AMERICAN NATIONAL STANDARD/AMERICAN DENTAL ASSOCIATION
SPECIFICATION NO. 97 FOR CORROSION TEST METHODS

FOREWORD

(This Foreword does not form part of the Revised ANSI/ADA Specification No. 97 for Corrosion Test Methods)

This revision is an adoption of the ISO 10271:2001 for Dental Metallic Materials — Corrosion Test Methods. The ADA SCDP Working Group examined the standard and found it acceptable for adoption as ANSI/ADA Specification No. 97.

Additional note to the Foreword for this Reaffirmation:

In 2012, the ADA Standards Committee on Dental Products approved a change in the terminology used for standards. ADA standards will no longer utilize the term Specification; standards will now be named as ADA Standards.

With this notice, this ADA Specification is now termed an ADA Standard. Where the term "specification" is used, it should be considered as "standard." It will be re-named as an ADA Standard in its next revision.

Contents

Page

Introduction

ISO 10271 was developed from the original Technical Report (ISO/TR 10271) as a result of worldwide demand for standard test methods to determine acceptability of metallic materials for oral restorations in relation to corrosion.

The testing of the corrosion behaviour of metallic materials in dentistry is complicated by the diversity of the materials themselves, their applications and the environment to which they are exposed. Variation occurs between devices and within the same device during the exposure time. The type of corrosion behaviour or effect may also vary with exposure time. Accordingly, it is not possible to specify a single test capable of covering all situations, nor is it a practical proposition to define a test for each situation. This specification therefore gives detailed protocols for test methods which have been found to be of merit as evidenced by considerable use.

In addition, an informative annex (annex A) is provided that sets out a protocol for each element of the test system such that a consistent approach may be taken for the development of further test methods. Equally, it is recognized that any element can only represent the current recommendation, but changes in the future are unlikely to change the framework

It is not the purpose of this specification to propose corrosion test methods for specific applications or to set limits as precise as those in the standard relating to the type of product and its application.

Dental metallic materials — Corrosion test methods

1 Scope

This specification provides test methods and protocols to determine the corrosion behaviour of all metallic materials used in restorative, prosthetic and orthodontic dentistry in the oral cavity, including cast, machined and prefabricated devices.

This specification is not applicable to instruments and appliances.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this specification. For dated references, subsequent amendments to, or revisionsof, any of these publications do not apply. However, parties to agreements based on this specification are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest editions of the normative documents referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 1562, *Dental casting gold alloys.*

ISO 3585, *Borosilicate glass 3.3 — Properties*.

ISO 3696:1987, *Water for analytical laboratory use — Specification and test methods*.

ISO 7183-2:1996, *Compressed air dryers — Part 2: Performance ratings.*

ISO 8891, *Dental casting alloys with noble metal content of at least 25 % but less than 75 %.*

ISO 9333, *Dental brazing materials.*

ISO 9693, *Metal-ceramic dental restorative systems.*

3 Terms and definitions

For the purposes of this specification, the following terms and definitions apply.

3.1
breakdown potential
E_p
least noble potential at which pitting or crevice corrosion, or both, will initiate and propagate

3.2
corrosion
physicochemical interaction between a metal or an alloy and its environment that results in a partial or total destruction of the material or in a change of its properties