

This is a preview of "ISO 12491:1997". [Click here to purchase the full version from the ANSI store.](#)

First edition
1997-05-01

Statistical methods for quality control of building materials and components

*Méthodes statistiques de contrôle de la qualité des matériaux et éléments
de construction*

This material is reproduced from ISO documents under International Organization for Standardization (ISO) Copyright License number IHS/ICC/1996. Not for resale. No part of these ISO documents may be reproduced in any form, electronic retrieval system or otherwise, except as allowed in the copyright law of the country of use, or with the prior written consent of ISO (Case postale 56, 1211 Geneva 20, Switzerland, Fax +41 22 734 10 79), IHS or the ISO Licensor's members.



Reference number
ISO 12491:1997(E)

This is a preview of "ISO 12491:1997". Click here to purchase the full version from the ANSI store.

Contents

	Page
1 Scope	1
2 Normative references	1
3 Definitions	1
4 Population and sample	8
4.1 General	8
4.2 Normal distribution	8
4.3 Log-normal distribution	9
4.4 Normality tests	9
5 Methods of statistical quality control	9
5.1 Quality requirements	9
5.2 Basic statistical methods	10
5.3 Bayesian approach	10
5.4 Additional methods	12
6 Estimation and tests of parameters	12
6.1 Principles of estimation and tests	12
6.2 Estimation of the mean	13
6.3 Estimation of the variance.....	13
6.4 Comparison of means	14
6.5 Comparison of variances	15
6.6 Estimation of fractiles.....	15
6.7 Prediction of fractiles using the Bayesian approach	16
7 Sampling inspection	18
7.1 Variables and attributes	18
7.2 Inspection of an isolated lot	18
7.3 Sampling inspection by variables: σ known.....	19
7.4 Sampling inspection by variables: σ unknown	20
7.5 Sampling inspection by attributes	20
Annex	
A Bibliography.....	27
Alphabetical index	28

© ISO 1997

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the publisher.

International Organization for Standardization
Case postale 56 • CH-1211 Genève 20 • Switzerland
Internet central@iso.ch
X.400 c=ch; a=400net; p=iso; o=isocs; s=central

Printed in Switzerland

This is a preview of "ISO 12491:1997". [Click here to purchase the full version from the ANSI store.](#)

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 12491 was prepared by Technical Committee ISO/TC 98, *Bases for design of structures*, Subcommittee SC 2, *Reliability of structures*.

Annex A of this International Standard is for information only.

This is a preview of "ISO 12491:1997". [Click here to purchase the full version from the ANSI store.](#)

Introduction

Quality control of building materials and components is, according to ISO 2394, an indispensable part of an overall concept of structural reliability. As quality control is generally a time-consuming and expensive task, various operational techniques and activities have been developed to fulfil quality requirements in building. It appears that properly employed statistical methods can provide efficient, economic and effective means of quality control, particularly when expensive and destructive tests are to be performed. The purpose of this International Standard is to provide general techniques for quality control of building materials and components used in building or other civil engineering works.

Described techniques consist predominantly of classical statistical methods of common interest for all the participants in the building process. For other more sophisticated techniques and specific problems, existing statistical standards listed in annex A should be applied.