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Guides d'ondes métalliques creux
Sixième partie: Spécifications particulières pour les guides d'ondes rectangulaires plats moyens

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ES : NOS

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Hollow metallic waveguides

Part 6: Relevant specifications for medium flat rectangular waveguides

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

HOLLOW METALLIC WAVEGUIDES
Part 6: Relevant specifications for medium flat rectangular waveguides

FOREWORD

1) The formal decisions or agreements of the IEC on technical matters, prepared by Technical Committees on which all the National Committees having a special interest therein are represented, express, as nearly as possible, an international consensus of opinion on the subjects dealt with.

2) They have the form of recommendations for international use and they are accepted by the National Committees in that sense.

3) In order to promote this international unification, the IEC expresses the wish that all National Committees having as yet no national rules, when preparing such rules, should use the IEC recommendations as the fundamental basis for these rules in so far as national conditions will permit.

4) The desirability is recognized of extending international agreement on these matters through an endeavour to harmonize national standardization rules with these recommendations in so far as national conditions will permit. The National Committees pledge their influence towards that end.

PREFACE

This Recommendation was prepared by Sub-Committee 46B, Waveguides and their Accessories, of IEC Technical Committee No. 46, Cables, Wires, and Waveguides for Telecommunication Equipment.

It contains Part 6: Relevant Specifications for Medium Flat Waveguides, of the complete IEC Recommendation for Hollow Metallic Waveguides, and it is intended to be used in conjunction with Part 1, General Requirements and Measuring Methods, which is issued as IEC Publication 153-1.

Relevant specifications for other types of waveguides will appear in companion publications.

The general outline of this Recommendation was first discussed at a meeting held in Ulm in 1959. A draft was prepared which was considered at the meeting held in Interlaken in 1961. As a result of this latter meeting, a draft was submitted to the National Committees for approval under the Six Months' Rule in February 1962.

Several countries submitted comments which were informally considered during the meeting held in Bucharest in 1962, as the voting period had not yet expired by that time. Based on the comments received, some amendments were submitted to the National Committees for approval under the Two Months' Procedure in January 1965. Some comments were discussed and accepted at the meeting held in Baden-Baden in 1965.

The following countries voted explicitly in favour of publication of Part 6:

Australia	Netherlands
Belgium	Norway
Canada	Poland
Czechoslovakia	Romania
Denmark	Sweden
Finland	Switzerland
France	Turkey
Hungary	United Kingdom
India	United States of America
Italy	Yugoslavia
Japan	

HOLLOW METALLIC WAVEGUIDES

Part 6: Relevant specifications for medium flat rectangular waveguides

MEDIUM FLAT RECTANGULAR WAVEGUIDES — TYPE M

Clause No. of IEC Publication 153-1	Item
1.	**General**
	Standardized types
	The series of medium flat rectangular waveguides covered by this publication are shown in Table I.
1.2	*Type designation*
	For these waveguides the type designation comprises:
	a) The code: 153 IEC-M
	b) A number characterizing a particular size of waveguide. This number expresses approximately in multiples of 100 MHz (Mc/s) the geometric mean frequency of the recommended frequency range.
	Frequency range
	The frequency range indicated in Table I is from 1.25 to 1.9 times the cut-off frequency in the dominant mode. For any particular type of application, the working frequency range may be smaller or greater than the frequency range given in the table.
2.	**Mechanical requirements**
	It should be noted that no recommendations are made for the materials to be used for waveguides. The choice of material must be agreed between customer and manufacturer.
2.1	*Dimensions*
2.1.6.1	*Inside dimensions*
	The tolerances both on width and height shall be approximately: ± 1/1 000 of the inside nominal width.

Clause No. of IEC Publication 153-1	Item
2.1.6.1 *(cont.)*	The nominal values and the tolerances are specified in Table I.
2.1.6.2	*Wall thickness* The nominal values are specified in Table I.
2.1.6.3	*Eccentricity* The eccentricity shall not exceed 10% of the nominal wall thickness.
2.1.6.4	*Outside dimensions* The tolerance both on width and height is approximately: ± 1/500 of the inside nominal width. The nominal values and tolerances are specified in Table I.
2.1.6.5	*Rectangularity of cross-section* The rectangularity of inside and outside cross-section shall conform to the requirements specified in Part I of this publication.
2.2	*Other mechanical requirements*
2.2.1	*Bow* The bow shall conform to the requirements specified in Part I of this publication.
2.2.2	*Twist* The twist shall conform to the requirements specified in Part I of this publication.
2.2.3	*Surface roughness* Surface roughness shall conform to the requirements specified in Part I of this publication.
2.2.4	*Internal stress* Test procedure and requirements shall conform to Part I of this publication.

Clause No. of IEC Publication 153-1	Item
3.	**Electrical tests**
3.1	*Attenuation* The maximum attenuation shall not exceed 1.3 times the values calculated from formula (1) in Part I at a frequency of 1.5 times the cut-off frequency. The values given in the table are for waveguides made of copper with standard resistivity $\rho_o = 1.7241.10^{-8}$ ohm.metre.
3.2	*Irregularity of characteristic impedance* Irregularity of characteristic impedance shall conform to the requirements specified in Part I of this publication.
4.	**Additional tests**
4.1	*Gas tightness* Gas tightness shall conform to the requirements specified in Part I of this publication.