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Gears — Wear and damage to gear teeth —

Part 1: Nomenclature and characteristics

Engrenages — Usure et défauts des dentures —

Partie 1: Nomenclature et caractéristiques

Reference number
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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 60, *Gears*, Subcommittee SC 1, *Nomenclature and wormgearing*.

This first edition of ISO 10825-1, together with ISO/TR 10825-2, cancels and replaces ISO 10825:1995, which has been technically revised.

The main changes are as follows:

— the document has been split into two parts: ISO 10825-1 and ISO/TR 10825-2 that gives additional information on failure modes;

— some additional modes of failures are described;

— most figures have been replaced and are in colour.

A list of all parts in the ISO 10825 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

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Introduction

This document provides a common language to describe gear wear and failure and serves as guidelines to uniformity and consistency in the use of that language. It describes the appearance of gear tooth failure modes. It is intended to improve communication between equipment users and gear manufacturers for failure and wear analysis. Since there can be many different causes for each type of gear tooth wear or failure, it is not possible in this document to identify a single cause for each type of wear or failure, nor to prescribe remedies.

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Gears — Wear and damage to gear teeth —

Part 1: Nomenclature and characteristics

IMPORTANT — The electronic file of this document contains colours which are considered to be useful for the correct understanding of the document. Users should therefore consider printing this document using a colour printer.

1 Scope

This document provides nomenclature for general modes of gear tooth wear and failure. It classifies, identifies, and describes the most common types of failure and provides information that, in many cases, enables the user to identify failure modes and evaluate the degree or change from original condition.

This document is based on experience with steel gears; however, many of the failure modes discussed apply to gears made from other materials. Not all failure modes that can occur on other types of gears, such as plastic, bronze, or powder metal gears, are included.

The solution to many gear problems requires detailed investigation and analysis by specialists and is beyond the scope of this document.

This document specifies only the terminology intended to help with the identification and reporting of the appearance and conditions of gears after a period of operation. Neither causes nor preventive measures for any condition described are discussed.

In this document, gear refers to both gear wheels and pinions, unless the gear is specifically identified.

This document does not define “gear failure”.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 1122-1, *Vocabulary of gear terms — Part 1: Definitions related to geometry*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 1122-1 apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

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