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Amendment 1 – July 1982

AS 2324 — 1979
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Australian Standard 2324–1979

PVC FILM AND SHEETING (FLEXIBLE, UNSUPPORTED, CALENDERED)

**[Title allocated by Defence Cataloguing Authority:
PLASTICS SHEET AND STRIP (FLEXIBLE PVC)]**

STANDARDS ASSOCIATION OF AUSTRALIA
Incorporated by Royal Charter

THE FOLLOWING SCIENTIFIC, INDUSTRIAL AND GOVERNMENTAL ORGANIZATIONS and departments were officially represented on the committee entrusted with the preparation of this standard:

Australian Council of Furniture Manufacturers

Confederation of Australian Industry

Department of Health

Packaging Council of Australia

Plastics Institute of Australia Incorporated

This standard, prepared by Committeee PL/7, PVC Film and Sheet, was approved by the Plastics Standards Board on behalf of the Council of the Standards Association of Australia on 10 September 1979, and was published on 31 December 1979.

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Amendment No 1
to
AS 2324—1979
PVC FILM AND SHEETING (FLEXIBLE, UNSUPPORTED, CALENDERED)

CORRECTION

SUMMARY: This amendment applies to Appendix K, Paragraph K4 (a).

Published on 12 July 1982.

AUSTRALIAN STANDARD

PVC FILM AND SHEETING (FLEXIBLE, UNSUPPORTED, CALENDERED)

AS 2324—1979

First issued (AS K124)	1961
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PREFACE

This standard was prepared by the Association's Committee on PVC Film and Sheet, under the direction of the Plastics Standards Board, as a revision and metrication of AS K124—1961 and AS K139—1965, both of which it accordingly supersedes. Early in its work the committee considered that it would be advantageous to combine the two standards into a single standard for PVC film and sheeting.

Film is defined in the standard as having thickness up to and including 0.4 mm (400 μm) and sheeting as having thickness in the range greater than 0.4 mm up to and including 1.0 mm. The film and sheeting have been classified into three types, viz soft, medium and semi-rigid, the basis being plasticizer content and hardness.

Film complying with this standard is intended for use in applications such as rainwear, metal laminates, decorative cladding, stationery and general purpose packaging, while sheeting is considered suitable for use in such areas as pool liners and furniture. PVC used in film and sheeting intended for food packaging is not covered by this standard, but must comply with AS 2070, Plastics Materials for Food Contact Use, Part 2—Polyvinyl Chloride (PVC) Compound.

During the preparation of this standard, account was taken of the requirements of BS 1763, Thin PVC Sheeting (Calendered, Flexible, Unsupported), and of BS 2739, Thick PVC Sheeting (Calendered, Flexible, Unsupported). Consideration was also given to the inclusion of flame-retardant grades. However, as PVC film and sheeting are generally intermediate products destined for further processing, the required levels of flame retardancy are very much dependent on the end application. In this respect, as suitable criteria would be very difficult to establish, combined with the selection of an appropriate test method, it was decided not to include requirements for this characteristic.

This standard may require reference to the following standards:

AS 1152	Test Sieves
AS 1177	Method for Determining the Colourfastness of Textiles Part 2 — Colourfastness to Light — Daylight
AS 1193	Methods for the Determination of the Density and Relative Density of Plastics, Excluding Cellular Plastics
AS 1199	Sampling Procedures and Tables for Inspection by Attributes
AS 1327	Standard Environments for Conditioning and Testing Plastics Materials
AS 1399	Guide to AS 1199, Sampling Procedures and Tables for Inspection by Attributes
AS 1878	Laundry Tablet or Bar Soap
AS 2103	Dial Gauges and Dial Test Indicators
AS 2193	Methods for Calibration and Grading of Force-measuring Systems of Testing Machines
AS B83	Gauge Blocks and their Accessories
AS CK24	Code of Practice for Outdoor Weathering of Plastics in the Australian Environment Part 1 — Commercial Products
AS L15	Methods for Determining the Colourfastness of Textiles Part I — General Principles of Testing: Use of Grey Scales
AS ....*	Method of Exposure of Plastics to Ultraviolet Lamps
BS 2782	Methods of Testing Plastics
ASTM D1424	Test for Tear Resistance of Woven Fabrics by Falling-pendulum (Elmendorf) Apparatus

* In course of preparation.

