

AS/NZS 4543.1:1999
IEC 61331-1:1994

Australian/New Zealand Standard™

**Protective devices against
diagnostic medical X-radiation**

**Part 1: Determination of attenuation
properties of materials**

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AS/NZS 4543.1:1999

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee HE/3, Medical Electrical Equipment. It was approved on behalf of the Council of Standards Australia on 12 February 1999 and on behalf of the Council of Standards New Zealand on 18 January 1999. It was published on 5 March 1999.

The following interests are represented on Committee HT/23:

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 Australian Society of Anaesthetists
 College of Biomedical Engineering Institution of Engineers Australia
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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee, HE/3, Medical Electrical Equipment, as a Joint Standard.

This Standard is identical with and has been reproduced from IEC 61331-1:1994, *Protective devices against diagnostic medical X-radiation Part 1: Determination of attenuation properties of materials*.

All IEC Standards have been renumbered as the IEC 60XXX series, therefore references in the source text should be modified by adding 60000 to the number.

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For the purpose of this Standard, the IEC text should be modified as follows:

- (a) *Terminology* The words 'this Australian/New Zealand Standard' should replace the words 'this part of International Standard IEC 1331' or 'this Part 1' wherever they appear.
- (b) *Decimal marker* Substitute a full point for a comma where it appears as a decimal marker.

The term 'normative' has been used in this Standard to define the application of the annex to which it applies. A 'normative' annex is an integral part of a Standard.

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AUSTRALIAN/NEW ZEALAND STANDARD

**PROTECTIVE DEVICES AGAINST DIAGNOSTIC
MEDICAL X-RADIATION –****Part 1: Determination of attenuation properties of materials****1 Scope and object****1.1 Scope**

This part of International Standard IEC 1331 applies to materials in sheet form used for the manufacturing of PROTECTIVE DEVICES against X-RADIATION of RADIATION QUALITIES generated with X-RAY TUBE VOLTAGES up to 400 kV and a TOTAL FILTRATION of up to 3,5 mm Cu.

This part 1 is not intended to be applied to PROTECTIVE DEVICES when these are to be checked for the presence of their ATTENUATION properties before and after periods of use.

1.2 Object

This part 1 specifies the methods of determining and indicating the ATTENUATION properties of the materials.

The ATTENUATION properties are given in terms of:

- ATTENUATION RATIO;
- BUILD UP FACTOR;
- ATTENUATION EQUIVALENT OR LEAD EQUIVALENT;

together with, as appropriate, an indication of inhomogeneity.

Ways of stating values of ATTENUATION properties in compliance with this part of the International Standard are included.

- Methods for periodical checks of PROTECTIVE DEVICES, particularly of PROTECTIVE CLOTHING,
- methods of determining the ATTENUATION by layers in the RADIATION BEAM, and
- methods of determining the ATTENUATION for purposes of protection against IONIZING RADIATION provided by walls and other parts of an installation

will be described in separate standards.

2 Normative reference

The following normative document contains provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the edition indicated is valid. All normative documents are subject to revision. and parties to