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Standards

Irish Standard  
I.S. EN ISO 14689:2018

# Geotechnical investigation and testing - Identification, description and classification of rock (ISO 14689:2017)

## I.S. EN ISO 14689:2018

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## National Foreword

I.S. EN ISO 14689:2018 is the adopted Irish version of the European Document EN ISO 14689:2018, Geotechnical investigation and testing - Identification, description and classification of rock (ISO 14689:2017)

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EUROPEAN STANDARD

EN ISO 14689

NORME EUROPÉENNE

EUROPÄISCHE NORM

February 2018

ICS 93.020

Supersedes EN ISO 14689-1:2003

English Version

## Geotechnical investigation and testing - Identification, description and classification of rock (ISO 14689:2017)

Reconnaissance et essais géotechniques -  
Identification, description et classification des roches  
(ISO 14689:2017)

Geotechnische Erkundung und Untersuchung -  
Benennung, Beschreibung und Klassifizierung von Fels  
- Teil 1: Benennung und Beschreibung (ISO  
14689:2017)

This European Standard was approved by CEN on 20 November 2017.

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**EN ISO 14689:2018 (E)**

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## **European 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” the secretariat of which is held by BSI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by August 2018, and conflicting national standards shall be withdrawn at the latest by August 2018.

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

This document supersedes EN ISO 14689-1:2003.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

### **Endorsement notice**

The text of ISO 14689:2017 has been approved by CEN as EN ISO 14689:2018 without any modification.

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**INTERNATIONAL  
STANDARD**

**ISO  
14689**

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**Geotechnical investigation and  
testing — Identification, description  
and classification of rock**

*Reconnaissance et essais géotechniques — Identification, description  
et classification des roches*



Reference number  
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**ISO 14689:2017(E)**



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## ISO 14689:2017(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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 182, *Geotechnics*.

This first edition of ISO 14689 cancels and replaces ISO 14689-1:2003, which has been technically revised.

## **Introduction**

This document gives details of the procedures to be followed in the identification and description of rocks which are to be used at all stages of ground investigation and geotechnical design. This comprises the description of the rock material and the rock mass characteristics in terms of the bedding and discontinuities.

The level of detail in a description will depend on the characteristics of the rock, the size and quality of the rock exposure or sample, and the needs of the particular project. The person carrying out the field identification and description should be suitably qualified, skilled and experienced to make a correct and appropriate description and experienced in the geological materials involved in the investigation.

Practice in rock identification and description varies from country to country, in part reflecting significant differences in geological conditions. In addition, the quality of samples available for description varies due to the investigation methods employed, as methods of investigation have been developed in response to the ground conditions present.



# Geotechnical investigation and testing — Identification, description and classification of rock

## 1 Scope

This document specifies the rules for the identification and description of rock material and mass on the basis of mineralogical composition, genetic aspects, structure, grain size, discontinuities and other parameters. It also provides rules for the description of other characteristics as well as for their designation.

This document applies to the description of rock for geotechnics and engineering geology in civil engineering. The description is carried out on cores and other samples of rock and on exposures of rock masses.

Rock mass classification systems using one or more descriptive parameters to suggest likely rock mass behaviour are beyond the scope of this document (see Bibliography).

NOTE Identification and classification of soil for engineering purposes are covered in ISO 14688-1 and ISO 14688-2. Identification and description of materials intermediate between soil and rock are carried out using the procedures in ISO 14688-1, ISO 14688-2 and this document, as appropriate.

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 14688-1, *Geotechnical investigation and testing — Identification and classification of soil — Part 1: Identification and description*

ISO 14688-2, *Geotechnical investigation and testing — Identification and classification of soil — Part 2: Principles for a classification*

## 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— IEC Electropedia: available at <http://www.electropedia.org/>

— ISO Online browsing platform: available at <http://www.iso.org/obp>

### 3.1

#### **discontinuity**

break in the *rock material* (3.7) continuity that is open or can open under the stress increase or reduction as a result of the engineering works

### 3.2

#### **duricrust**

cemented zone occurring in weathered *rock* (3.5) or soil formed by the mobilization and deposition of minerals often due to pedogenic or evaporative processes

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