PD CEN/TS 14416:2014

BSI Standards Publication

Geosynthetic barriers – Test method for determining the resistance to root

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National foreword

This Published Document is the UK implementation of CEN/TS 14416:2014. It supersedes DD CEN/TS 14416:2005 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee B/553, Geotextiles and geomembranes.

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.

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English Version

Geosynthetic barriers - Test method for determining the resistance to roots

Barrières géosynthétiques - Méthode d'essai pour la détermination de la résistance aux racines

Geosynthetische Dichtungsbahnen - Prüfverfahren zur Bestimmung des Widerstandes gegen Wurzeln

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Foreword

This document (CEN/TS 14416:2014) has been prepared by Technical Committee CEN/TC 189 “Geosynthetics”, the secretariat of which is held by NBN.

This document supersedes CEN/TS 14416:2005.

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Introduction

This Technical Specification defines a method for testing the resistance of a geosynthetic barrier to penetration by roots. Such resistance is a requirement for many uses of geosynthetic barriers.

This Technical Specification does not purport to address all safety problems, if any, associated with its use.

1 Scope

This Technical Specification describes a laboratory procedure for the rapid testing of the resistance of polymeric, bituminous or clay geosynthetic barriers to root penetration. It is suitable for testing of welded seams or other areas of potential weakness.

A longer test that may be more suitable for testing the long-term resistance of geosynthetic barriers is described in EN 13948.

2 Principle

A section of geosynthetic barrier is placed in soil into which seeds are sown. Six to eight weeks later the geosynthetic barrier is examined to see whether it has been penetrated by the roots of the young plants.

3 Apparatus

The following equipment shall be used:

— four dry unglazed clay flower pots approximately 220 mm high. The diameter at the base of the pot shall be approximately 140 mm, the diameter at the top 250 mm, and the angle between side and central axis approximately 13°. A 40 mm wide band shall be painted on the inside of the pot, about 100 mm above the base, and allowed to dry;

— lime-free soil (pH 5 to 6), mixed with a little loam or high quality potting soil;

Compost should not be used.

— lupin seeds (lupinus alba);

— silicone mastic sealant or mortar-sand mixture;

— bitumen 85/40;

— glass tubes;

— anti-mould agent.

4 Procedure

— Fill the pots with the soil as far as the lower edge of the painted band, then seal and humidify.

— Cut three discs of geosynthetic barrier to cover the soil exactly.

— Place the geosynthetic barrier on the soil of three of the pots with the upper side uppermost.

— Carefully seal the gap between geosynthetic barrier and pot with the sealant or mortar-sand mixture.

— Prepare the fourth pot in which the geosynthetic barrier is replaced by a 20 mm thick layer of bitumen 85/40 (oxidized grade bitumen with a softening point of (85 ± 5) °C and a penetration temperature of (40 ± 5) °C).

— Cover the geosynthetic barrier or the bitumen with 90 mm of soil, then seal and humidify.