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IEC 60268-5: 2003

DRAFT TANZANIA STANDARD

(Draft for comments only)

Sound system equipment - Part 5: Loudspeakers

Draft for stakeholders' comments only

TANZANIA BUREAU OF STANDARDS

1 National Foreword

This draft Tanzania Standard is being prepared by the Communication Equipment Technical Committee, under the supervision of the Electrotechnical divisional standards committee (EDC)

This draft Tanzania Standard is an adoption of the International Standard **IEC 60268-5: 2003** *Sound system equipment - Part 5: Loudspeakers*, Which has been prepared by the International Electrotechnical Commission.

2 Terminology and conventions

Some terminologies and certain conventions are not identical with those used in Tanzania standards; attention is drawn especially to the following: -

- a) The comma has been used as a decimal marker for metric dimensions. In Tanzania Standards, it is current practice to use "full point" on the baseline as the decimal marker.
- b) Where the words "International Standard(s)" appear, referring to this standard they should read "Tanzania Standard(s)".

Draft for stakeholders' comments only



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INTERNATIONAL STANDARD

Sound system equipment –
Part 5: Loudspeakers

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ELECTROTECHNICAL
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INTERNATIONAL ELECTROTECHNICAL COMMISSION

SOUND SYSTEM EQUIPMENT –

Part 5: Loudspeakers

FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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International Standard IEC 60268-5 has been prepared by IEC technical committee 100:
Audio, video and multimedia systems and equipment.

This consolidated version of IEC 60268-5 consists of the third edition (2003) [documents 100/648/FDIS and 100/674/RVD] and its amendment 1 (2007) [documents 100/1189/CDV and 100/1245/RVC].

The technical content is therefore identical to the base edition and its amendment(s) and has been prepared for user convenience.

It bears the edition number 3.1.

A vertical line in the margin shows where the base publication has been modified by amendment 1.

This standard is to be read in conjunction with IEC 60268-1, IEC 60268-2 and ISO 3741.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of the base publication and its amendments will remain unchanged until the maintenance result date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

A bilingual edition of this standard may be issued at a later date.

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SOUND SYSTEM EQUIPMENT –

Part 5: Loudspeakers

1 Scope

This standard applies to sound system loudspeakers, treated entirely as passive elements. Loudspeakers with built-in amplifiers are excluded.

NOTE 1 The term “loudspeaker” used in this standard relates to loudspeaker drive units themselves and also to loudspeaker systems, which comprise one or more loudspeaker drive units provided with a baffle, enclosure or horn and such relevant devices as built-in crossover filters, transformers and any other passive element.

The purpose of this standard is to give the characteristics to be specified and the relevant methods of measurement for loudspeakers using sinusoidal or specified noise or impulsive signals.

NOTE 2 The methods of measurement given in this standard have been chosen for their appropriateness to the characteristics.

NOTE 3 If equivalent results can be obtained using other methods of measurement, details of the methods used should be presented with the results.

NOTE 4 The following items are under consideration:

- loudspeakers with built-in amplifiers;
- measurements under conditions other than free-field, half-space free-field and diffuse field;
- measurements with signals other than sinusoidal or noise or impulsive signals.

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.

IEC 60050(151), *International Electrotechnical Vocabulary (IEV) – Part 151: Electrical and magnetic devices*

IEC 60263, *Scales and sizes for plotting frequency characteristics and polar diagrams* IEC

60268-1, *Sound system equipment – Part 1: General*

IEC 60268-2, *Sound system equipment – Part 2: Explanation of general terms and calculation methods*

IEC 60268-3, *Sound system equipment – Part 3: Amplifiers*

IEC 60268-11, *Sound system equipment – Part 11: Application of connectors for the interconnection of sound system components*

IEC 60268-12, *Sound system equipment – Part 12: Application of connectors for broadcast and similar use*

IEC 60268-14, *Part 14: Circular and elliptical loudspeakers; outer frame diameters and mounting dimensions*

IEC 60651, *Sound level meters*

IEC 61260, *Electroacoustics – Octave-band and fractional-octave-band filters*

ISO 3741, *Acoustics – Determination of sound power levels of noise sources using sound pressure – Precision methods for reverberation rooms*

ISO 3744, *Acoustics – Determination of sound power levels of noise sources using sound pressure – Engineering method in an essentially free field over a reflecting plane*

ISO 3745, *Acoustics – Determination of sound power levels of noise sources – Precision methods for anechoic and semi-anechoic rooms*

3 Conditions for measurement

3.1 General conditions

This standard is to be used in conjunction with IEC 60268-1, IEC 60268-2 and ISO 3741.

3.2 Measuring conditions

3.2.1 General

For convenience in specifying how loudspeakers are to be set up for measurement, normal measuring conditions are defined in this standard. To obtain the correct conditions for measurement, some values (known as “rated conditions”) shall be taken from the manufacturer's specification. These values themselves are not subject to measurement but they constitute the basis for measuring the other characteristics.

The following values and conditions are of this type, and shall be stated by the manufacturer:

- rated impedance;
- rated sinusoidal voltage or power;
- rated noise voltage or power;
- rated frequency range;
- reference plane;
- reference point;
- reference axis.

NOTE A full explanation of the term “rated” is given in IEC 60268-2. See also term 151-04-03 in IEC 60050(151).

3.2.2 Normal measuring conditions

A loudspeaker shall be understood to be working under normal measuring conditions when all the following conditions are fulfilled:

- a) the loudspeaker to be measured is mounted in accordance with Clause 10;
- b) the acoustical environment is specified and is selected from those specified in Clause 5;

- c) the loudspeaker is positioned with respect to the measuring microphone and the walls in accordance with Clause 7;
- d) the loudspeaker is supplied with a specified test signal, in accordance with Clause 4, of a stated voltage U , within the rated frequency range in accordance with 19.1. If required, the input power P can be calculated from the equation: $P = U^2/R$, where R is the rated impedance in accordance with 16.1;

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