

INTERNATIONAL STANDARD

ISO
9498

First edition
1993-07-01

Fluorspar — Experimental methods for checking the bias of sampling and sample preparation

*Spaths fluor — Méthodes expérimentales pour la vérification du biais de
l'échantillonnage et de la préparation des échantillons*



Reference number
ISO 9498:1993(E)

AVA **Documents**
Document Sharing Hub

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 9498 was prepared by Technical Committee ISO/TC 175, *Fluorspar*.

© ISO 1993

All rights reserved. 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

Printed in Switzerland

Fluorspar — Experimental methods for checking the bias of sampling and sample preparation

1 Scope

This International Standard specifies the experimental methods for checking the bias of the sampling and sample preparation of similar types of fluorspar carried out in accordance with the methods specified in ISO 8868.

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 8868:1989, *Fluorspar — Sampling and sample preparation*.

3 General conditions

3.1 In the experimental methods given here, the results obtained from the method to be checked (referred to as Method B) are compared with the results of a reference method (referred to as Method A) which, for all practical purposes, is considered to produce practically unbiased results, from technical and empirical viewpoints.

3.2 In the event that there is no significant difference in a statistical sense between the results obtained from Method B and Method A, then Method B may be adopted as a routine method, provided that agreement is reached between the parties concerned.

NOTE 1 In this International Standard, bias is assessed by application of the Student *t*-test (one-sided) at the 5 % level of significance, by determining whether the difference between the results of Method A and Method B is due to random variations or whether the results are statistically different.

3.3 The number of lots shall not be less than 20. The number of tests required depends on the standard deviation of the differences based on 20 tests and the value of the bias, δ , to be detected, as specified in clause 5.

The value of the bias (δ) to be detected shall be decided by agreement between the parties concerned, taking into account, from the technical and economical viewpoints, the precision of the various methods to be adopted in the experiment, i.e. sampling, sample preparation and measurement. As a guide, a bias value of half the precision specified in ISO 8868:1989, table 1 may be appropriate unless otherwise agreed.

3.4 Quality characteristics such as calcium fluoride (CaF_2) content, silica (SiO_2) content, moisture content, particle size distribution and others may be used as the basis of bias determination.

4 Sampling and sample preparation methods

4.1 Sampling

The reference method (Method A) for checking the bias of sampling is the stopped belt method. The method to be checked (Method B) shall be compared with this reference method on the same material. Examples for the experiments are given below.

EXAMPLE 1: Sampling from conveyors

Method A: Take each increment from the stopped conveyor at a specified place for the full width of the belt and the full thickness of the fluorspar stream; the minimum width of the cut shall be more than three times the nominal top size of the fluorspar and should exceed the width of the smallest increment shovel, as shown in ISO 8868:1989, table 4.

Method B (The method to be checked): Take each increment from a point selected each time at random within the fluorspar, according to ISO 8868:1989, 4.4.

EXAMPLE 2: Mechanical sampling

Method A: Take each increment according to Method A of Example 1.

Method B: Take each increment from the moving conveyor, using a mechanical sampler, close to where the increment was taken by Method A.

EXAMPLE 3: Sampling from wagons

Method A: Take each increment according to Method A of Example 1.

Method B: Take each increment at random from the new surface of the fluorspar exposed during loading into or discharging from a wagon.

EXAMPLE 4: Sampling from stockpiles

Method A: Take each increment according to Method A of Example 1.

Method B: Take each increment from new surface of the fluorspar exposed during reclaiming.

4.2 Sample preparation

Methods for composing a pair of gross samples, preparation of samples and testing shall be as given below.

- a) Increments obtained from one lot in accordance with Method A and Method B are grouped, respectively, so as to compose a pair of gross samples A and B.
- b) The gross samples A and B are prepared separately in accordance with ISO 8868 and tested in accordance with relevant International Standards.
- c) The above procedure is performed on 20 or more lots (see 3.3).

NOTE 2 The bias of the sampling method can be checked either on pairs of increments or on pairs of gross samples. It is recommended that this experiment be repeated for several types of fluorspar.