INTERNATIONAL STANDARD 497

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Guide to the choice of series of preferred numbers and of series containing more rounded values of preferred numbers

First edition — 1973-05-01

UDC 389.171

Ref. No. ISO 497-1973 (E)

Descriptors : preferred numbers, selection.

Price based on 7 pages

FOREWORD

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO Member Bodies). The work of developing International Standards is carried out through ISO Technical Committees. Every Member Body interested in a subject for which a Technical Committee has been set up has the right to be represented on that Committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work.

Draft International Standards adopted by the Technical Committees are circulated to the Member Bodies for approval before their acceptance as International Standards by the ISO Council.

Prior to 1972, the results of the work of the Technical Committees were published as ISO Recommendations; these documents are now in the process of being transformed into International Standards. As part of this process, International Standard ISO 497 replaces ISO Recommendation R 497-1966 drawn up by Technical Committee ISO/TC 19, *Preferred numbers.*

The Member Bodies of the following countries approved the Recommendation :

Australia	France	Poland
Austria	Germany	Sweden
Belgium	Greece	Switzerland
Canada	Hungary	United Kingdom
Chile	India	U.S.A.
Czechoslovakia	Israel	U.S.S.R.
Denmark	Italy	Yugoslavia
Egypt, Arab Rep. of	Japan	
Finland	Morocco	

No Member Body expressed disapproval of the Recommendation.

Printed in Switzerland

Guide to the choice of series of preferred numbers and of series containing more rounded values of preferred numbers

1 SCOPE AND FIELD OF APPLICATION

This International Standard completes ISO 17 by supplementary directives regarding the choice of series and the possible use of more rounded values as mentioned in section 7 of that International Standard :

a) it gives the only more rounded values admissible, in the form of two series rounded to a greater or lesser degree;

b) it states the conditions on which these more rounded values may be used and the consequences of using them;

c) it gives rules by means of which any uncertainty in the choice between the preferred numbers and the various more rounded values can be avoided.

2 REFERENCES

ISO 3, *Preferred numbers — Series of preferred numbers.*

ISO 17, *Guide to the use of preferred numbers and of series of preferred numbers.*

3 ADVANTAGES OF ADHERING STRICTLY TO PREFERRED NUMBERS

The advantages of using preferred numbers, set out in ISO 3 and ISO 17, are recalled and amplified below.

These advantages are obtained not merely in the standardization of various machine elements by themselves, but above all in the construction of complete machines when the functional characteristics, as well as the sizes of each of the various elements, are in a geometrical progression.

3.1 Best progression

Preferred numbers ensure the best progression from the point of view of regularity and the possibility of adapting them to new requirements for the creation of closer series by the insertion of intermediate values.

3.2 Universal applicability

Preferred numbers offer the most logical means of uninterrupted coverage of the complete range of requirements in a given field (powers of motors, output of pumps, etc.).

3.3 Simplification of technical and commercial calculations

Since the products and quotients of preferred numbers are by definition also preferred numbers, calculations, which should be made by using the logarithmic values or serial numbers and not the preferred numbers themselves, are considerably simplified, especially when the series of values (dimensions, list prices, etc.) are multiplied or divided in the same proportions.

3.4 Conversion into other systems of measurement

Conversion into other systems of measurement is greatly facilitated when the series of values in which the measurements are expressed comprise preferred numbers and, at the same time, the conversion factors approximate to preferred numbers.