



BSI Standards Publication

Geotechnical investigation and testing - Laboratory testing of soil

Part 12: Determination of liquid and plastic limits

This is a preview of "BS EN ISO 17892-12:2...". [Click here to purchase the full version from the ANSI store.](#)

National foreword

This British Standard is the UK implementation of EN ISO 17892-12:2018. It is identical to ISO 17892-12:2018. It partially supersedes BS 1377-2:1990, specifically clauses 4 and 5 (only).

The UK participation in its preparation was entrusted to Technical Committee B/526/3, Site investigation and ground testing.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

© The British Standards Institution 2018
Published by BSI Standards Limited 2018

ISBN 978 0 580 94083 5

ICS 93.020; 13.080.20

Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 July 2018.

Amendments/corrigenda issued since publication

Date	Text affected
------	---------------

EUROPÄISCHE NORM

July 2018

ICS 13.080.20; 93.020

Supersedes CEN ISO/TS 17892-12:2004, CEN

English Version

Geotechnical investigation and testing - Laboratory testing of soil - Part 12: Determination of liquid and plastic limits (ISO 17892-12:2018)

Reconnaissance et essais géotechniques -
Essais de laboratoire sur les sols - Partie
12: Détermination des limites de liquidité
et de plasticité (ISO 17892-12:2018)

Geotechnische Erkundung und
Untersuchung - Laborversuche an
Bodenproben - Teil 12: Bestimmung der
Zustandsgrenzen (ISO 17892-12:2018)

This European Standard was approved by CEN on 15 June 2018.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of 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 United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

This is a preview of "BS EN ISO 17892-12:2...". [Click here to purchase the full version from the ANSI store.](#)

European foreword

This document (EN ISO 17892-12:2018) 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 January 2019, and conflicting national standards shall be withdrawn at the latest by January 2019.

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 CEN ISO/TS 17892-12:2004.

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.

This is a preview of "BS EN ISO 17892-12:2...". Click here to purchase the full version from the ANSI store.

Contents

	Page
Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Apparatus	2
4.1 General.....	2
4.2 Fall cone method.....	3
4.3 Casagrande method.....	5
4.4 Plastic limit equipment.....	6
5 Test procedure	7
5.1 Choice of liquid limit method.....	7
5.2 Specimen preparation.....	7
5.3 Determination of liquid limit by the fall cone method.....	8
5.4 Determination of liquid limit by the Casagrande method.....	10
5.5 Determination of plastic limit.....	12
6 Test results	13
6.1 Proportion of sample smaller than 0,4 mm.....	13
6.2 Liquid limit by the fall cone method.....	13
6.3 Liquid limit by the Casagrande method.....	15
6.4 Plastic limit.....	15
6.5 Plasticity index.....	16
7 Test report	16
7.1 Mandatory reporting.....	16
7.2 Optional reporting.....	16
Annex A (normative) Calibration, maintenance and checks	18
Annex B (normative) Additional parameters	25
Bibliography	27

This is a preview of "BS EN ISO 17892-12:2...". Click here to purchase the full version from the ANSI store.

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).

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).

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.

This document was prepared by the European Committee for Standardization (CEN) Technical Committee CEN/TC 341 *Geotechnical investigation and testing*, in collaboration with ISO Technical Committee TC 182, *Geotechnics*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This first edition of ISO 17892-12 cancels and replaces ISO/TS 17892-12:2004, which has been technically revised. It also incorporates ISO/TS 17892-12:2004/Cor.1:2006.

A list of all the parts in the ISO 17892 series can be found on the ISO website.

This is a preview of "BS EN ISO 17892-12:2...". [Click here to purchase the full version from the ANSI store.](#)

Introduction

This document covers areas in the international field of geotechnical engineering never previously standardised internationally. It is intended that this document presents broad good practice and significant differences with national documents is not anticipated. It is based on international practice (see Reference [1]).

This is a preview of "BS EN ISO 17892-12:2...". [Click here to purchase the full version from the ANSI store.](#)

This is a preview of "BS EN ISO 17892-12:2...". Click here to purchase the full version from the ANSI store.

Geotechnical investigation and testing - Laboratory testing of soil —

Part 12: Determination of liquid and plastic limits

1 Scope

This document specifies methods for the determination of the liquid and plastic limits of a soil. These comprise two of the Atterberg limits for soils.

The liquid limit is the water content at which a soil changes from the liquid to the plastic state.

This document describes the determination of the liquid limit of a specimen of natural soil, or of a specimen of soil from which material larger than about 0,4 mm has been removed. This document describes two methods: the fall cone method and the Casagrande method.

NOTE The fall cone method in this document should not be confused with that of ISO 17892-6.

The plastic limit of a soil is the water content at which a soil ceases to be plastic when dried further.

The determination of the plastic limit is normally made in conjunction with the determination of the liquid limit. It is recognized that the results of the test are subject to the judgement of the operator, and that some variability in results will occur.

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 3310-1, *Test sieves — Technical requirements and testing — Part 1: Test sieves of metal wire cloth*

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

ISO 17892-1, *Geotechnical investigation and testing — Laboratory testing of soil — Part 1: Determination of water content*

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 <https://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp>

3.1 liquid limit

w_L

water content at which a soil passes from the liquid to the plastic state, as determined by the liquid limit test