INTERNATIONAL STANDARD

ISO 9138

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Abrasive grains — Sampling and splitting

Grains abrasifs — Échantillonnage et division

Reference number
ISO 9138:1993(E)

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 9138 was prepared by Technical Committee ISO/TC 29, *Small tools*, Sub-Committee SC 5, *Grinding wheels and abrasives*.

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Abrasive grains — Sampling and splitting

1 Scope

This International Standard specifies a method for the sampling and splitting of a lot of abrasive grains.

This method may be used in the comparative testing of uniformly produced abrasive grains.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 9138. 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 9138 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 6344-1:—[1], *Coated abrasives — Grain size analysis — Part 1: Definitions, designation and principle.*

ISO 8486:1986, *Bonded abrasives — Grain size analysis — Designation and determination of grain size distribution of macrogrits F4 to F220.*

3 Apparatus

3.1 Sampling thief

The sampling thief is made from seamless steel tubing of inside diameter approximately 25 mm and length approximately 800 mm. The tube is pointed at one end and has a "T" handle at the other end. Holes are bored in a straight line, lengthwise along the tube, and spaced at 50 mm intervals. The diameter of the holes is determined by the size of particles to be sampled and should be approximately three times the size of the largest particle. However, it is usually sufficient to use holes 10 mm in diameter for grains designated F20, P20 and finer (see ISO 8486 and ISO 6344-1), while holes approximately 25 mm in diameter are recommended for grains No. 16 and coarser.

An alternative type of sampling thief may be used for grains No. 4 and finer. This sampling thief is again made from seamless steel tubing of inside diameter approximately 25 mm and length approximately 800 mm, but is provided with a lengthwise slot of approximately 25 mm in width. This type of sampling thief is also pointed at one end and provided with a "T" handle at the other end.

3.2 Splitter

A riffle-type sampler (commonly known as a Jones sampler) is generally used. It consists of a hopper made up of a series of chutes that are constructed to discharge alternately in opposite directions.

Other types and sizes of samplers may be used.

4 Procedure

4.1 Segregation

If transportation etc. has caused segregation, the lot shall be re-mixed before sampling is carried out.

4.2 Sampling

Press the sampling thief (3.1) at an angle of 45° to the horizontal, with the holes or slot facing downwards, into the container, rotate the sampling thief about its longitudinal axis by 180° and allow the tube to fill. Withdraw the tube, taking care not to rotate it, and remove the sample.

This procedure may be repeated as many times as necessary to obtain the required amount of sample.

1) To be published.

4.3 Sample splitting

Pass the sample obtained in 4.2 through the splitter (3.2), dividing it into two equal portions. Take one of these portions and, by passing it through the splitter, divide it into two portions again. Repeat this procedure until the sample is 25 % larger than the amount required for testing.

Alternatively the sample may be split manually by coning and quartering. Repeat this process until the sample is 25 % larger than the amount required for testing.

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