

Dup

Under Review See DR 95393

AS 1674.1—1990

**LOAN COPY**  
INFORMATION CENTRE  
STANDARDS AUSTRALIA

**SUPERSEDED BY:**

AS 1674.1-1997

Australian Standard®

---

**Safety in welding and allied  
processes**

**Part 1: Fire precautions**

---

**STANDARDS AUSTRALIA**



D

This Australian Standard was prepared by Committee WD/4, Welding Safety. It was approved on behalf of the Council of Standards Australia on 12 January 1990 and published on 2 April 1990.

---

The following interests are represented on Committee WD/4:

Amalgamated Metals Foundry and Shipweights' Union  
Australian Assembly of Fire Authorities  
Australian Institute of Occupational Hygienists  
Australian Institute of Petroleum  
Electricity Commission of New South Wales  
Insurance Council of Australia  
Metal Trade Industry Association  
Railways of Australia Committee  
Welding Technology, Institute of Australia  
WorkCover Authority, N.S.W.

Additional interests participating in preparation of Standard:

Companies and consultants involved in the field of welding

---

*Review of Australian Standards.* To keep abreast of progress in industry, Australian Standards are subject to periodic review and are kept up-to-date by the issue of amendments or new editions as necessary. It is important therefore that Standards users ensure that they are in possession of the latest edition, and any amendments thereto.

Full details of all Australian Standards and related publications will be found in the Standards Australia Catalogue of Publications; this information is supplemented each month by the magazine 'The Australian Standard', which subscribing members receive, and which gives details of new publications, new editions and amendments, and of withdrawn Standards.

Suggestions for improvements to Australian Standards, addressed to the head office of Standards Australia, are welcomed. Notification of any inaccuracy or ambiguity found in an Australian Standard should be made without delay in order that the matter may be investigated and appropriate action taken.

---

Australian Standard®

---

**Safety in welding and allied  
processes**

**Part 1: Fire precautions**

---

First published as SAA Int.201—1945.  
Revised and redesignated AS CB19—1963.  
AS CB19 revised and redesignated AS 1674—1974.  
Second edition 1980.  
AS 1674 revised and redesignated AS 1674.1—1990.

## PREFACE

This Standard was prepared by the Standards Australia Committee on Welding Safety to supersede AS 1674—1980, *Fire precautions in cutting, heating and welding operations*.

This edition incorporates substantial changes from AS 1674—1980. Major changes include the following:

- (a) The term 'hot work' has been substituted for 'cutting, heating and welding', to encompass other fire-producing operations such as grinding.
- (b) The term 'hazardous area' has been defined, and a clear distinction has been made between the requirements for hot work in general locations and those in hazardous areas.
- (c) The requirement for appointing a Responsible Officer has been limited to hot work in hazardous areas only, as it has been shown to be impracticable or unnecessary to appoint a Responsible Officer to be accountable for hot work in other areas.
- (d) The requirements of equipment and fire prevention have been up-dated and extended.
- (e) The section dealing with special situations has been deleted since it was noted that the relevant requirements are redundant and partly covered in other sections.
- (f) A new appendix giving guidelines for hot work in hazardous areas has been included.

Measures for the protection of operators against electric shock, asphyxiation, poisoning, and other hazards are not covered in this Standard, nor does it deal with protective clothing. General information on safety in welding is covered in the Welding Technology Institute of Australia's Technical Note 7, *Safety in Welding*.

This Standard, although primarily oriented to hot work as related to welding and allied processes, could generally be applied to other means of ignition sources in hazardous areas.

© Copyright — STANDARDS AUSTRALIA

Users of Standards are reminded that copyright subsists in all Standards Australia publications and software. Except where the Copyright Act allows and except where provided for below no publications or software produced by Standards Australia may be reproduced, stored in a retrieval system in any form or transmitted by any means without prior permission in writing from Standards Australia. Permission may be conditional on an appropriate royalty payment. Requests for permission and information on commercial software royalties should be directed to the Head Office of Standards Australia.

