

Australian/New Zealand Standard™

Webbing for restraining devices for occupants of motor vehicles



AS/NZS 1753:2015

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Webbing for restraining devices for occupants of motor vehicles

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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee CS-085, Child Restraints for Use in Motor Vehicles, to supersede AS 1753—1990 and NZS 5432:1990.

The objective of this Standard is to provide manufacturers with requirements for webbing intended for restraining devices for occupants of motor vehicles.

As part of the revision, the manufacturing requirements have been clarified to require a high temperature dying process and dyed yarn has been excluded as a method of manufacturing webbing. The high temperature dying process provides more consistent control of the webbing characteristics.

The apparatus for determining the resistance of webbing to UV light was reviewed and has been maintained as a carbon arc fading machine on the grounds that test results on polyester webbing have established the equivalence of this type of fading machine and Australian sunlight. There was insufficient evidence to show that the use of a test using Xenon would give the current level of webbing durability.

Requirements from the withdrawn Standard AS 2001.4.1, *Methods of test for textiles*, Method 4.1: *Colourfastness tests—Definitions and general requirements* have been added to Appendix C to maintain the use of method and the use of the blue wool standard for testing webbing for resistance to light.

The term ‘normative’ has been used in this Standard to define the application of the appendix to which it applies. A ‘normative’ appendix is an integral part of a Standard.

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STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

Australian/New Zealand Standard**Webbing for restraining devices for occupants of motor vehicles****1 SCOPE**

This Standard specifies requirements for the manufacturing, performance, marking, and packaging of webbing for restraining devices for occupants of motor vehicles.

NOTE: There may be appropriate applications for this webbing other than for occupants of motor vehicles, but specification of any additional requirements should be considered.

2 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS

1444 Wrought alloy steels—Standard and hardenability (H) series and hardened and tempered to designated mechanical properties

2001 Methods of test for textiles

2001.1 Part 1: Conditioning procedures

2001.4.A02 Method 4.A02: Colourfastness tests—Grey scale for assessing change in colour

2001.4.A03 Method 4.A03: Colourfastness tests—Grey scale for assessing staining

2001.4.B01 Method 4.B01: Colourfastness tests—Determination of colourfastness to daylight of textile materials

2001.4.3 Method 4.3: Colourfastness tests—Determination of colourfastness to rubbing

2001.4.E04 Method 4.E04: Colourfastness tests—Determination of colourfastness to perspiration

2193 Calibration and classification of force-measuring systems

ISO

105 Textiles—Tests for colour fastness

105-B01 Part B01: Colour fastness to light: Daylight

US Federal Test Method Standard

191A Textile test methods

Method 5660 Colourfastness to light of textile materials; accelerated method

NOTE: Available from the SAI Global website.

3 DEFINITIONS

For the purpose of this Standard, the definitions below apply.

3.1 Elongation

The increase in length (extension) of the material expressed as a percentage of the original length.

3.2 Hysteresis

Loss of elasticity when the webbing is stretched and then allowed to recover its original length when the load is removed.

3.3 Thermosol

A process involving a continuous method of dyeing with disperse dye with the dyeing process being performed at high temperature, i.e. around 180–220°C, in a close vessel with the dyeing time being carefully controlled to retain required webbing strength.

3.4 Webbing

A component of woven construction which has properties to attenuate deceleration forces.

4 CLASSIFICATION AND DESIGNATION

Webbing shall be classified according to width and minimum dry breaking force as follows:

- (a) Width:
 - (i) ≥ 19 mm < 23 mm designator A.
 - (ii) ≥ 23 mm < 34 mm designator B.
 - (iii) ≥ 34 mm < 46 mm designator C.
 - (iv) ≥ 46 mm < 76 mm designator D.
- (b) Minimum dry breaking force:
 - (i) ≥ 3 kN designator 3.
 - (ii) ≥ 7 kN designator 7.
 - (iii) ≥ 11 kN designator 11.
 - (iv) ≥ 13 kN designator 13.
 - (v) ≥ 16 kN designator 16.
 - (vi) ≥ 22 kN designator 22.

Example of designation Webbing having a width of 36 mm and a minimum dry breaking force of 8 kN is designated Class C7. (Such webbing could also be used in applications specifying Class C3.)

5 MANUFACTURING REQUIREMENTS

Webbing shall be manufactured from high tenacity polyester fibre, and all threads shall be lock-joined or otherwise secured in the weave. Where the weave is produced on a shuttleless loom, a locking thread shall be incorporated on the knitted edge. Woven webbing shall be dyed using a high temperature dyeing process, such as a thermosol or similar process to achieve the performance requirements of Clause 6. Dope-dyed fibre shall not be used for webbing manufactured to this Standard.

NOTE: The suitability of high temperature dyed polyester webbing has been established for Australian and New Zealand conditions over many years of use.

6 PERFORMANCE REQUIREMENTS

6.1 Width

When determined by laying the webbing without tension on a flat smooth surface, the maximum and minimum width of the webbing measured to the nearest millimetre shall be within the range appropriate to the class of the webbing (see Clause 4).

6.2 Dry breaking force

When determined in accordance with Appendix A, the maximum force applied to break the webbing shall be not less than the minimum dry breaking force appropriate to the class of the webbing (see Clause 4).

6.3 Width change under force

When the webbing is tested in accordance with Appendix A using the test force appropriate to the class of webbing, the width change for each specimen shall be not more than 2 mm.

6.4 Wet breaking force of webbing made from other types of fibre (see Clause 5 Note)

When determined in accordance with Appendix A, the maximum force applied to break the webbing when wet shall be not less than the minimum dry breaking force appropriate to the class of the webbing (see Clause 4).

NOTE: This requirement does not apply to polyester fibre which does not lose strength when wet.

6.5 Elongation and hysteresis

When determined in accordance with Appendix B using a test force appropriate to the class of the webbing—

- (a) the hysteresis value shall be not less than 60%; and
- (b) the elongation shall be not less than 5% and not more than 25%.

6.6 Colourfastness to rubbing

When determined in accordance with AS 2001.4.3, the minimum rating for staining on undyed cotton cloth shall be No. 4 using the method as specified in AS 2001.4.A03.

6.7 Colourfastness to perspiration

When determined in accordance with the perspiration tester test method of AS 2001.4.E04, the minimum rating for staining shall be No. 4 using the method as specified in AS 2001.4.A03.

6.8 Colourfastness to light

When determined in accordance with Appendix C for either daylight exposure or artificial light exposure, the final numerical rating for colour change shall be not less than 6.

6.9 Resistance to light degradation

When the webbing is tested in accordance with Appendix C for either daylight exposure or artificial light exposure, the webbing shall retain 70% of its mean dry breaking force or 80% of the minimum dry breaking force appropriate to the class of the webbing (see Clause 4), whichever is greater.

NOTES:

- 1 Testing under daylight exposure is the referee method for resolution of any dispute.
- 2 Tests have indicated that for webbing materials, other than polyester, there is insufficient correlation between resistance to artificial light and resistance to daylight for the artificial light test to be used as a measurement of resistance to degradation by daylight.

6.10 Resistance to abrasion

When determined in accordance with Appendix D, the mean dry breaking force of the abraded specimens shall be not less than 80% of the mean dry breaking force of the unabraded specimens.

7 SPECIMENS FOR TESTING

The number of specimens subjected to each test shall be as given in Table 1. All tests shall be made on samples of full webbing width.