

AS 3871.5—1994  
IEC 94-5:1988

Australian Standard<sup>®</sup>

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**Magnetic tape sound recording  
and reproducing systems**

**Part 5: Electrical magnetic tape  
properties**

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This Australian Standard was prepared by Committee TE/8, Audio and Video Engineering and Recording. It was approved on behalf of the Council of Standards Australia on 21 July 1994 and published on 17 October 1994.

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Department of Transport (Commonwealth)  
Federation of Australian Commercial Television Stations  
Federation of Australian Radio Broadcasters  
Institution of Radio and Electronics Engineers, Australia  
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## PREFACE

This Standard was prepared by the Standards Australia Committee TE/8 on Audio and Video Engineering and Recording. It is identical with and has been reproduced from IEC 94-5:1988, *Magnetic tape sound recording and reproducing systems, Part 5: Electrical magnetic tape properties*.

This Standard is one of a series which deals with magnetic tape sound recording and reproducing systems. The series is arranged as follows:

## AS

- 3871 Magnetic tape sound recording and reproducing systems
- 3871.1 Part 1: General conditions and requirements
- 3871.2 Part 2: Calibration tapes
- 3871.3 Part 3: Methods of measuring the characteristics of recording and reproducing equipment for sound on magnetic tape
- 3871.4 Part 4: Mechanical magnetic tape properties
- 3871.5 Part 5: Electrical magnetic tape properties
- 3871.6 Part 6: Reel-to-reel systems
- 3871.7 Part 7: Cassette for commercial tape records and domestic use
- 3871.8 Part 8: Eight-track magnetic tape cartridge for commercial tape records and domestic use
- 3871.9 Part 9: Magnetic tape cartridge for professional use
- 3871.10 Part 10: Time and address codes
- 3871.11 Part 11: Address code for compact cassettes

Statements expressed in mandatory terms in notes to tables and figures are deemed to be requirements of this Standard.

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For the purpose of this Standard, the source text should be modified as follows:

- (a) *Terminology* The words 'this Australian Standard' should replace the words 'this International Standard' wherever they appear.
- (b) *References* The references to international Standards should be replaced by references, where appropriate, to the following Australian or Joint Australian/New Zealand Standards:

| <i>Reference to International Standard or other publication</i>    | <i>Australian or Joint Australian/New Zealand Standard</i>           |
|--|--|
| IEC  | AS   |
| 94 Magnetic tape sound recording and reproducing systems           | 3871 Magnetic tape sound recording and reproducing systems           |
| 94-1 Part 1: General conditions and requirements                   | 3871.1 Part 1: General conditions and requirements                   |
| 94-2 Part 2: Calibration tapes                                     | 3871.2 Part 2: Calibration tapes                                     |
| 94-6 Part 6: Reel-to-reel systems                                  | 3871.6 Part 6: Reel-to-reel systems                                  |
| 94-7 Part 7: Cassette for commercial tape records and domestic use | 3871.7 Part 7: Cassette for commercial tape records and domestic use |
| 94-9 Part 9: Magnetic tape cartridge for professional use          | 3871.9 Part 9: Magnetic tape cartridge for professional use          |

|       |  |        |  |
|-------|--|--------|--|
| IEC   |  | AS     |  |
| 386   | Method of measurement of speed fluctuations in sound recording and reproducing equipment | 3561   | Speed fluctuations in analogue sound recording and reproducing equipment—<br>Method of measurement |
| 651   | Sound level meters   | 1259   | Acoustics—Sound level meters   |
|       |  | 1259.1 | Non-integrating  |
| CCIR  |  |        |  |
| 468-3 | Measurement of audio frequency noise voltage level in sound broadcasting                 | —      |  |

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## AUSTRALIAN STANDARD

**MAGNETIC TAPE SOUND RECORDING AND REPRODUCING  
SYSTEMS**

**Part 5: Electrical magnetic tape properties**

SECTION ONE — GENERAL

1.1 *Scope*

This standard applies to non-perforated magnetic tape used for professional and domestic analogue sound recording and reproduction.

1.2 *Object*

The object of this standard is to list and define the characteristics, methods of measurement and equipment necessary to determine the electrical properties of magnetic tapes. It will also enable users of magnetic tapes to compare the technical product data of different manufacturers, produced in accordance with this standard.

SECTION TWO — TECHNICAL REQUIREMENTS  
AND INFORMATION CONCERNING TESTING CONDITIONS

2.1 *Standard atmospheric conditions*

Ambient temperature  $[ 20 \pm 5 ] ^\circ\text{C}$

Relative humidity  $[ 60 \pm 15 ] \%$

Where necessary the tests shall be preceded by a period of conditioning to ensure that the test specimen has reached equilibrium with the environment.

2.2 *Mechanical characteristics of tape transports*a) *Tape speed*

The tape transports shall be capable of operating at the mandatory rated tape speed specified in Table I.

TABLE I

*Rated tape speeds*

| Tape application                | Speed (cm/s)     |
|---------------------------------|------------------|
| Professional 6.30 mm wide tapes | $38.1 \pm 0.2\%$ |
| Domestic 6.30 mm wide tapes     | $9.53 \pm 0.2\%$ |
| Domestic 3.81 mm wide tapes     | $4.76 \pm 0.2\%$ |

Other tape speeds may be required when additional optional information is given.

The tape speed fluctuations (wow and flutter) shall be not more than 0.15 % when measured in accordance with IEC Publication 386.