Normative references .....	6
3 Terms and definitions .....	6
4 Validation accuracies.....	7
5 Consistency .....	8
6 Frequency of validation and calibration .....	8
7 Validators of welding equipment .....	8
8 Validation .....	8
8.1 General .....	8
8.2 Manual metal arc welding with covered electrodes .....	9
8.3 Tungsten inert gas .....	9
8.4 Metal inert/active gas and flux cored arc welding .....	10
8.5 Auxiliary components .....	10
9 Validation techniques .....	10
9.1 General .....	10
9.2 Safety precautions .....	10
9.3 Instrumentation .....	11
9.4 Power source loads .....	12
9.5 Method .....	13
10 Validation labels and certificates .....	14
10.1 Validation labels .....	14
10.2 Validation certificate .....	15
Annex A (informative) Accuracies for precision grade power sources .....	16
Annex B (informative) Wire feed equipment .....	17
B.1 Validation accuracies .....	17
B.2 Requirements for validation .....	17
B.3 Method .....	18
Annex C (informative) Slope, pulse and synergic controls .....	19
C.1 Validation accuracy .....	19
C.2 Requirements for validation .....	19
C.3 Method .....	19
C.4 Pulsed MIG and synergic controls .....	20
Annex D (informative) Precautions to be taken with TIG welding equipment.....	21
Annex E (informative) Validation of ancillary components in a welding system .....	22
Annex F (informative) Voltage drops in the welding circuit .....	23
Bibliography .....	25
<b>Figure</b>	
Figure F.1 .....	23
<b>Tables</b>	
Table 1 – Validation accuracies for standard grade power sources .....	7
Table A.1 – Validation accuracies for precision grade power sources .....	16
Table B.1 – Validation accuracies for wire feed equipment .....	17
Table F.1 – Voltage drop in copper and aluminium welding cables at normal and elevated temperatures .....	24