Wear testing of inorganic, nonmetallic materials using the Böhme abrasive wheel

DIN 52108

ICS 91.100.01

Supersedes August 1988 edition.

Prüfung anorganischer nichtmetallischer Werkstoffe – Verschleißprüfung mit der Schleifscheibe nach Böhme – Schleifscheiben-Verfahren

In keeping with current practice in standards published by the International Organization for Standardization (ISO), a comma has been used throughout as the decimal marker.

All dimensions are in millimetres.

Foreword

This standard has been prepared by Technical Committee *Gesteinskörnungen, Petrographie, Probenahme und Präzision* of the *Normenausschuss Materialprüfung* (Materials Testing Standards Committee).

Amendments

This standard differs from the August 1988 edition in that requirements relating to the corundum to be used and the size of the corundum containers have been specified, and the standard has been editorially revised.

Previous editions

DIN DVM 2108: 1933-03; DIN DVM 2108 = DIN 52108: 1939-10; DIN 52108: 1965-08, 1968-08, 1988-08.

Contents

Continued on pages 2 to 5.

Translation by DIN-Sprachendienst.

In case of doubt, the German-language original should be consulted as the authoritative text.

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1 Scope

This standard specifies an abrasive wheel method for testing the behaviour of inorganic, nonmetallic materials when subjected to wear caused by grain sliding.

2 Normative references

This standard incorporates, by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text, and the titles of the publications are listed below. For dated references, subsequent amendments to or revisions of any of these publications apply to this standard only when incorporated in it by amendment or revision. For undated references, the latest edition of the publication referred to applies.

DIN 878 Dial gauges

DIN EN ISO 6506-1 Metallic materials – Brinell hardness test – Part 1: Test method (ISO 6506-1 : 1999)

3 Concepts

Wear

The progressive loss of material from the surface of a solid body due to mechanical causes, i.e. contact with a solid, liquid or gaseous body accompanied by relative movement.

4 Principle

Square plates or cubes with a test surface of (50 ± 2) cm^2 are placed on the Böhme abrasive wheel, standard abrasive is spread over the test track and the wheel is rotated and the specimens subjected to an abrasive force of (294 ± 3) N for a given number of cycles. The wear is determined as a loss in either thickness or volume.

5 Apparatus

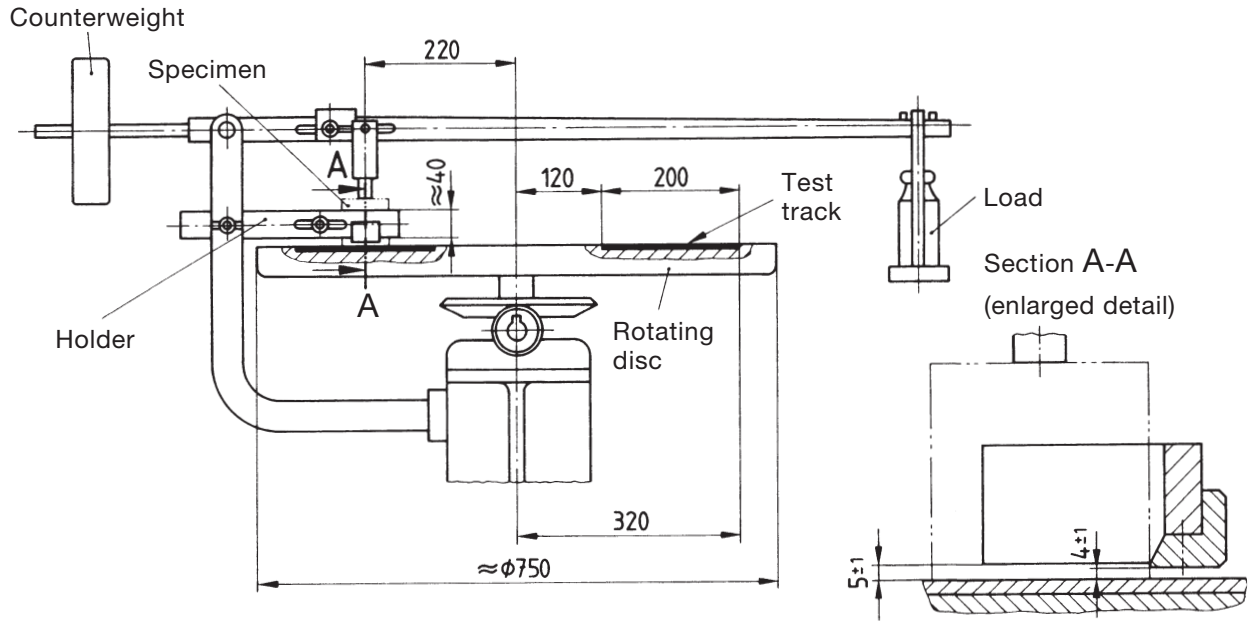
5.1 Thickness measuring device

A DIN 878-A dial gauge shall be used to established the loss in thickness, but it shall have, in addition to a surface plate, a plunger that is mounted on a ball bearing and has an annular contact face with an external diameter of 8 mm and an internal diameter of 5 mm.

5.2 Wear tester

5.2.1 Test set-up

The Böhme abrasive wheel as shown in figure 1 consists basically of a rotating disc with a defined test track to receive the abrasive, a specimen holder and a loading device.



The design shown is for illustrative purposes only; however, the dimensions shall be as specified.

Figure 1: Wear tester