BUREAU OF INDIAN STANDARDS
DRAFT FOR COMMENTS ONLY

Doc: PGD 33 (26087) WC
July 2024

भारतीय मानक मसौदा

स्पर और कुंडलित गियरों की भार क्षमता का परिकलन — भाग 1: मूल सिद्धांत, परिचय और सामान्य प्रभाव कारक

Draft Indian Standard

Calculation of Load Capacity of Spur and Helical Gears — Part 1: Basic Principles, Introduction and General Influence Factors

ICS 21.200

Transmission Device Sectional Committee, PGD 33	Last Date for Comments: **02-09-2024**

NATIONAL FOREWORD

(*Formal clauses will be added later on*)

This standard presents the basic principles of, an introduction to, and the general influence factors for the calculation of the load capacity of spur and helical gears. Together with the other standards in the ISO 6336 series, it provides a method by which different gear designs can be compared. It is not intended to assure the performance of assembled drive gear systems. It is not intended for use by the general engineering. Instead, it is intended for use by the experienced gear designer who is capable of selecting reasonable values for the factors in these formulae based on the knowledge of similar designs and the awareness of the effects of the items given in the standards.

Spur gears offer the simplest design, with straight teeth parallel to the gear axis. Conversely, helical gears have teeth cut in the form of a helix over the cylindrical blank. Both spur gears and helical gears are used to transmit power between a parallel driver and driven shafts.

This standard is published in five parts. The other parts in this series are:

Part 2	Calculation of surface durability (pitting)
Part 3	Calculation of tooth bending strength
Part 5	Strength and quality of materials
Part 6	Calculation of service life under variable load

The text of ISO standard has been 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' appear 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:

International Standard	*Corresponding Indian Standard*	*Degree of Equivalence*
ISO 53 : 1998 Cylindrical gears for general and heavy engineering — Standard basic rack tooth profile	IS 2535 (Part 1) : 2004/ISO 53 : 1998 Cylindrical gears for general and heavy engineering: Part 1 Standard basic rack tooth profile (*third revision*)	Identical
ISO 1122-1 : 1998 Vocabulary of gear terms — Part 1: Definitions related to geometry	IS 2458 : 2001/ ISO 1122-1 : 1998 Vocabulary of gear terms — Definitions related to geometry (*first revision*)	Identical

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:

International Standard	*Title*
ISO 1328-1 : 2013	Cylindrical gears — ISO system of flank tolerance classification — Part 1: Definitions and allowable values of deviations relevant to flanks of gear teeth
ISO 21771 : 2007	Gears — Cylindrical involute gears and gear pairs — Concepts and geometry
ISO 6336-2	Calculation of load capacity of spur and helical gears — Part 2: Calculation of surface durability (pitting)
ISO 6336-3	Calculation of load capacity of spur and helical gears — Part 3: Calculation of tooth bending strength
ISO 6336-5	Calculation of load capacity of spur and helical gears — Part 5: Strength and quality of materials
ISO 6336-6	Calculation of load capacity of spur and helical gears — Part 6: Calculation of service life under variable load

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*)’.

NOTE: The technical content of draft standard is not available on website. For details, please refer to ISO 6336-1 : 2019 or contact:

Head
Production and General Engineering Department
Bureau of Indian Standards
9 Bahadur Shah Zafar Marg New Delhi-110002
Email: pgd@bis.org.in
Telefax:011-23234819