AS ISO 11453—2004
ISO 11453:1996

AS ISO 11453—2004

Australian Standard™

Statistical interpretation of data—Tests and confidence intervals relating to proportions

STANDARDS AUSTRALIA

This Australian Standard was prepared by Committee QR-008, Quality Systems. It was approved on behalf of the Council of Standards Australia on 17 May 2004.
This Standard was published on 6 July 2004.

The following are represented on Committee QR-008:

Airways New Zealand
Australian Institute of Petroleum
Australian Organisation for Quality
Bureau of Steel Manufacturers of Australia
Commonwealth Department of Transport and Regional Services
Department of Agriculture, Fisheries and Forestry (Commonwealth)
Federal Chamber of Automotive Industries
Institute of Materials Engineering Australasia
Institution of Engineers Australia
International Accreditation Forum
Joint Accreditation System of Australia and New Zealand
Main Roads Department, Queensland
QSA International
Telarc New Zealand
The Royal Australian Chemical Institute

Keeping Standards up-to-date

Standards are living documents which reflect progress in science, technology and systems. To maintain their currency, all Standards are periodically reviewed, and new editions are published. Between editions, amendments may be issued. Standards may also be withdrawn. It is important that readers assure themselves they are using a current Standard, which should include any amendments which may have been published since the Standard was purchased.

Detailed information about Standards can be found by visiting the Standards Web Shop at www.standards.com.au and looking up the relevant Standard in the on-line catalogue.

Alternatively, the printed Catalogue provides information current at 1 January each year, and the monthly magazine, *The Global Standard*, has a full listing of revisions and amendments published each month.

Australian Standards™ and other products and services developed by Standards Australia are published and distributed under contract by SAI Global, which operates the Standards Web Shop.

We also welcome suggestions for improvement in our Standards, and especially encourage readers to notify us immediately of any apparent inaccuracies or ambiguities. Contact us via email at mail@standards.org.au, or write to the Chief Executive, Standards Australia International Ltd, GPO Box 5420, Sydney, NSW 2001.

This Standard was issued in draft form for comment as DR 04223.

Australian Standard™

Statistical interpretation of data—Tests and confidence intervals relating to proportions

First published as AS ISO 11453—2004.

Published by Standards Australia International Ltd
GPO Box 5420, Sydney, NSW 2001, Australia

ISBN 0 7337 6107 0

PREFACE

This Standard was prepared by the Australia members of Joint Standards Australia/New Zealand Committee QR-008, Quality Systems. After consultation with stakeholders in both countries, Standards Australia and Standards New Zealand decided to develop this Standard as an Australian Standard rather than an Australia/New Zealand Standard.

This Standard is identical with, and has been reproduced from ISO 11453:1996, *Statistical interpretation of data—Tests and confidence intervals relating to proportions*.

The objective of this Standard is to describe statistical methods to analysts for determining proportions of a population(s) in specified instances that determine what proportion of a population has a particular characteristic.

The terms 'normative' and 'informative' are used to define the application of the annex to which they apply. A normative annex is an integral part of a standard, whereas an informative annex is only for information and guidance.

As this Standard is reproduced from an international standard, the following applies:

(a) Its number appears on the cover and title page while the international standard number appears only on the cover

(b) In the source text 'this International Standard' should read 'this Australian Standard'.

(c) A full point substitutes for a comma when referring to a decimal marker.

(d) None of the normative references in the source document have been adopted as Australian or Australian/New Zealand Standards.

CONTENTS

NOTES

AUSTRALIAN STANDARD

Statistical interpretation of data — Tests and confidence intervals relating to proportions

1 Scope

This International Standard describes specific statistical methods for addressing the following questions.

a) Given a population of items from which a sample of n items has been drawn, x of the sample items are found to show a specified characteristic. What proportion of the population has that characteristic? (See A forms, subclause 8.1.)

b) Is the proportion estimated in a) different from a nominal (specified) value? (See B forms, subclause 8.2.)

c) Given two distinct populations, are the proportions with the characteristic in the two populations different? (See C forms, subclause 8.3.)

d) In b) and c) how many items must be sampled in the population(s) to be sufficiently sure that the result of the test is correct? (See 7.2.3 and 7.3.3.)

It is essential that the drawing of samples does not have any appreciable effect on the population. If the sample drawn at random is less than 10 % of the population this is usually satisfactory, but if the sample is greater than this, reliable results can be obtained only by replacing each item sampled before drawing the next item at random from the population.

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

3 Definitions

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

3.1 target item: One in which the specified characteristic is found.