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STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard
for
PVC FILM AND SHEETING (FLEXIBLE, UNSUPPORTED, CALENDERED)

SECTION 1. SCOPE AND GENERAL

1.1 SCOPE. This standard specifies requirements for—

(a) flexible, unsupported calendered PVC film in the nominal thickness range up to and including 0.4 mm (400 μm); and

(b) flexible, unsupported, general purpose PVC sheeting in the nominal thickness range greater than 0.4 mm up to and including 1.0 mm.

1.2 CLASSIFICATION.

1.2.1 Types. Film and sheeting shall be classified into types as 'Soft', 'Medium' or 'Semi-rigid' in accordance with Table 1.1. These three types are defined in terms of plasticizer content, expressed as parts by mass of di-*iso*-octyl phthalate (DIOP) per hundred parts of resin (p.h.r.).

NOTE: It is recognized that plasticizers other than DIOP are used in calendered film and sheeting, that not all plasticizers have the same effect on physical properties as has DIOP, and that other additives also influence physical properties. For this reason, British Standard Softness, determined in accordance with BS 2782, Part 3, Method 307A (1970), may be used as an alternative, expedient method of determining film and sheet classification.

TABLE 1.1
CLASSIFICATION OF FILM AND SHEETING

Film and sheeting types	Classification defined in terms of DIOP content	British Standard softness equivalent
Soft	Greater than 50 p.h.r.	Greater than 38 p.h.r.
Medium	Greater than 32 p.h.r. up to and including 50 p.h.r.	Greater than 8 p.h.r. up to and including 38 p.h.r.
Semi-rigid	20 p.h.r. to 32 p.h.r. incl.	1 p.h.r. to 8 p.h.r. incl.

1.2.2 Designation of Weatherability. Film and sheeting intended to be suitable for outdoor applications shall have the additional designation 'W' after the type classification.

Any claim of life expectancy for film or sheeting designated 'W' shall be limited to the number of years that the film or sheeting has actually been exposed in accordance with AS CK24, Part 1, with a minimum period of 2 years. Such claims shall be worded as follows:

'This film or sheeting (as appropriate) of Type — W (to be inserted) complies with the requirements of AS 2324, PVC Film and Sheeting, having been exposed for .... years (number to be inserted) in accordance with AS CK24, Part 1'.

Once a particular product has complied with the above requirements, minor changes in components or product construction may be made without re-establishing compliance, provided that the new product complies with the requirements of Clause 2.19.

NOTE: A minor change is defined as one which will not alter the durability and performance of the product.

1.3 DEFINITIONS. For the purpose of this standard, the following definitions apply:

Film — flexible, unsupported PVC film in the nominal thickness range up to and including 0.4 mm (400 μm).

Sheeting — flexible, unsupported PVC sheeting in the nominal thickness range greater than 0.4 mm (400 μm) up to and including 1.0 mm.

Nominal thickness — the thickness of the film or sheeting as stated by the manufacturer.

Gravimetric thickness — the value of thickness derived from the mass of a known area of film or sheeting and its specific gravity.

Micrometer thickness — the value of thickness determined by direct measurement using a micrometer gauge.

Printed film or sheeting — film or sheeting to which a continuous or discontinuous transparent or coloured surface coating has been applied and including all multitone effects and lacquered surfaces.

Embossed film or sheeting — film or sheeting in which a repeat pattern, in relief, is impressed into any part of the surface of the film or sheeting whether printed or not; also known as textured film or sheeting.

NOTE: Plain frosted (matt) or polished PVC film or sheeting, if produced by an operation subsequent to the calendering process is, by convention, included in this definition.

Laminated film or sheeting — superimposed plies (layers) of single film or single sheeting bonded together by any suitable process.

Roll of film or sheeting — film or sheeting in roll form in continuous lengths.

1.4 COMPOSITION. All film or sheeting shall be manufactured from a homopolymer or a copolymer in which the major constitutent shall be vinyl chloride. Such material shall be suitably compounded and converted by calendering and/or laminating into—

(a) film in the nominal thickness range up to and including 0.4 mm (400 μm); or

(b) sheeting in the nominal thickness range greater than 0.4 mm up to and including 1.0 mm, as applicable.