

**BUREAU OF INDIAN STANDARDS**  
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**मसौदा भारतीय मानक**  
**खोखला धाविक तंरगपथक भाग 7 गोलाकार (चक्करदार) तंरगपथक**  
**के लिए संबंथित विशिष्टि**  
**(दूसरा पुनरीक्षण)**

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***Draft Indian Standard***  
***Hollow Metallic Waveguides***  
***Part 7 Relevant Specifications for Circular Waveguides***  
***(Second Revision)***

***ICS 33.120.10***

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## NATIONAL FOREWORD

(Formal clauses will be added later)

This Draft Indian Standard (Part 7) (Second Revision) which is identical with IEC 60153-4: 2022 ‘Hollow metallic waveguides – Part 4: Relevant specifications for circular waveguides issued by the International Electrotechnical Commission (IEC) *will be* adopted by the Bureau of Indian Standards on the recommendation of Wires, Cables, Waveguides and Accessories Sectional Committee and approval of the Electronics and Information Technology Division Council.

This standard was first published in 1981 and was mainly based on IEC Pub 153-4 (1973) and JSS 53005. The first revision of this standard was undertaken to align with the IEC 60153-4: 2017. The second revision of this standard aligns with the latest version of IEC 60153-4: 2022.

Other parts in this series are:

Part 1 General requirements and measuring methods Second Revision

Part 2 Relevant specifications for ordinary rectangular waveguides First Revision

Part 4 flat rigid rectangular waveguides

This edition includes the following significant technical changes with respect to the previous edition:

a) change of the designation scheme for small circular waveguides (e.g. C 25.5k instead of C 25500);

b) revision of Table 1:

- correction of two waveguide designations (now C 1.2k, C 12k);
- correction of three waveguide diameters (C 140, C 1.4k, C 14k);
- tightening of inner diameter tolerances for waveguides smaller than C 890;
- deletion of waveguide attenuation values for aluminium, gold, and brass;

c) deletion of Table 2 (duplication) and replacement with the table of intermediate waveguide sizes originally envisaged here;

d) addition of an equation for calculating the attenuation of waveguides made of any material.

The text of IEC Standard *may be* approved as suitable for publication as an Indian Standard without deviations. Certain conventions are however not identical to those used in Indian Standards. Attention is particularly drawn to the following:

- a) Wherever the words ‘International Standard’ appears referring to this standard, they should be read as ‘Indian Standard’.
- b) Comma (,) has been used as a decimal marker while in Indian Standards, the current practice is to use a point (.) as the decimal marker.

In this adopted standard, reference appears to certain International Standards for which Indian Standards also exist. The corresponding Indian Standards, which are to be substituted in their respective places, are listed below along with their degree of equivalence for the editions indicated. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies:

<b>International Standards</b>	<b>Corresponding Indian Standards</b>	<b>Degree of Equivalence</b>
IEC 60050 (all parts), International Electrotechnical Vocabulary	IS 1885, Electrotechnical Vocabulary (all parts)	Technical equivalent
IEC 60261 Sealing test for pressurized waveguide tubing and assemblies	IS 9817: 1992, Sealing test for pressurized wave guide tubing and assemblies (First Revision)	Identical with IEC 60261

The technical committee has reviewed the provisions of the following International Standards referred in this adopted standard and has decided that they are acceptable for use in conjunction with this standard. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies:

<i>International Standard</i>	<i>Title</i>
IEC 60028:1925	International standard of resistance for copper
IEC 60153-1	Hollow metallic waveguides – Part 1: General requirements and measuring methods

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2:2022 ‘Rules for rounding off numerical values (*Second Revision*)’. The number of significant places retained in the rounded off value should be same as that of the specified value in this standard.

### **SCOPE OF IEC 60153-4: 2022**

“This part of IEC 60153 specifies straight hollow metallic tubing of circular cross section for use as waveguides in electronic equipment.

The aim of this document is to specify the hollow metallic waveguides:

- a) the details necessary to ensure compatibility and, as far as essential, interchangeability;
- b) test methods;

c) uniform requirements for the electrical and mechanical properties.

No recommendations are made for the materials to be used for waveguides. The choice of materials is to be agreed on between the customer and the manufacturer.

This document is intended to be read in conjunction with IEC 60153-1, which gives general requirements and test methods.”

**Note:** - The Technical content of this document has not been enclosed as these are identical with the corresponding IEC Standard. For details, please refer to IEC 60153-4: 2022 or kindly contact.

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