

INTERNATIONAL STANDARD

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Building construction — Measuring instruments — Procedures for determining accuracy in use —

Part 7: Instruments when used for setting out

*Construction immobilière — Instruments de mesure — Procédures de
détermination de l'exactitude d'utilisation —*

Partie 7: Instruments utilisés pour l'implantation



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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 8322-7 was prepared by Technical Committee ISO/TC 59, *Building construction*, Sub-Committee SC 4, *Limits and fits in building construction*.

ISO 8322 consists of the following parts, under the general title *Building construction — Measuring instruments — Procedures for determining accuracy in use*:

- *Part 1: Theory*
- *Part 2: Measuring tapes*
- *Part 3: Optical levelling instruments*
- *Part 4: Theodolites*
- *Part 5: Optical plumbing instruments*
- *Part 6: Laser instruments*
- *Part 7: Instruments when used for setting out*
- *Part 8: Electronic distance-measuring instruments up to 150 m*
- *Part 9: Electronic distance-measuring instruments up to 500 m*
- *Part 10: Testing short-range reflectors*

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Introduction

This International Standard consists of a series of parts specifying test procedures to be adopted when determining and assessing the accuracy in use of measuring instruments in building construction. The first part gives the theory; subsequent parts give the procedures for determining the accuracy in use of measuring instruments for measurements.

For testing measuring instruments for land surveying purposes and for measuring procedures in ordnance survey, other International Standards are in preparation.

Building construction — Measuring instruments — Procedures for determining accuracy in use —

Part 7:

Instruments when used for setting out

1 Scope

This part of ISO 8322 specifies test procedures to be adopted for the determination of the accuracy in use for setting out with theodolite and steel tape and with a theodolite.

The procedures given in this part of ISO 8322 apply to steel tapes and/or theodolites when used for setting out in building construction using methods in which systematic errors can be largely compensated or disregarded. They are such that the operations can be conveniently and rapidly carried out on a construction site and the results give a reasonable indication of the accuracy in use.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 8322. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 8322 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 3534:1977, *Statistics — Vocabulary and symbols*.

ISO 4463-1:1989, *Measurement methods for building — Setting-out and measurement — Part 1: Planning and organization, measuring procedures, acceptance criteria*.

ISO 7077:1981, *Measuring methods for building — General principles and procedures for the verification of dimensional compliance*.

ISO 7078:1985, *Building construction — Procedures for setting out, measurement and surveying — Vocabulary and guidance notes*.

3 General

3.1 Before setting out, it is important that the operator investigate whether the accuracy in use of the measuring equipment is appropriate to the intended measuring task. This International Standard recommends that the operator carry out test measurements under field conditions to establish the accuracy achieved when he uses a particular measuring instrument and its ancillary equipment.

To ensure that the assessment takes account of various environmental influences, two series of measurements need to be carried out under different conditions. The particular conditions to be taken into account may vary depending on where the tasks are to be undertaken. These conditions will include variations in air temperature, wind speed, cloud cover and visibility. Note should also be made of the actual weather conditions at the time of measurement and the type of surface over which the measurements are made. The sets of conditions chosen for the tests should match those expected when the intended measuring task is actually carried out. See ISO 7077 and ISO 7078.

- Assumptions:**
- P is the permitted deviation of the measuring task
 - A is the accuracy in use, generally expressed as deviation $\pm A$; (both $\pm P$ and $\pm A$ are considered to include the dimensional variability associated with $\pm 2,5$ times the standard deviation σ)
 - s are the standard deviations obtained in field tests

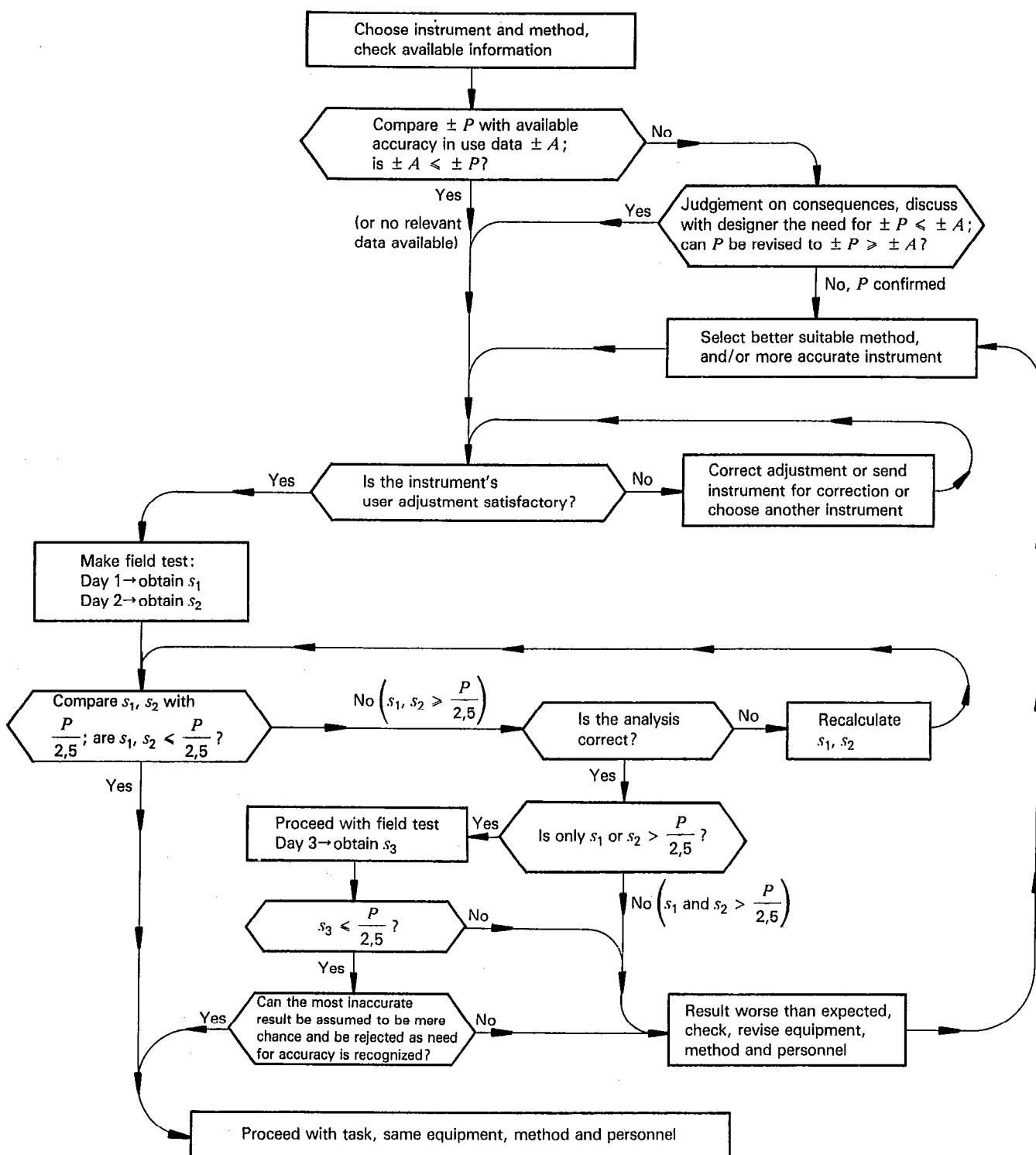


Figure 1 — Flow diagram for accuracy-in-use tests