Standards Australia will permit up to 10 percent of the technical content pages of a Standard to be copied for use exclusively in-house by purchasers of the Standard without payment of a royalty or advice to Standards Australia.

Standards Australia will also permit the inclusion of its copyright material in computer software programs for no royalty payment provided such programs are used exclusively in-house by the creators of the programs.

Care should be taken to ensure that material used is from the current edition of the Standard and that it is updated whenever the Standard is amended or revised. The number and date of the Standard should therefore be clearly identified.

The use of material in print form or in computer software programs to be used commercially, with or without payment, or in commercial contracts is subject to the payment of a royalty. This policy may be varied by Standards Australia at any time.

## CONTENTS

	<i>Page</i>
<b>SECTION 1. SCOPE AND GENERAL</b>	
1.1 SCOPE ....	4
1.2 APPLICATION ....	4
1.3 REFERENCED DOCUMENTS ....	4
1.4 DEFINITIONS ....	4
<b>SECTION 2. GENERAL PRECAUTIONS</b>	
2.1 GENERAL ....	5
2.2 HAZARDOUS AREAS ....	5
2.3 CONFINED SPACES ....	5
2.4 INSPECTION OF SITE ....	5
2.5 LOCATION OF HOT WORK ....	5
2.6 WELDING WORKSHOPS ....	5
2.7 DISPOSAL OF WORK OFF-CUTS AND ELECTRODE STUBS	5
2.8 PROTECTION OF TIMBER ....	5
2.9 PROTECTION OF ROPE ....	5
2.10 PROTECTION OF OTHER MATERIALS ....	5
2.11 PRECAUTIONS AGAINST GRASS AND BUSHFIRE S	5
2.12 PROTECTIVE GUARDS ....	5
<b>SECTION 3. HOT WORK IN HAZARDOUS AREAS</b>	
3.1 GENERAL ....	6
3.2 APPOINTMENT OF RESPONSIBLE OFFICER ....	6
3.3 PRECAUTIONS BEFORE PERFORMING HOT WORK ....	6
3.4 HOT WORK PERMIT ....	6
3.5 COMMENCEMENT OF HOT WORK ....	6
3.6 CONDUCT OF WORK ....	6
<b>SECTION 4. HOT WORK EQUIPMENT</b>	
4.1 ARC CUTTING AND WELDING EQUIPMENT ....	7
4.2 GAS CUTTING, HEATING, AND WELDING EQUIPMENT	7
4.3 LIGHTING OF BLOWPIPES ....	7
4.4 GRINDING MACHINES ....	7
4.5 POWER OPERATED EQUIPMENT ....	7
4.6 LIGHTNING AND EXTENSION LEADS ....	7
4.7 ELECTRICAL PROTECTION ....	7
<b>SECTION 5. FIRE PROTECTION</b>	
5.1 GENERAL PROVISIONS FOR FIRE PROTECTION ....	7
5.2 HOT WORK ON OR NEAR FIXED FIRE PROTECTION	7
INSTALLATIONS ....	7
5.3 FINAL INSPECTION ....	7
<b>SECTION 6. PRECAUTIONS AFTER OCCURRENCE OF FIRE</b>	
6.1 REPORTING OF FIRE ....	8
6.2 AFTER-FIRE PRECAUTIONS ....	8
<b>APPENDICES</b>	
A GUIDELINES FOR HOT WORK IN HAZARDOUS AREAS ....	9
B RECOMMENDED PROCEDURES FOR THE PREPARATION	12
FOR HOT WORK ON EQUIPMENT WHICH HAS HELD	12
FLAMMABLE OR EXPLOSIVE SUBSTANCES ....	12
C TYPICAL FORM FOR A HOT WORK PERMIT ....	14

## STANDARDS AUSTRALIA

## Australian Standard

## Safety in welding and allied processes

## Part 1: Fire precautions

## SECTION 1. SCOPE AND GENERAL

**1.1 SCOPE.** This Standard relates to the minimum precautions required to be taken prior to and during welding and allied processes (herein after referred to as 'hot work') to prevent the possibility of fire or explosion which may result in harm to persons or property.

