Revised ANSI/ADA Standard No. 32/ISO 15841:2014
Approved by ANSI: September 2017

Proposed Revised American National Standard/
American Dental Association

Standard No. 32

Orthodontic Wires

Identical adoption of ISO 15841:2014 , *Dentistry — Wires for use in orthodontics*

ADA American Dental Association®

Standards Committee on Dental Products

2018

REVISED AMERICAN NATIONAL STANDARD/AMERICAN DENTAL ASSOCIATION STANDARD NO. 32 FOR ORTHODONTIC WIRES

The ADA Standards Committee on Dental Products (SCDP) has approved Revised ANSI/ADA Standard No. 32 for Orthodontic Wires. This and other standards for dental materials, instruments and equipment are being formulated by working groups of the ADA SCDP. The Committee has representation from all interests in the United States in the standardization of materials, instruments and equipment in dentistry. The Committee has adopted the standards, showing professional recognition of their usefulness in dentistry, and has forwarded them to the American National Standards Institute with a recommendation that the standards be approved as American National Standards. The American National Standards Institute granted approval of ADA Standard No. 32 as an American National Standard on September 12, 2017.

The ADA Standards Committee on Dental Products thanks the members of Working Group 1.7 and the organizations with which they were affiliated at the time the specification was developed:

Jerry Horn (chairman), Individual Representative, San Diego, CA;

Satish Alapati, University of Illinois at Chicago, Chicago, IL;

Michael Bagby, West Virginia University, Morgantown, WV;

William Brantley, Ohio State University, Columbus, OH;

Rella Christensen, Clinicians Report Foundation, Provo, UT;

Scott Erickson, 3M ESPE Dental Products, Saint Paul, MN;

Paul Gange, Reliance Orthodontic Products, Itasca, IL;

Steven Jefferies, Temple University, Philadelphia, PA;

J. R. Kelly, University of Connecticut, Farmington, CT;

Sharukh Khajotia, University of Oklahoma, Oklahoma City, OK;

Do-Gyoon Kim, Ohio State University, Columbus, OH;

Leon Laub, Rocky Mountain Orthodontists, Denver, CO;

Andrew Lichkus, Dentsply International, Inc., York, PA;

Jason Lusk, Bose Corporation, Eden Prairie, MN;

Sheldon Newman, University of Colorado, Aurora, CO;

Robert Riley, Ortho Organizers, Inc., Carlsbad, CA;

Howard Roberts, Individual Representative, Bioxi, MS;

Emile Rossouw, University of Rochester, Rochester, NY; and

Orlando Sarria, Ultimate Wireforms Inc., Bristol, CT.

REVISED AMERICAN NATIONAL STANDARD/AMERICAN DENTAL ASSOCIATION STANDARD NO. 32 FOR ORTHODONTIC WIRES

FOREWORD

(This Foreword does not form a part of Revised ANSI/ADA Standard No. 32 for Orthodontic Wires).

This standard is an identical adoption of ISO 15841:2014, Dentistry – Wires for use in orthodontics. ADA SCDP Working Group No. 1.7 on Orthodontic Products examined the international standard and found it acceptable for identical adoption as revised ANSI/ADA Standard No. 32.

The proposed revision of ANSI/ADA Standard No. 32 for Orthodontic Wires cancels and replaces ANSI/ADA Standard No. 32:2006, which was an identical adoption of ISO 15841:2006.

As with the first edition, the second edition of this standard has been developed to help clinicians compare the wires from different manufacturers and suppliers. In particular, it has been written as a result of the development of new test methods.

Specific qualitative and quantitative test methods for demonstrating freedom from unacceptable biological hazards are not included in this International Standard. For the assessment of possible biological hazards, reference can be made to ANSI/ADA Standard No. 41, ISO 10993 and ISO 7405.

REVISED AMERICAN NATIONAL STANDARD/AMERICAN DENTAL ASSOCIATION STANDARD NO. 32 FOR ORTHODONTIC WIRES

1 Scope

This standard specifies requirements and test methods for wires to be used in fixed and removable orthodontic appliances. It includes preformed orthodontic archwires but excludes springs and other preformed components.

This standard gives detailed requirements concerning the presentation of the physical and mechanical properties of orthodontic wires, the test methods by which they can be determined, and packaging and labelling information.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 1942, *Dentistry — Vocabulary*

ISO 6892-1, *Metallic materials — Tensile testing — Part 1: Method of test at room temperature*

ASTM F2082, *Standard Test Method for Determination of Transformation Temperature of Nickel-Titanium Shape Memory Alloys by Bend and Free Recovery*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 1942 and the following apply.

3.1
austenite-finish temperature
T_{af}
temperature at which the metallurgical transformation from the low-temperature martensite phase to the high-temperature austenite phase is completed

3.2
force deflection rate
F_{Δ}
increment of load to produce a unit increment of deflection in the proportional region, expressed in N/mm (e.g. used in the bend test)

3.3
descriptor
code to identify the nominal dimension(s) in thousandths of an inch without unit designation, in accordance with accepted orthodontic practice

3.4
diagonal
largest cross-sectional dimension of a rectangular wire

NOTE 1 to entry See Figure 1.