

Representation of results of particle size analysis —

**Part 5: Methods of calculation relating
to particle size analyses using
logarithmic normal probability
distribution**

ICS 19.120

National foreword

This British Standard reproduces verbatim ISO 9276-5:2005 and implements it as the UK national standard.

The UK participation in its preparation was entrusted to Technical Committee LBI/37, Sieves, screens and particle sizing, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible international/European committee any enquiries on the interpretation, or proposals for change, and keep UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

A list of organizations represented on this committee can be obtained on request to its secretary.

Cross-references

The British Standards which implement international publications referred to in this document may be found in the *BSI Catalogue* under the section entitled “International Standards Correspondence Index”, or by using the “Search” facility of the *BSI Electronic Catalogue* or of British Standards Online.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, the ISO title page, pages ii to v, a blank page, pages 1 to 12, an inside back cover and a back cover.

The BSI copyright notice displayed in this document indicates when the document was last issued.

Amendments issued since publication

Amd. No.	Date	Comments

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 29 September 2005

© BSI 29 September 2005

INTERNATIONAL STANDARD

ISO
9276-5

First edition
2005-08-01

BS ISO 9276-5:2005

Representation of results of particle size analysis —

Part 5:

Methods of calculation relating to particle size analyses using logarithmic normal probability distribution

Représentation de données obtenues par analyse granulométrique —

*Partie 5: Méthodes de calcul relatif à l'analyse granulométrique à l'aide
de la distribution de probabilité logarithmique normale*



Reference number
ISO 9276-5:2005(E)

AVA **Documents**
Document Sharing Hub

Contents

Page

Foreword.....	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Symbols	1
4 Logarithmic normal probability function.....	2
5 Special values of a logarithmic normal probability distribution.....	5
5.1 Complete k th moments	5
5.2 Average particle sizes	5
5.3 Median particle sizes	6
5.4 Horizontal shifts between plotted distribution values	6
5.5 Volume-specific surface area (Sauter diameter)	8
Annex A (informative) Cumulative distribution values of a normal probability distribution.....	9
Bibliography	12

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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. 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.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 9276-5 was prepared by Technical Committee ISO/TC 24, *Sieves, sieving and other sizing methods*, Subcommittee SC 4, *Sizing by methods other than sieving*.

ISO 9276 consists of the following parts, under the general title *Representation of results of particle size analysis*:

- *Part 1: Graphical representation*
- *Part 2: Calculation of average particle sizes/diameters and moments from particle size distributions*
- *Part 4: Characterization of a classification process*
- *Part 5: Methods of calculation relating to particle size analyses using logarithmic normal probability distribution*

Further parts are under preparation:

- *Part 3: Fitting of an experimental cumulative curve to a reference model*
- *Part 6: Descriptive and quantitative representation of particle shape and morphology*

Introduction

Many cumulative particle size distributions, $Q_r(x)$, may be plotted on special graph paper which allow the cumulative size distribution to be represented as a straight line. Scales on the ordinate and the abscissa are generated from various mathematical formulae. In this part of ISO 9276, it is assumed that the cumulative particle size distribution follows a logarithmic normal probability distribution.

In this part of ISO 9276, the size, x , of a particle represents the diameter of a sphere. Depending on the situation, the particle size, x , may also represent the equivalent diameter of a particle of some other shape.