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American National Standard/
American Dental Association
Specification No. 70

# Dental X-Ray Protective Aprons and Accessory Devices

American Dental Association
Council on Scientific Affairs 1999

## AMERICAN NATIONAL STANDARD/AMERICAN DENTAL ASSOCIATION SPECIFICATION NO. 70 FOR DENTAL X-RAY PROTECTIVE APRONS AND ACCESSORY DEVICES

American Dental Association Specification No. 70 for Dental X-Ray Protective Aprons And Accessory Devices has been approved by the Council on Scientific Affairs of the American Dental Association. This and other specifications for dental materials, instruments and equipment are being formulated by subcommittees of the Accredited Standards Committee MD156 for Dental Materials, Instruments and Equipment. The Council acts as administrative sponsor of that committee, which has representation from all interests in the United States in the standardization of materials, instruments and equipment in dentistry. The Council has adopted the specifications, showing professional recognition of their usefulness in dentistry, and has forwarded them to the American National Standards Institute with a recommendation that the specifications be approved as American National Standards. Approval of ADA specification No. 70 as an American National Standard was granted by the American National Standards Institute on May 19, 1999. This standard becomes effective May 19, 2000.

The Council thanks the working group members and the organizations with which they were affiliated at the time the specification was developed: Stephen R. Matteson (Chairman), University of Texas Health Science Center, San Antonio; Pirkka Nummikoski (Secretary), University of Texas Health Science Center, San Antonio; Nicholas J. Braico, Dunvale Corporation, Gilberts, IL; Susan Davis, Davis Lead Aprons, Inc., Houston, TX; Kenneth Palmero, Palmero Dental Mfg./Sales Co., Stratford, CT; Martin Wolf, Flow X-Ray Corporation, W. Hempstead, NY; Kavas Thunthy, Louisiana State University, New Orleans; and Ray Lapof, Bar-Ray Products, Inc., Littlestown, PA.

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## FOREWORD

This foreword is not a part of the ANSI/ADA Specification No. 70 for Dental X-Ray Protective Aprons and Accessory Devices.

This ANSI/ADA specification has been developed by a working group of the Accredited Standards Committee MD156, the body accredited for developing standards for dental products in the United States. Each proposal for creation or revision of a specification is circulated for review and comment by interested parties before it is finally approved as an ANSI/ADA specification.

This specification has been formulated according to directives specified for the development of international standards (International Organization for Standardization, or ISO, standards) for dental products. The guidelines are to be found in the following publications:

ISO Directives, Part 2: Methodology for the development of international standards. 1st ed., 1989.

ISO Directives, Part 3: Drafting and presentation of international standards. 1st ed., 1989.

Guidelines for Harmonization of Standards for Dental Materials. Prepared by the Ad Hoc Group on Harmonization ISO/TC 106/SC 2.

This specification addresses the dimensions and X-ray absorption characteristics of the X-ray protective aprons and accessory devices so that they can protect the patient from the harmful effects of dental diagnostic X-radiation. The specification classifies the aprons according to types indicating whether they are for adults or children.

It also specifies requirements and tests relative to safety and apron identification.

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## 1 SCOPE

This specification applies to dental X-ray protective aprons and accessory devices, such as thyroid collars and thyroid shields used in dentistry that protect the patient, as much as feasible, from the harmful effects of dental diagnostic X-radiation. It specifies the requirements for X-radiation absorption and the areas of anatomy that the aprons and thyroid collars protect.

## 2 NORMATIVE REFERENCE

The following specifications contain provisions which, through reference in this text constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below:

Intraoral X-ray film of speed group D or E (as specified in ADA Specification No. 22, ISO Standard 3665)

## 3 DEFINITIONS

For the purpose of this specification the following definitions apply:

### 3.1 Kilovoltage Peak (kVp)

The nominal peak kilovoltage operating in the X-ray tube producing a certain distribution of X-ray photons energies.

For this specification, an 85 kVp half-wave rectified X-ray generator, or 80 kVp direct current X-ray generator, and X-ray tubehead.

### 3.2 Optical Density

In photographic photometry, the logarithm to the base 10 of the ratio of the incident light to the transmitted light. The range of values of optical density expected in this test method is 0.5 to 2.5.

### 3.3 Adult

A person 13 years old or older.

### 3.4 Child

A person 12 years old or younger.

## 4 REQUIREMENTS

### 4.1 Safety

4.1.1 When evaluated according to Section 7.1 the aprons shall exhibit no defects (sharp or rough surfaces) that may cause injury to patients or persons handling the apron.

### 4.2 Lead Protection Equivalency

4.2.1 The aprons, thyroid collars and accessory devices shall provide a minimum lead protection equivalency of 0.3 mm up to 85 kVp.