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Plain bearings — Quality characteristics — Calculation of machine and process capabilities

*Paliers lisses — Caractéristiques de qualité — Calcul de la capacité de
la machine et du procédé*



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Foreword

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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 12303 was prepared by Technical Committee ISO/TC 123, *Plain bearings*, Subcommittee SC 5, *Quality analysis and assurance*.

Annex A of this International Standard is for information only.

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Plain bearings — Quality characteristics — Calculation of machine and process capabilities

1 Scope

This International Standard specifies for plain bearings details of the calculation of machine and process capabilities for quantitative (variable) quality characteristics in accordance with ISO 12302.

2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the edition indicated was valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent edition of the standard indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 12302:1993, *Plain bearings — Quality characteristics — Statistical process control (SPC)*.

3 Definitions

For the purposes of this International Standard, the following definitions apply.

3.1 machine capability: A measure relating the actual performance of a machine to specified requirements. It is normally expressed as an index, viz. C_m , C_{mk} .

3.2 process capability: A measure relating the actual performance of a process to specified requirements. It is normally expressed as an index, viz. C_p , C_{pk} .

3.3 statistical process control (SPC): Control of quality characteristics of plain bearings during the production process by means of statistical techniques in order to comply with quality requirements.

3.4 quality characteristic: Characteristic by means of which the quality of a plain bearing is assessed.

4 Symbols and abbreviations

C_m	Machine capability index (spread only)
C_{mk}	Machine capability index (spread and setting)
C_p	Process capability index (spread only)
C_{pk}	Process capability index (spread and setting)
d_2	Factor
G	Judgement of normality
LL	Lower specified limit
UL	Upper specified limit
k	Number of subgroups
n	Subgroup size
R	Subgroup range
$\bar{R}$	Arithmetic mean of subgroup ranges
x_i	Observations (readings)
$\bar{x}$	Arithmetic mean of observations (readings)
$\bar{\bar{x}}$	Arithmetic mean of subgroup means
σ	Standard deviation
$\hat{\sigma}$	Estimated standard deviation