AS 1964—1977

Australian Standard

ORTHODONTIC WIRES (RESILIENT)
(Excluding Precious Metal Wires)

The Dental Materials Committee of the Australian Dental Association has adopted this standard for use in connection with its programme for accreditation of certified dental products, lists of which are published periodically. Enquiries regarding this programme should be addressed direct to the Australian Dental Association. When used in connection with the programme, the standard is known as Australian Dental Standard 1964 (ADS 1964).

[Title allocated by Defence Cataloguing Authority:
WIRE, STEEL, CORROSION RESISTING.]

The following scientific, industrial and governmental organizations and departments were officially represented on the committee entrusted with the preparation of this standard:

Australian Dental Association

Australian Dental Schools

Australian Dental Standards Laboratory

Australian Dental Trade Association

Victorian Chamber of Manufactures

This standard, prepared by Committee DN/11, Orthodontic Materials, was approved on behalf of the Council of the Standards Association of Australia on 3 August 1976, and was published on 1 February 1977.

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PREFACE

This standard was prepared under the authority of the Dental Materials and Equipment Standards Committee as a metrication and revision of AS T32-1965, which it accordingly supersedes. It is one of a series of specifications intended for use in assessing the quality of dental materials used in Australia. The standard is based largely on the work of the Australian Dental Standards Laboratory.

In particular, the standard applies to resilient wires used for orthodontic and other dental purposes. The ranges of the tensile strengths of wires have been modified and enlarged leading to changes in classification. The ranges are now more closely aligned with clinical usage of the materials.

The resistance to failure on twisting test has been eliminated because it is not relevant to clinical practice. The other test methods have been reviewed and updated.

Attention is drawn to the fact that facilities for testing of wires for compliance with this standard are available at the Australian Dental Standards Laboratory, 18 Lonsdale Street, Melbourne, Vic. 3000.

This standard makes reference to the following standards:

AS B128 Methods for the Verification of Testing Machines.

BS 2056 Rust, Acid and Heat Resisting Steel Wire for Springs.

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STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard Specification for ORTHODONTIC WIRES (RESILIENT)

1 SCOPE. This specification applies to corrosion-resistant round, square or rectangular wires having cross-sectional dimensions in the range 0.15 mm to 1.00 mm. Such wires are used for orthodontic and other dental purposes where resilient spring properties are required. It does not apply to wires of precious metals.

2 CLASSIFICATION. The wires shall be classified as Type 1, 2, 3, 4, 5 or 6 on the basis of tensile strength in accordance with Table 1.

TABLE 1

CLASSIFICATION OF WIRES

Type	Tensile strength, MPa	
	min.	max.
1	1720	2240
2	2241	2400
3	2401	2550
4	2551	2700
5	2701	2860
6	2870	—

3 SAMPLING. A separate representative sample totalling at least 3 m in length shall be taken from each batch.

4 CONDITIONING AND TESTING. All test specimens shall be conditioned for a minimum period of 4 h and tested at a temperature of 23 ± 2°C.

5 MATERIAL. The wire shall be made either of an austenitic chromium-nickel stainless steel complying with BS 2056,* or of other alloy not inferior to those steels in resistance to corrosion to fluids commonly found in the mouth.

6 LENGTH OF WIRE. The wire shall be supplied in straight lengths of nominal length between 250 mm and 400 mm or in coils of suitable diameter, which when free, shall lie flat without twisting. The length supplied shall be not less than the nominal length marked on the package.

7 TOLERANCE ON DIMENSIONS.

7.1 Round Wire. The tolerance on the nominal diameter of the wire shall conform to Table 2.

* BS 2056, Rust, Acid and Heat Resisting Steel Wire for Springs.