**1.2 APPLICATION.** The Standard applies to hot work during manufacturing, construction, maintenance, repairs, or demolition operations. It also applies to hot work on plant or equipment which has contained flammable combustible or explosive material.

**1.3 REFERENCED DOCUMENTS.** The following documents are referred to in this Standard:

AS	
1020	The control of undesirable static electricity
1596	SAA LP Gas Code
1851	Maintenance of fire protection equipment
1851.1	Part 1: Portable fire extinguishers
1851.3	Part 3: Automatic fire sprinkler systems
1940	SAA Flammable and Combustible Liquids Code
2118	SAA Code for Automatic Fire Sprinkler Systems
2275	Combustible gas detection instruments for use in explosive atmospheres
2275.1	Part 1: General requirements for explosion protection of electrical apparatus and systems
2275.2	Part 2: Performance requirements
2430	Classification of hazardous areas
2430.1	Part 1: Explosive atmospheres
2430.2	Part 2: Combustible dusts
2430.3	Part 3: Specific occupancies
2745	Electrical welding safety
2812	Welding, brazing and cutting of metals—Glossary of terms
2865	Safe working in a confined space
3190	Approval and test specification for current-carrying (core balance) earth-leakage devices
SAA	
IP2	Portable fire extinguisher selection chart

**1.4 DEFINITIONS.** For the purpose of this standard, the definitions given in AS 2812 and those below apply:

**1.4.1 Approved or approval**—'approved by' or 'approval of' the authority concerned.

**1.4.2 Shall**—indicates that a statement is mandatory.

**1.4.3 Should**—indicates a recommendation.

**1.4.4 Responsible Officer**—a person with a satisfactory knowledge of the fire explosion and toxicity hazards associated with hot work in hazardous areas and adequately trained and experienced in the testing procedures and precautions necessary for the elimination of any risk involved.

**1.4.5 Hazardous area**—an area in which flammable liquids, vapours, or gases, combustible liquids, dusts, fibres, or other flammable or explosive substances may be present.

## NOTES:

- Such hazardous areas may be found in the following locations (the list is not exhaustive) where such liquids, vapours, gases, dusts, fibres, or other substances are manufactured, used, handled or stored:
  - Celulose nitrate plastics manufacturing plants.
  - Distilleries and plants producing alcohol.
  - Dry-cleaning and dry-dyeing plants.
  - Flammable gas plants.
  - Locations in which explosives, including pyrotechnics, are manufactured, used, handled, or stored.
  - Plants manufacturing, storing, or handling petroleum products.
  - Plants producing industrial alcohol.
  - Spray painting establishments.
  - Varnish manufacturing plants.
  - Paint manufacturing plant.
  - Paper manufacturing and storage.
  - Clothing manufacturing plants.
  - Combustible fibre manufacturing plants.
  - Cotton and other textile mills.
  - Cotton gins, cotton seed mills.
  - Plastics manufacturing plant and warehouses.
  - Sawmills and woodworking plants.
  - Warehouses for cotton (including cotton linters and cotton waste), sisal or henequen, jute, hemp, tow, cocoa fibre, oakum, baled waste, kapok, spanish moss, excelsior, and other similar materials.
  - Coal pulverizing plants.
  - Conveyor belts and associated structures where coal, wheat, or other combustible materials are handled.
  - Flour mills, grain elevators, starch plants.
- AS 1940 and AS 1596 specify minimum distances from sources of flammable and combustible liquids and gases to ignition points.
- Further information on hazardous areas is to be found in AS 2430.1, AS 2430.2 and AS 2430.3.
- A normally safe area, into which a tank, container, or equipment containing flammable or combustible liquids, gases, or vapours has been brought, may become a hazardous area.

**1.4.6 Hot work**—welding, thermal or oxygen cutting or heating, and other related heat-producing or spark-producing operations.