

INTERNATIONAL
STANDARD

ISO
11274

Second edition
2019-09

**Soil quality — Determination of the
water-retention characteristic —
Laboratory methods**

*Qualité du sol — Détermination de la caractéristique de la rétention
en eau — Méthodes de laboratoire*



Reference number
ISO 11274:2019(E)

© ISO 2019



COPYRIGHT PROTECTED DOCUMENT

© ISO 2019

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Fax: +41 22 749 09 47
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Contents

	Page
Foreword	v
Introduction	vi
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Guidelines for choice of method	2
4.1 General	2
4.2 Sand, kaolin or ceramic suction tables for determination of pressures from 0 kPa to -50 kPa	2
4.3 Porous plate and burette apparatus for determination of pressures from 0 kPa to -20 kPa	2
4.4 Pressure plate extractor for determination of pressures from -5 kPa to -1 500 kPa	2
4.5 Pressure membrane cells for determination of pressures from -33 kPa to -1 500 kPa	3
5 Sampling	3
5.1 General requirements	3
5.2 Sample preparation	4
6 Determination of the soil water characteristic using sand, kaolin and ceramic suction tables	5
6.1 Principle	5
6.2 Apparatus	5
6.3 Preparation of suction tables	6
6.4 Procedure	6
6.5 Expression of results	6
6.5.1 Procedure for soils containing less than 20 % stones (diameter greater than 2 mm)	6
6.5.2 Conversion of results to a fine soil basis	7
7 Determination of soil water characteristic using a porous plate and burette	8
7.1 Principle	8
7.2 Apparatus	8
7.3 Assembly of porous plate/burette apparatus	8
7.4 Procedure	9
7.5 Expression of results	9
8 Determination of soil water characteristic by pressure plate extractor	11
8.1 Principle	11
8.2 Apparatus	11
8.3 Assembly of apparatus	12
8.4 Procedure	12
8.5 Calculation and expression of results	13
8.5.1 Procedure for stoneless soils	13
8.5.2 Procedure for stony soils	13
9 Determination of soil water characteristic using pressure membrane cells	14
9.1 Principle	14
9.2 Apparatus	14
9.3 Assembly of apparatus	14
9.4 Procedure	15
9.5 Expression of results	16
9.6 Test report	16
10 Test report	16
11 Precision	17