

Australian Standard<sup>®</sup>

## **Arc welding equipment**

### **Part 1: Welding power sources (IEC 60974-1:2000, MOD)**



This Australian Standard® was prepared by Committee EL-019, Electrical Welding Plant. It was approved on behalf of the Council of Standards Australia on 19 July 2006. This Standard was published on 25 August 2006.

---

The following are represented on Committee EL-019:

- Australian Chamber of Commerce and Industry
  - Australian Industry Group
  - Australian Manufacturing Workers Union
  - Electrical Regulatory Authorities Council
  - Welding Technology Institute of Australia
- 

This Standard was issued in draft form for comment as DR 05367.

Standards Australia wishes to acknowledge the participation of the expert individuals that contributed to the development of this Standard through their representation on the Committee and through public comment period.

---

### **Keeping Standards up-to-date**

Australian Standards® are living documents that reflect progress in science, technology and systems. To maintain their currency, all Standards are periodically reviewed, and new editions are published. Between editions, amendments may be issued.

Standards may also be withdrawn. It is important that readers assure themselves they are using a current Standard, which should include any amendments that may have been published since the Standard was published.

Detailed information about Australian Standards, drafts, amendments and new projects can be found by visiting **[www.standards.org.au](http://www.standards.org.au)**

Standards Australia welcomes suggestions for improvements, and encourages readers to notify us immediately of any apparent inaccuracies or ambiguities. Contact us via email at **[mail@standards.org.au](mailto:mail@standards.org.au)**, or write to Standards Australia, GPO Box 476, Sydney, NSW 2001.

---

# Australian Standard<sup>®</sup>

## Arc welding equipment

### Part 1: Welding power sources (IEC 60974-1:2000, MOD)

Originated as AS C97—1942, and AS1966.3—1990.  
AS C97 revised and redesignated AS 1966—1976.  
AS 1966 revised and redesignated AS 1966.1—1985 and  
AS 1966.2—1985.  
AS 1966.1—1985, AS 1966.2—1985 and AS 1966.3-1990 revised and  
redesignated AS 60974.1—2006.

#### **COPYRIGHT**

© Standards Australia

All rights are reserved. No part of this work may be reproduced or copied in any form or by any means, electronic or mechanical, including photocopying, without the written permission of the publisher.

Published by Standards Australia GPO Box 476, Sydney, NSW 2001, Australia

ISBN 0 7337 7695 7

## PREFACE

This Standard was prepared by Standards Australia Committee EL-019, Electrical Welding Plant, to supersede AS 1966.1—1985, *Electric arc welding power sources—Transformer type*, AS 1966.2—1985, *Electric arc welding power sources—Rotary type* and AS 1966.3—1990, *Electric arc welding power sources—Plasma arc cutting and welding types*.

The objective of this Standard is to specify requirements for arc welding power sources designed for professional and industrial use.

This Standard is an adoption with national modifications and has been reproduced from IEC 60974-1:2000, *Arc welding equipment, Part 1: Welding power sources*, including its Amendment 2:2003, and has been varied as indicated to take account of Australian conditions.

Variations to IEC 60974-1:2000 are indicated at the appropriate places throughout this Standard. Strikethrough (~~example~~) identifies IEC text, tables and figures which, for the purposes of this Standard, are deleted. Where text, tables or figures are added, each is set in its proper place and identified by shading (example). Added figures are not themselves shaded, but are identified by a shaded border.

As this Standard is reproduced from an International Standard, the following applies:

- (a) Its number does not appear on each page of text and its identity is shown only on the cover and title page.
- (b) In the source text 'IEC 60947-1' should read 'AS 60947.1'.
- (c) A full point should be substituted for a comma when referring to a decimal marker.
- (d) Any French text on figures should be ignored.

The term 'informative' is used to define the application of the annex to which it applies. An informative annex is only for information and guidance.

## CONTENTS

	<i>Page</i>
1 Scope .....	1
2 Normative references .....	1
3 Definitions .....	2
4 Environmental conditions .....	9
5 Test conditions .....	10
5.1 Type tests .....	10
5.2 Routine tests .....	11
6 Protection against electric shock .....	11
6.1 Insulation .....	11
6.2 Protection against electric shock in normal service (direct contact) .....	16
6.3 Protection against electric shock in case of a fault condition (indirect contact) .....	17
7 Thermal requirements .....	20
7.1 Heating test .....	20
7.2 Temperature measurement .....	21
7.3 Limits of temperature rise .....	22
7.4 Loading test .....	23
7.5 Commutators and slip-rings .....	24
8 Abnormal operation .....	24
8.1 Stalled fan .....	25
8.2 Short circuit .....	25
8.3 Overload .....	25
9 Thermal protection .....	26
9.1 Construction .....	26
9.2 Location .....	26
9.3 Operation .....	26
9.4 Resetting .....	26
9.5 Operating capacity .....	26
9.6 Indication .....	27
10 Connection to the input supply .....	27
10.1 Supply voltage .....	27
10.2 Power supply .....	27
10.3 Means of connection .....	28
10.4 Input supply terminals .....	28
10.5 Cable anchorage .....	29
10.6 Inlet openings .....	30
10.7 Input supply on/off switching device .....	31
10.8 Supply cables .....	32
10.9 Supply coupling device (attachment plug) .....	32
11 Output .....	32
11.1 Rated no-load voltage ( $U_0$ ) .....	32
11.2 Type test values of the conventional load voltage .....	35
11.3 Mechanical switching devices used to adjust output .....	36
11.4 Output connections .....	36
11.5 Power supply to external devices .....	37
11.6 Auxiliary power output .....	37

This is a free preview. Purchase the entire publication at the link below:

[Product Page](#)

- 
- Looking for additional Standards? Visit Intertek Inform Infostore
  - Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation
-