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STANDARD

3685

Second edition
1993-11-15

Tool-life testing with single-point turning tools

Essais de durée de vie des outils de tournage à partie active unique



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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.

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.

International Standard ISO 3685 was prepared by Technical Committee ISO/TC 29, *Small tools*.

This second edition cancels and replaces the first edition (ISO 3685:1977), of which it constitutes a technical revision.

Annexes A, B, C, D, E, F and G form an integral part of this International Standard. Annex H is for information only.

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Introduction

The adoption by both industry and testing bodies of the recommendations contained in ISO 3685:1977 created a demand for the publication of similar recommendations for other commonly used cutting processes.

Tool-life testing in milling is covered in ISO 8688-1:1989 and ISO 8688-2:1989. During the final stages of their preparation, it was recognized that there was a need to update the recommendations for single-point turning tools.

This International Standard contains recommendations which are applicable in both laboratories and manufacturing units. These recommendations are intended to unify procedures in order to increase reliability and comparability of test results when making comparisons of cutting tools, work materials, cutting parameters or cutting fluids. In order to come as close as possible to these aims, recommended reference materials and conditions are included and should be used as far as is practical.

In addition, the recommendations can be used to assist in finding recommended cutting data or to determine limiting factors and machining characteristics such as cutting forces, machined surface characteristics, chip form etc. For these purposes in particular, certain parameters, which have been given recommended values, may have to be used as variables.

The test conditions recommended in this International Standard have been designed for turning tests using steel and cast iron workpieces of normal microstructure, with solid high-speed steel tools or tools with cemented carbide or ceramic indexable inserts. However, with suitable modifications, this International Standard can be applied, for example, to turning tests on other work materials or with cutting tools developed for specific applications.

The specified accuracy given in the recommendations should be considered as a minimum requirement. Any deviation from the recommendations should be indicated in detail in the test report.