



Knitted and woven sheet fabrics

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This Australian Standard® was prepared by Committee TX-008, Textiles for Horticulture and Agriculture. It was approved on behalf of the Council of Standards Australia on 23 January 2018.

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- Australian Industry Group
 - Australian Radiation Protection and Nuclear Safety Agency
 - AWTA Product Testing
 - CSIRO
 - Department of Health and Human Services Victoria
 - Engineers Australia
 - Specialised Textiles Association
 - University of New South Wales
-

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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 the public comment period.

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Australian Standard®

Knitted and woven shade fabrics

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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee TX-008, Textiles for Horticulture and Agriculture, to supersede AS 4174—1994, *Synthetic shadecloth*.

After consultation with stakeholders in both countries, Standards Australia and Standards New Zealand decided to develop this Standard as an Australian Standard rather than an Australian/New Zealand Standard.

The objective of this Standard is to provide requirements for the classification, performance and labelling of knitted and woven shade fabrics for horticultural and human protection uses.

Requirements for horticultural and human protection uses, are set out in separate sections of the Standard.

The following two aspects of this Standard were originally developed from a document for the supply of synthetic shade fabric initiated by the Australian shade fabric industry in 1985:

- (a) Measurement of the cover factor of a shade fabric using a standard instrument.
- (b) Cover factor ranges for different categories of shade fabric.

The terms ‘normative’ and ‘informative’ have been used to define the application of the appendices to which they apply. A ‘normative’ appendix is an integral part of a Standard, whereas an ‘informative’ appendix is only for information and guidance.

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FOREWORD

When shade fabric is to be used for human protection purposes, such as shade structures, the calculated UVE results do not take into account important factors that may decrease the effective UVE, such as design features, height and size of the shade structure, the distance of the shade fabric from the subjects, the effect of direct and indirect solar UVR and the physical location of the subjects within the shade structure.

For this reason, the UVE value determined for the classification of the fabric does not indicate the actual reduction of solar radiation by a structure incorporating that fabric. A warning statement to this effect has been specified for inclusion on the labelling of fabric to be used for human protection purposes.

Evaluation by ultraviolet protection factor (UPF), in accordance with AS/NZS 4399, *Sun protection clothing—Evaluation and classification*, is not appropriate for shade fabrics for horticultural and human protection uses.

STANDARDS AUSTRALIA

Australian Standard
Knitted and woven shade fabrics

SECTION 1 SCOPE AND GENERAL

1.1 SCOPE

This Standard specifies requirements for the classification, performance and labelling of knitted and woven shade fabrics for horticultural and human protection applications.

Requirements include the following:

- (a) Measurement of the cover factor of a shade fabric using a standard instrument. (For horticultural applications.)
- (b) Cover factor ranges for different categories of shade fabric. (For horticultural applications.)
- (c) Minimum strength requirements for shade fabric both before and after a set period of exposure to light.
- (d) A method for the determination of transmittance of ultraviolet and visible radiation.
- (e) A method for the measurement and calculation of ultraviolet effectiveness (UVE). (For human protection applications.)
- (f) Methods for the calculation of the average percentage transmittance, the shade factor, the average percentage UVR transmittance, the percentage UVR block and the average percentage PAR transmittance. (For horticultural applications.)
- (g) A method for the determination of resistance to degradation by light in Appendix C.
- (h) Determination of mass per unit area.
- (i) Determination of solar radiation transmittance.
- (j) Determination of flammability properties.
- (k) Labelling requirements.

NOTE: Guidelines to assist in designing shade structures can be found in Appendix F.

1.2 APPLICATION

This Standard specifies performance requirements for shade fabric, for horticultural and human protection uses.

For horticultural shade fabric, the requirements of Section 2 apply.

For human shade protection fabric, the requirements of Section 3 apply.