



Explanatory notes on ISO 281/1-1977

Notes explicatives sur l'ISO 281/1-1977

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established 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.

The main task of ISO technical committees is to prepare International Standards. In exceptional circumstances a technical committee may propose the publication of a technical report of one of the following types :

- type 1, when the necessary support within the technical committee cannot be obtained for the publication of an International Standard, despite repeated efforts;
- type 2, when the subject is still under technical development requiring wider exposure;
- type 3, when a technical committee has collected data of a different kind from that which is normally published as an International Standard ("state of the art", for example).

Technical reports are accepted for publication directly by ISO Council. Technical reports types 1 and 2 are subject to review within three years of publication, to decide if they can be transformed into International Standards. Technical reports type 3 do not necessarily have to be reviewed until the data they provide is considered no longer valid or useful.

ISO/TR 8646 was prepared by Technical Committee ISO/TC 4, *Rolling bearings*.

The reasons which led to the decision to publish this document in the form of a technical report type 3 are explained in the Introduction.

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1. Introduction

This Technical Report gives supplementary background information regarding the derivation of formulae and factors given in ISO 281/I, Rolling bearings - Dynamic load ratings and rating life - Part I : Calculation methods.

2. Brief History

2.1 ISO/R281-1962

A first discussion on an international level of the question of standardizing calculation methods for load ratings of rolling bearings took place at the 1934 conference of the International Federation of the National Standardizing Associations (ISA). When ISA held its last conference in 1939 no progress had been made. However, in its 1945 report on the state of rolling bearing standardization, the ISA 4 Secretariat included proposals for definition of concepts being fundamental for load rating and life calculation standards. This report was distributed in 1949 as document ISO/TC 4 (Secretariat-1)1, and the definitions it contained are in essence those given in ISO 281/I for the concepts "life" and "basic dynamic load rating".

In 1946, on the initiative of the Anti-Friction Bearing Manufacturers Association (AFBMA), New York, discussions of load rating and life calculation standards were started between bearing industries in U.S.A. and Sweden. Chiefly on the basis of results of scientific investigations by G. Lundberg and A. Palmgren, published in 1947 [1]*, an AFBMA Standard "Method of Evaluating Load Ratings of Annular Ball Bearings" was worked out and published in 1949. On the same basis, the member body of Sweden presented in Feb., 1950 a first proposal to ISO, "Load Rating of Ball Bearings", doc. ISO/TC 4/SC 1 (Sweden-1)1.

* figures in brackets indicate literature references in References.