

Physical testing of rubber —

**Part A44: Method for determination of
resistance to ozone cracking
(dynamic strain test)**

Committees responsible for this British Standard

The preparation of this British Standard was entrusted to Technical Committee PRI/22, Physical testing of rubber, upon which the following bodies were represented:

- British Railways Board
- British Rubber Manufacturers' Association Ltd.
- GAMBICA (BEAMA Ltd.)
- Malaysian Rubber Producers' Research Association
- Ministry of Defence
- RAPRA Technology Ltd.
- SATRA Footwear Technology Centre
- Coopted member

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National foreword

This Part of BS 903 has been prepared by Technical Committee PRI/22. This revision of Part A44 is identical with ISO 1431-2:1994 *Rubber, vulcanized or thermoplastic — Resistance to ozone cracking — Part 2: Dynamic strain test*, published by the International Organization for Standardization (ISO). This Part of BS 903 supersedes BS 903-A44:1983 which is withdrawn.

The major changes incorporated in this revision are as follows.

- a) Provision has been made for conducting tests, if required, at a velocity of flow of ozonized air of 600 mm/s ± 100 mm/s (see 5.5).
- b) An alternative dumb-bell test piece has been added (see 6.3).
- c) The maximum elongations of (40 ± 2) % and (60 ± 2) % have been added (see 8.4).

WARNING Attention is drawn to the warning in clause 5. The recommendation that 10 pphm be regarded as an absolute maximum concentration in the surrounding atmosphere is in accordance with the value given for long term exposure (8 h TWA, Time Weighted Average, reference period) in Guidance Note EH 40/90 *Occupational exposure limits* published by the Health and Safety Executive, i.e. 0.1 ppm.

NOTE Guidance Note EH 40/90 expresses occupational exposure limits in parts of ozone per million parts of air by volume (ppm). Units of pphm are used throughout this standard since this is normal practice in the rubber industry.
Attention is also drawn to Guidance Note EH 38/83 *Ozone health hazards and precautionary measures*.

Cross-references

International standard	Corresponding British Standard
	BS 903 <i>Physical testing of rubber</i>
ISO 37:1994	Part A2:1995 <i>Determination of tensile stress-strain properties</i> (Identical)
ISO 471:1983	Part A35:1985 <i>Temperatures, humidities and times for conditioning and testing of test pieces</i> (Identical)
ISO 1431-1:1989	Part A43:1990 <i>Determination of resistance to ozone cracking (static strain test)</i> (Identical)
ISO 4661-1:1993	Part A36:1995 <i>Preparation of samples and test pieces</i> (Identical)

It is intended that the international standard for the reference method for estimating the ozone concentration (ISO 1431-3, as referred to in clause 1 and in 5.4), at present in preparation, will be implemented as a British Standard as BS 903-A45. Until the reference method for estimating the ozone concentration is published any suitable titrimetric or instrumental method may be used although it will not be possible to calibrate such methods against the reference method. It is emphasized that details of the method of estimation of ozone concentration should be included in the test report (see item c) 1) clause 11).

Additional information. In UK practice, the standard temperature is 23 °C ± 2 °C (see clause 7) and is commonly referred to as the “standard laboratory temperature”.

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Summary of pages

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This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.