



American National Standard/
American Dental Association
Standard No. 134

Metallic Materials for Fixed and Removable Restorations and Appliances

Identical adoption of ISO 22674:2016, *Dentistry — Metallic materials for fixed and removable restorations and appliances*

ADA American
Dental
Association®

Standards Committee on Dental Products

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REVISED AMERICAN NATIONAL STANDARD/AMERICAN DENTAL ASSOCIATION STANDARD NO. 134 FOR METALLIC MATERIALS FOR FIXED AND REMOVABLE RESTORATIONS AND APPLIANCES

The ADA Standards Committee on Dental Products (SCDP) has approved ANSI/ADA 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 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. 134 as an American National Standard on May 18, 2018.

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

Spiro Megremis (chairman), American Dental Association, Chicago, IL;

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**REVISED AMERICAN NATIONAL STANDARD/AMERICAN DENTAL ASSOCIATION
STANDARD NO. 134 FOR METALLIC MATERIALS FOR FIXED AND REMOVABLE
RESTORATIONS AND APPLIANCES**

FOREWORD

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

This standard is an identical adoption of ISO 22674:2016, 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 for identical adoption as ANSI/ADA Standard No. 134. This revision cancels and replaces ADA Standard No. 134:2013.

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Introduction

Specific qualitative and quantitative requirements for freedom from biological hazard are not included in this standard, but it is recommended that, in assessing possible biological hazards, reference be made to ISO 10993-1 and ISO 7405.

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 formerly contained in ISO 9693. The requirements for the performance of ceramic material and the metal-ceramic bond in metal-ceramic restorative systems continue to be specified in ISO 9693-1.

Requirements for the proof stress and minimum elongation after fracture for Type 0 metallic materials are not included in this standard, but it is recommended to adopt the test procedure given in Annex A when measuring these properties. Requirements will be included in a revision of this standard when information becomes available to the appropriate working group.

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1 Scope

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

This standard does not apply to alloys for dental amalgam (ISO 24234), dental brazing materials (ISO 9333), or metallic materials for orthodontic appliances (ISO 15841) (e.g. wires, brackets, bands and screws).

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 3696, *Water for analytical laboratory use — Specification and test methods*

ISO 5832-2, *Implants for surgery — Metallic materials — Part 2: Unalloyed titanium*

ISO 5832-3, *Implants for surgery — Metallic materials — Part 3: Wrought titanium 6-aluminum 4-vanadium alloy*

ISO 6344-1, *Coated abrasives — Grain size analysis — Part 1: Grain size distribution test*

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

ISO 9513, *Metallic materials — Calibration of extensometer systems used in uniaxial testing*

ISO 9693-1, *Dentistry — Compatibility testing — Part 1: Metal-ceramic systems*

ISO 10271:2011, *Dentistry — Corrosion test methods for metallic materials*

ISO 15223-1:2012, *Medical devices — Symbols to be used with medical device labels, labelling and information to be supplied — Part 1: General requirements*

(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 (i. e. gold and metals of the platinum group) and silver