INTERNATIONAL STANDARD

ISO
12491

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

Contents

Page

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.

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.

Statistical methods for quality control of building materials and components

1 Scope

This International Standard gives general principles for the application of statistical methods in the quality control of building materials and components in compliance with the safety and serviceability requirements of ISO 2394.

This International Standard is applicable to all buildings and other civil engineering work, existing or under construction, whatever the nature or combination of the materials used, for example concrete, steel, wood, bricks.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were 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 editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 2394:—[1], *General principles on reliability for structures.*

ISO 3534-1:1993, *Statistics — Vocabulary and symbols — Part 1: Probability and general statistical terms.*

ISO 3534-2:1993, *Statistics — Vocabulary and symbols — Part 2: Statistical quality control.*

3 Definitions

For the purposes of this International Standard, the definitions given in ISO 3534-1 and ISO 3534-2, and the following definitions, apply.

NOTE - The terms and their definitions are listed in the order corresponding to their appearance in the main text. An alphabetic list of these terms with numerical references to subclauses where the terms appear is given in the index.

3.1 quality control: Operational techniques and activities that are used to fulfill requirements for quality.

3.2 statistical quality control: That part of quality control in which statistical methods are used (such as estimation and tests of parameters and sampling inspection).

---

[1] To be published. (Revision of ISO 2394:1986)