

AS 1558—1973

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Australian Standard 1558—1973

PROTECTIVE CLOTHING FOR WELDERS

METRIC UNITS



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Associated Chambers of Manufactures of Australia
Australian and New Zealand Railways Conferences
Australasian Institute of Mining and Metallurgy
Australian Medical Association
Australian Welding Institute
Bureau of Steel Manufacturers
Cement and Concrete Association of Australia
Commonwealth Department of Health
Commonwealth Department of Labour
Council of Fire and Accident Underwriters
Electricity Supply Association of Australia
Metal Trades Industry Association of Australia
National Safety Council
Non-tariff Insurance Association of Australia
Royal Australian Chemical Institute
Safety Engineering Society of Australasia
State Departments of Labour and Industry
State Departments of Public Health
The Institution of Engineers, Australia

This standard, prepared by Committee SF/4, Welders and Foundrymens Protective Clothing, under the authority of the Safety Standards Co-ordinating Committee, was approved on behalf of the Council of the Standards Association of Australia on 31 May 1973.

To keep abreast of progress in industry, Australian standards are regularly reviewed. Suggestions for improvement to published standards, are welcomed and should be addressed to the Headquarters of the Association, Sydney.

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AUSTRALIAN STANDARD SPECIFICATION

PROTECTIVE CLOTHING FOR WELDERS

AS 1558—1973

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AMENDMENT No 1
to
AS 1558—1973
PROTECTIVE CLOTHING FOR WELDERS

SUMMARY: The following sections of this standard are covered in this amendment: Contents; Clauses 1, 2.3, (new) 2.4, 4.1, 4.6; (new) Appendix B.

Page 3. Contents.

Delete '2.3 Other Textile Material' and *substitute* '2.3 Treated Wool'.

Add new clause '2.4 Other Textile Material'.

Add new entry 'Appendix B—Treated Wool Fabric'.

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Page 4. Clause 1.

Insert 'treated wool' between 'asbestos fabric' and 'or textile materials'.

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Page 5. Clause 2.3.

Delete existing Clause 2.3 and *substitute*:

2.3 Treated Wool Fabric.

2.3.1 Combustion characteristics. Treated wool fabric 'used in welders' protective clothing, other than for a lining material, shall have the following combustion characteristics:

- (a) When tested by the method described in AS 1176, Part 1*, it shall have an ignition time greater than 10 s.
- (b) When tested by the method described in AS 1176, Part 2*, no specimen shall have a char length greater than 30 mm.

2.3.2 Fibre characteristics and strength characteristics. Treated wool used in welders' protective clothing, other than for lining material, shall have fibre characteristics and strength characteristics appropriate to the application.

NOTES:

1. Treated wool having the characteristics set out in Appendix B has been found in field tests to provide reasonable protection against spatter and molten metal, and would therefore be suitable for protective clothing used for welding purposes.
However in situations where spatter falls repeatedly on the garments in localized areas, e.g. during overhead welding, reinforcement of the material with leather may be advisable.
2. Standards for industrial clothing for protection against heat and flame and for clothing for protection against intense heat for short periods are in the course of preparation.

*AS 1176, Methods of Test for Combustion Characteristics of Textile Materials: Part 1—Method for the Determination of Ease of Ignition; Part 2—Method for the Determination of Burning Time and Heat Output; Part 3—Method for the Determination of Surface Burning Properties.

Page 5. New Clause 2.4.

Add a new Clause 2.4 as follows:

2.4 Textile Materials. Textile materials used for the lining of welders' protective clothing shall be representative of the type of clothing worn for the proposed application and shall comply with the following requirements:

- (a) When tested by the methods described in AS 1176, Parts 1, 2 and 3, the materials shall have—
 - (i) an ignition time of not less than 6 s;
 - (ii) a burning time of not less than 18 s with no one test result less than 16 s;
 - (iii) a surface burning time on both surfaces of not less than 10 s.
- (b) The materials shall comply with this specification both before and after being subjected to the washing procedure described in Appendix C of AS 1176, Parts 1 to 3.
- (c) Fabrics which melt or drip shall not be used for the lining of welders' protective clothing.

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Page 6. Clause 4.1.

Insert 'treated wool' between 'basil leather' and 'or asbestos fibre' in line 2.

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Page 8. Clause 4.6.

Delete 'Clause 2.3' and substitute 'Clause 2.4'.

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Page 12. New Appendix B.

Insert new Appendix B as follows:

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APPENDIX B

CHARACTERISTICS OF TREATED WOOL FABRIC

Property	Test	Test method	Requirement
Fibre content	Wool content Wool fibre diameter	—* AS † Representative sample of 300 fibres	Not less than 95 percent Mean diameter $22 \pm 2 \mu\text{m}$
Construction	Methods for measurement of textile fabrics	AS 1587‡, Method 4B AS 1587, Method 3	Mass not less than 680 g/m^2 Thickness less than 2.3 mm
Strength	Determination of breaking load and extension of woven textile fabrics	AS L6§	Warp: not less than 540 N Weft: not less than 490 N
Acidity	pH of aqueous extract	AS 2001.3.1** Test C	Not less than 3

*A suitable test method would be IWS TM 155.

†In course of preparation; to be AS 2001.2.1, Methods of Test for Textiles, Part 2—Physical Tests—Determination of Mean Fibre Diameter of Wool by the Projection Microscope Method.

‡AS 1587, Methods for Measurements of Textile Fabrics.

§AS L6, Method for the Determination of Breaking Load and Extension of Woven Textile Fabrics.

**AS 2001.3.1, Methods of Test for Textiles—Part 3—Chemical Tests—Determination of pH Aqueous Extract.

PREFACE

This standard was prepared by the Association's Committee on Welders and Foundrymen's Protective Clothing under the direction of the Safety Standards Co-ordinating Committee, in response to requests from industry for a standard setting out minimum requirements for protective clothing for welders.

The standard sets out specific requirements for jackets, sleeves, aprons, spats, leggings and caps. A method of test for corrosion of metal components is given in an appendix.

The flammability of textiles used for lining and caps and the methods of test should comply with AS 1248, Fabrics described as of Low Flammability.

Having regard to the serious health hazards which are associated with the inhalation of asbestos dust over long periods of time it would be prudent for welders and other industrial workmen to only use dust-suppressed type asbestos and wherever possible to substitute other heat-resistant materials.

Slide fasteners are not recommended as a means of closure in these garments because of the possibility of the fastener becoming jammed. Any fastening used must be easy to open. Provision is made for wide overlap of the jacket fastened down the front, which prevents the entry of sparks should the jacket open out in use between the fastening points.

This standard may require reference to the following standards:

AS 1248 Fabrics described as of Low Flammability.

BS 1309 Sampling and Analysis of Vegetable-tanned and Chrome-tanned Leathers.

BS 3144 Sampling and Physical Testing of Leather.