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Bevel gears — ISO system of accuracy

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Foreword

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. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 17485 was prepared by Technical Committee ISO/TC 60, *Gears*.

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Introduction

The measurement and tolerance specification of bevel gears are very complex subjects that were in need of international standardization. For these and other reasons, ISO/TC 60 approved the project based on a proposed document, ANSI/AGMA 2009-B01, *Bevel Gear Classification, Tolerances, and Measuring Methods*.

At an early stage it was decided to develop two documents: this International Standard, with accuracy grades and definitions, and a separate Technical Report, ISO/TR 10064-6, containing inspection practice and measuring methods. These practices and measuring methods include topics such as manufacturing considerations, CMM measurements, contact pattern checking, and advanced topics such as bevel gear flank form analysis.

Prior to the development of this International Standard, the accuracy grades described in ISO 1328, for cylindrical gears, were often used for bevel gears. However, this use was not always consistent with the specific requirements and general practices followed within the bevel gear industry. This International Standard contains items that are distinctly different from ISO 1328-1:1995:

- the definitions, tolerance diameter and measuring directions are specifically for bevel gears;
- accuracy grade tolerances are based on equations and not on tables;
- there is approximately one grade difference in tolerance level between bevel and cylindrical gears, similar to that used by the DIN system of tolerances.

The use of the definitions and accuracy grades within this International Standard should improve the consistent application of bevel gear geometrical tolerances for the general benefit of industry.