DIN EN ISO 14689

ICS 93.020

Supersedes
DIN EN ISO 14689-1:2011-06

Geotechnical investigation and testing – Identification, description and classification of rock (ISO 14689:2017); English version EN ISO 14689:2018, English translation of DIN EN ISO 14689:2018-05

Geotechnische Erkundung und Untersuchung –
Benennung, Beschreibung und Klassifizierung von Fels (ISO 14689:2017);
Englische Fassung EN ISO 14689:2018,
Englische Übersetzung von DIN EN ISO 14689:2018-05

Reconnaissance et essais géotechniques –
Identification, description et classification des roches (ISO 14689:2017);
Version anglaise EN ISO 14689:2018,
Traduction anglaise de DIN EN ISO 14689:2018-05

Document comprises 32 pages

Translation by DIN-Sprachendienst.

In case of doubt, the German-language original shall be considered authoritative.

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A comma is used as the decimal marker.

National foreword

This document (EN ISO 14689:2018) has been prepared by Technical Committee ISO/TC 182 "Geotechnics" in collaboration with Technical Committee CEN/TC 341 "Geotechnical investigation and testing" (Secretariat: BSI, United Kingdom).

The responsible German body involved in its preparation was *DIN-Normenausschuss Bauwesen* (DIN Standards Committee Building and Civil Engineering), Working Committee NA 005-05-02 AA "Identification, description and classification of soil and rock (national mirror committee for ISO/TC 182/WG 1)".

The DIN documents corresponding to the international documents referred to in this document are as follows:

ISO 14688-1	DIN EN ISO 14688-1
ISO 14688-2	DIN EN ISO 14688-2
ISO 22475	DIN EN ISO 22475-1
ISO 25177	DIN EN ISO 25177

Amendments

This standard differs from DIN EN ISO 14689-1:2011-06 as follows:

a) the standard has been revised in form and substance;

b) Clauses 5 and 6 and Annexes B and C have been added.

Previous editions

DIN 4022: 1938-04
DIN 4022-1: 1955-02, 1969-11, 1987-09
DIN EN ISO 14689-1: 2004-04, 2011-06

National Annex NA
(informative)

Methods of describing rock types

NA.1 General

In addition to the methods of describing rock material laid down in Clause 5, the following methods should also be used which were contained in DIN 4022-1:1987-09 but which were not included in the International Standard.

NA.2 Determination of granularity

a) A rock is to be classed as highly granular if it is seen to consist only of individual grains of the same or differing size (see Figure NA.1);

b) a rock is to be classed as partly granular if there are individual grains in a uniform rock mass that cannot be seen to be granular (see Figure NA.2);

c) a rock is to be classed as non-granular if no individual grains can be distinguished (see Figure NA.3).

NA.3 Determination of grain size

If the grains can be clearly differentiated in a sedimentary rock sample, the grain (particle) size is to be determined as in DIN EN ISO 14688-1.

In non-granular rock, a shiny scratch or cut surface is an indication of the presence of clay minerals.

NA.4 Determination of bulk density

a) A rock is to be classed as dense if no pores can be seen (see Figure NA.3);

b) a rock is to be classed as porous if its pores are not larger than a sand grain (≤ 2 mm) and are largely irregularly distributed (see Figure NA.4);

c) a rock is to be classed as highly porous if its pores are larger than a sand grain (> 2 mm) and are largely irregularly distributed (see Figure NA.5).

NA.5 Determination of grain bond strength

a) Poor grain bond strength: Particles can be easily rubbed off using fingers;

b) fair grain bond strength: It is easy to scratch a rock sample using a steel nail or knife;

c) high grain bond strength: It is difficult to scratch a rock sample using a steel nail or knife;

d) very high grain bond strength: It is not possible to scratch a rock sample using a steel nail or knife.

NA.6 Determining grain hardness

The hardness of highly granular or partly granular rock is determined on individual grains that are as large as possible. For non-granular rock, grain hardness can also be determined on sample surfaces, which then describes the hardness of the matrix.

NA.7 Colour determination

Colour is determined by inspecting fresh fracture surfaces, and differences in colour are described as in 5.1. It is also important to state whether and to what extent grains, streaks, and veins, for example, differ in colour from the rock mass.

NA.8 Odour

A specimen is carefully hit with a hammer and the odour recorded; for example, for bituminous rock there will be an unpleasant, foul odour. Sapropel smells of violets, and some types of volcanic rock smell of bad eggs.

A strong earthy odour when a specimen is breathed on indicates clayey rock.

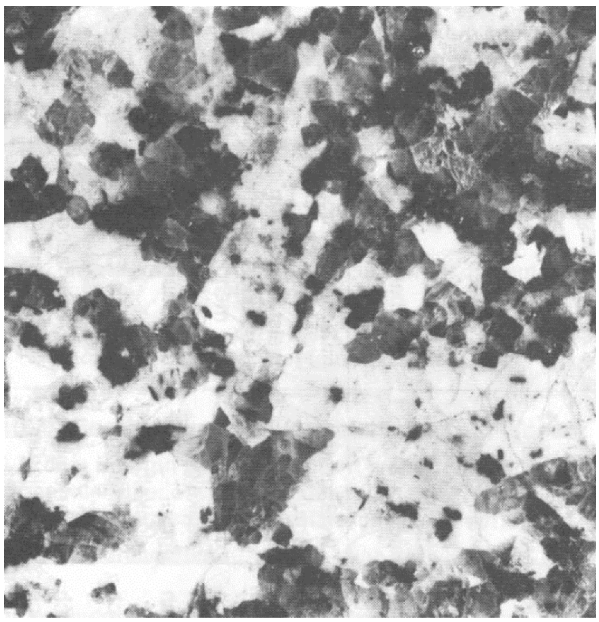

Figure NA.1 — — Highly granular rock (1 cm original ≙ 0,6 mm in figure)

Figure NA.2 — Partly granular rock (1 cm original ≙ 5 mm in figure)