

TECHNICAL SPECIFICATION

CLC/TS 62081

SPÉCIFICATION TECHNIQUE

TECHNISCHE SPEZIFIKATION

July 2002

ICS 25.160.30

Replaces HD 407 S1:1980 and HD 427 S1:1981

English version

**Arc welding equipment —
Installation and use
(IEC 62081:1999)**

Matériel de soudage à l'arc —
Installation et utilisation
(CEI 62081:1999)

Lichtbogenschweißeinrichtungen —
Errichtung und Betrieb
(IEC 62081:1999)

This Technical Specification was approved by CENELEC on 2002-07-02.

CENELEC members are required to announce the existence of this TS in the same way as for an EN and to make the TS available promptly at national level in an appropriate form. It is permissible to keep conflicting national standards in force.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and 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

The text of the Technical Specification IEC 62081:1999, prepared by IEC TC 26, Electric welding, was submitted to the questionnaire and vote procedure and was approved by CENELEC as CLC/TS 62081 on 2002-07-02 without any modification.

This Technical Specification supersedes HD 407 S1:1980 and HD 427 S1:1981.

The following date was fixed:

- latest date by which the existence of the CLC/TS
has to be announced at national level (doa) 2002-10-01

Endorsement notice

The text of the Technical Specification IEC 62091:1999 was approved by CENELEC as a Technical Specification without any modification.

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

This Technical Specification 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 Technical Specification only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60050-195	1998	International Electrotechnical Vocabulary (IEV) Chapter 195: Earthing and protection against electric shock	-	-
IEC 60204-1	1997	Safety of machinery - Electrical equipment of machines Part 1: General requirements	EN 60204-1	1997
IEC 60364-4-41 (mod)	1992	Electrical installations of buildings Part 4: Protection for safety Chapter 41: Protection against electric shock	HD 384.4.41 S2	1996
IEC 60947-2	1995	Low-voltage switchgear and controlgear Part 2: Circuit-breakers	EN 60947-2	1996
IEC 60974-1	1998	Arc welding equipment Part 1: Welding power sources	EN 60974-1	1998
IEC 60974-11 (mod)	1992	Part 11: Electrode holders	EN 60974-11	1995
IEC 60974-12 (mod)	1992	Part 12: Coupling devices for welding cables	EN 60974-12	1995
IEC 61008 (mod)	Series	Electrical accessories – Residual current operated circuit-breakers without integral overcurrent protection for household and similar uses (RCCB's)	EN 61008	Series
IEC 61009 (mod)	Series	Electrical accessories – Residual current operated circuit-breakers with integral overcurrent protection for household and similar uses (RCBO's)	EN 61009	Series
IEC 61140	1997	Protection against electric shock - Common aspects for installation and equipment	EN 61140	2001

SOMMAIRE

	Pages
AVANT-PROPOS	4
Articles	
1 Domaine d'application	6
2 Références normatives.....	6
3 Définitions.....	8
4 Installation	10
4.1 Généralités	10
4.1.1 Sélection du câble d'alimentation et protection contre les surcharges.....	10
4.1.2 Dispositif de sectionnement de l'alimentation.....	10
4.1.3 Dispositif d'arrêt d'urgence	10
4.1.4 Protection contre les chocs électriques causés par l'alimentation	12
4.2 Circuit de soudage	12
4.2.1 Séparation du réseau d'alimentation	12
4.2.2 Tension d'alimentation de soudage.....	12
4.2.3 Raccordement entre la source de courant de soudage et la pièce mise en œuvre	12
4.2.4 Mise à la terre de la pièce mise en œuvre.....	14
4.2.5 Emplacement des bouteilles à gaz.....	14
5 Utilisation.....	16
5.1 Prescriptions générales.....	16
5.2 Raccordement de plusieurs sources de courant de soudage	16
5.3 Examen et maintenance de l'installation de soudage	16
5.4 Déconnexion de sources de courant de soudage et / ou de circuits de soudage	16
5.5 Protecteurs	18
5.6 Informations pour les opérateurs	18
5.7 Mesures de protection.....	18
5.7.1 Eléments conducteurs (étrangers) dans la zone de soudage.....	18
5.7.2 Protection contre les chocs électriques.....	18
5.8 Séparation du circuit de soudage de la pièce mise en œuvre et de la terre lorsqu'il n'est pas utilisé	18
5.9 Tension entre les porte-électrode ou les torches.....	20
5.10 Soudage dans un environnement avec risque accru de choc électrique.....	24
5.11 Usage de bandoulières.....	26
5.12 Soudage effectué en hauteur.....	26
Annexe A – Risques reliés au soudage à l'arc.....	28
Bibliographie	40

CONTENTS

	Page
FOREWORD	5
Clause	
1 Scope	7
2 Normative references	7
3 Definitions	9
4 Installation	11
4.1 General	11
4.1.1 Selection of supply cable and protection against overload	11
4.1.2 Supply disconnecting device	11
4.1.3 Emergency stopping device	11
4.1.4 Protection against electric shock from the mains supply	13
4.2 Welding circuit	13
4.2.1 Isolation from the mains supply	13
4.2.2 Welding voltage supply	13
4.2.3 Connection between the welding power source and the work piece	13
4.2.4 Earthing of the work piece	15
4.2.5 Location of gas cylinders	15
5 Use	17
5.1 General requirements	17
5.2 Connection between several welding power sources	17
5.3 Inspection and maintenance of the welding installation	17
5.4 Disconnection of welding power sources and/or welding circuits	17
5.5 Guards	19
5.6 Information for operators	19
5.7 Protective measures	19
5.7.1 Extraneous conductive parts in the welding area	19
5.7.2 Protection against electric shock	19
5.8 Isolation of the welding circuit from the work piece and earth when not in use	19
5.9 Voltage between electrode holders or torches/guns	21
5.10 Welding in an environment with increased hazard of electric shock	25
5.11 Use of shoulder slings	27
5.12 Welding at elevated positions	27
Annex A – Hazards connected with arc welding	29
Bibliography	41