



American National Standard/
American Dental Association
Standard No. 134

Metallic Materials for Fixed and Removable Restorations and Appliances

Identical adoption of ISO 22674:2006, *Dentistry — Metallic materials for fixed and removable restorations and appliances*

ADA American
Dental
Association®
Council on
Scientific Affairs

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FOR METALLIC MATERIALS FOR FIXED AND REMOVABLE RESTORATIONS AND APPLIANCES

The Council on Scientific Affairs of the American Dental Association has approved revised American Dental Association Standard No. 134 for Metallic Materials for Fixed and Removable Restorations and Appliances. This and other standards for dental materials, instruments and equipment are being formulated by working groups of the ADA Standards Committee on Dental Products (formerly Accredited Standards Committee MD156 for Dental Materials, Instruments and Equipment). The Committee has representation from all interests in the United States in the standardization of materials, instruments and equipment in dentistry. The Council 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. 134 as an American National Standard on February 19, 2013.

The ADA Standards Committee on Dental Products thanks the members of Working Group 2.13 and the organizations with which they were affiliated at the time the standard was developed:

Clyde Ingersoll (chairman), CEI Enterprises, Ltd., Tonawanda, NY;

Lawrence Gettleman, University of Louisville, KY;

Robert Kelly, UCONN Health Sciences Center, Farmington, CT;

Kenneth Kurtz, Montefiore Medical Center, Bronx, NY;

Spiro Megremis, American Dental Association, Chicago, IL; and

Toru Okabe, Baylor College of Dentistry-Department of Biomaterials Science, Dallas, TX.

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MATERIALS FOR FIXED AND REMOVABLE RESTORATIONS AND APPLIANCES

FOREWORD

(This Foreword does not form a part of ANSI/ADA Standard No. 134 for Metallic Materials for Fixed and Removable Restorations and Appliances).

This first edition of ANSI/ADA Standard No. 134 is an identical adoption of ISO 22674:2006, Dentistry-Metallic materials for fixed and removable restorations and appliances. ADA SCDP Working Group No. 2.13 on Casting Alloys examined the international standard and found it acceptable as an identical adoption.

ANSI/ADA Standard No. 134 provides one performance-based standard having the same requirements for all types of metallic materials for dental restorations and appliances. It replaces the following materials-based ANSI/ADA standards, which have been withdrawn:

- ANSI/ADA Standard No. 5 for Dental Casting Alloys;
- ANSI/ADA Standard No. 14 for Dental Base Metal Casting Alloys.

Requirements for the performance of metals and alloys used for the metallic component of a metal-ceramic restoration contained in this standard supersede such requirements contained in ANSI/ADA Standard No. 38-2000, Metal Ceramic Systems (reaffirmed 2010). The requirements for the performance of ceramic material and the metal-ceramic bond in metal-ceramic restorative systems continue to be specified in ANSI/ADA Standard No. 38.

Specific qualitative and quantitative requirements for freedom from biological hazards are not included in this standard, but it is recommended that, in assessing possible biological hazards, reference be made to ANSI/ADA Standard No. 41, ISO 10993-1 and ISO 7405.

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MATERIALS FOR FIXED AND REMOVABLE RESTORATIONS AND APPLIANCES

1 SCOPE

This standard classifies metallic materials that are suitable for the fabrication of dental appliances and restorations, including metallic materials recommended for use either with or without a ceramic veneer, or recommended for both uses, and specifies their requirements. It further specifies requirements with respect to packaging and marking the products and to the instructions to be supplied for the use of these materials.

This standard does not apply to alloys for dental amalgam, dental brazing materials or metallic materials for orthodontic appliances, e.g., wire, bracket, band and screw.

2 NORMATIVE REFERENCES

The following referenced documents are indispensable for the application of this document. 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 3696:1987, *Water for analytical laboratory use — Standard and test methods*

ISO 6892, *Metallic materials — Tensile testing at ambient temperature*

ISO 7500-1:2004, *Metallic materials — Verification of static uniaxial testing machines — Part 1: Tension/compression testing machines — Verification and calibration of the force-measuring system*

ISO 9513:1999, *Metallic materials — Calibration of extensometers used in uniaxial testing*

ISO 9693, *Metal-ceramic dental restorative systems*

ISO 10271:2001, *Dental metallic materials — Corrosion test methods*

ISO 15223:2000, *Medical devices — Symbols to be used with medical device labels, labelling and information to be supplied*

(ISO Standards are available from the American National Standards Institute, 25 W. 43rd St., New York, NY 10036 or www.ansi.org).

3 TERMS AND DEFINITIONS

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

3.1

base metal

any metallic element with the exception of noble metals and silver

3.2

hazardous element

element that is known for its potential to produce an adverse biological effect

NOTE The presence of such an element (as an alloying addition or as an impurity) in a dental alloy does not imply that the alloy, in itself, is harmful.

3.3

metallic material

material having the properties that are associated with an alloy, noble metal or base metal