INTERNATIONAL STANDARD 1829

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

Selection of tolerance zones for general purposes

Sélection de zones de tolérances pour usages généraux

First edition — 1975-06-15

UDC 621.753.1/.2 : 389.17

Ref. No. ISO 1829-1975 (E)

Descriptors : dimensional tolerances, fits, selection.

Price based on 2 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, Technical Committee ISO/TC 3 has reviewed ISO Recommendation R 1829 and found it technically suitable for transformation. International Standard ISO 1829 therefore replaces ISO Recommendation R 1829-1970 to which it is technically identical.

ISO Recommendation R 1829 was approved by the Member Bodies of the following countries :

Austria	India	Romania
Brazil	Israel	Spain
Chile	Japan	South Africa, Rep. of
Czechoslovakia	Netherlands	Sweden
Egypt, Arab Rep. of	New Zealand	Switzerland
Germany	Norway	Turkey
Greece	Peru	United Kingdom
Hungary	Poland	U.S.S.R.

The Member Bodies of the following countries expressed disapproval of the Recommendation on technical grounds :

Belgium
Canada
France
Portugal

The Member Body of the following country disapproved the transformation of ISO/R 1829 into an International Standard :

Australia

Printed in Switzerland

Selection of tolerance zones for general purposes

0 INTRODUCTION

ISO/R 286, *ISO System of limits and fits – Part I : General, tolerances and deviations*, gives the possibility of a very wide choice among the various symbols for tolerance zones that it contains, even if this choice is limited only to those shown in its appendix as corresponding to commonly used shafts and holes for general purposes.

1 SCOPE AND FIELD OF APPLICATION

The purpose of this International Standard is to avoid an unnecessary multiplicity of tools and gauges by restricting selection still further and guiding the user towards preferred tolerance zones for shafts and holes to be used in constituting fits.

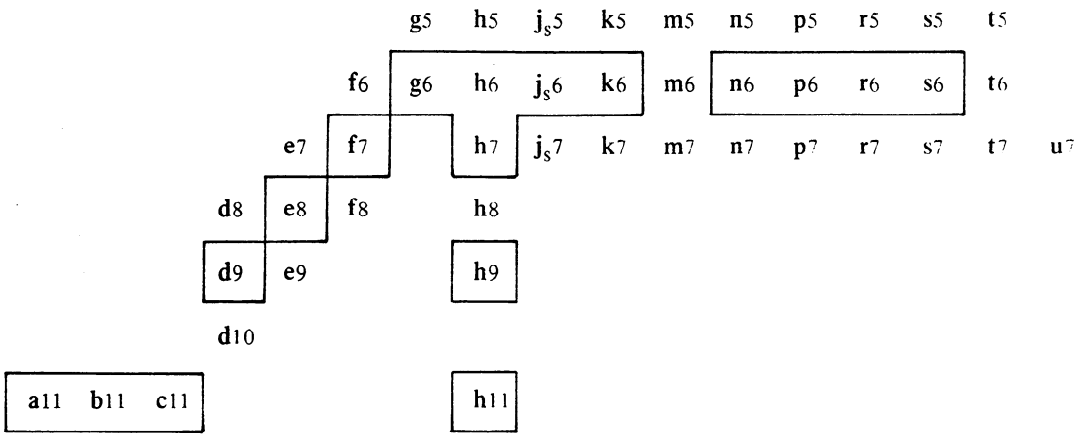
It applies only to "general purposes" of ISO/R 286 (excluding therefore fine mechanisms and horology) and covers only the constitution of common use fits which do not require a more specific selection of tolerance zones (for example : keyways according to ISO/R 773 and ISO/R 774).

It also gives some practical recommendations concerning the choice of such fits.

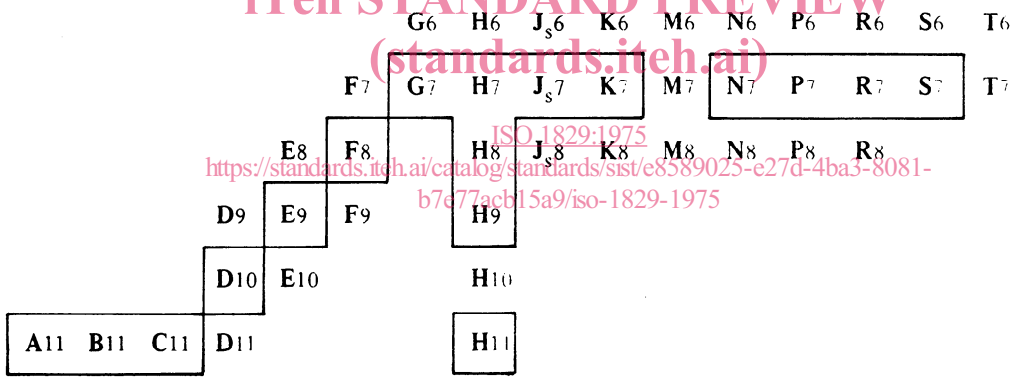
2 SELECTION OF TOLERANCE ZONES

Whenever possible the tolerance zones should be chosen from those corresponding to the following symbols for shafts and holes, and the first choice should *preferably* always be made from those whose symbols are enclosed in the frames.

2.1 Shafts



2.2 Holes



NOTE — Deviations j_s and J_s may be replaced by the corresponding deviations j and J.

3 PRACTICAL RECOMMENDATIONS FOR SELECTING A FIT

3.1 The first point to decide is whether to adopt a *hole basis* fit (hole H) or a *shaft basis* fit (shaft h).

The *shaft basis* system should only be used where it will convey unquestionable economic advantages (for example, where it is necessary to be able to mount several parts with holes having different deviations on a single shaft of drawn steel bar without machining the latter).

If this is not the case, it is preferable to choose the *hole basis* system and, by adopting this as the preferred system for general use, avoid an unnecessary multiplicity of gauges.

3.2 The other deviations and tolerances (letters and figures in the symbol) should then be chosen in this International Standard for the shaft and hole to give the corresponding minimum and maximum clearances or interferences that best meet the required conditions of use (particularly in the most critical case of heavy interference fits).

The tolerances chosen should be the largest compatible with these conditions of use : the hole, being the more difficult member to machine, may often be allocated a tolerance one grade coarser than that of the shaft (for example : H8 — f7).