INTERNATIONAL STANDARD

ISO 9864

Second edition
2005-02-15

Geosynthetics — Test method for the determination of mass per unit area of geotextiles and geotextile-related products

Géosynthétiques — Méthode d'essai pour la détermination de la masse surfacique des géotextiles et produits apparentés

Reference number
ISO 9864:2005(E)

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Foreword

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International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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.

ISO 9864 was prepared by the European Committee for Standardization (CEN) in collaboration with Technical Committee ISO/TC 221, *Geosynthetics*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

Throughout the text of this document, read “...this European Standard...” to mean “...this International Standard...”.

This second edition cancels and replaces the first edition (ISO 9864:1990), which has been technically revised.

Contents

Foreword

This document (EN ISO 9864:2005) has been prepared by Technical Committee CEN/TC 189 "Geosynthetics", the secretariat of which is held by IBN in collaboration with Technical Committee ISO/TC 221 " Geosynthetics".

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of an identical text or by endorsement, at the latest by August 2005, and conflicting national standards shall be withdrawn at the latest by August 2005.

This document supersedes EN 965:1995

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

1 Scope

This document specifies a method for the determination of mass per unit area of geotextiles and geotextile-related products for identification purposes and for use in technical data sheets.

The method is applicable to all geotextiles and geotextile-related products.

2 Normative references

The following referenced documents are indispensable for the application 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 554 *Standard atmospheres for conditioning and/or testing — Specifications.*

EN ISO 9862, *Geosynthetics — Sampling and preparation of test specimens (ISO 9862:2005).*

3 Principle

The mass per unit area is calculated by weighing square or circular specimens of known dimensions cut from positions distributed over the full width and length of the sample.

4 Procedure

4.1 Specimens

Cut no less than ten specimens in accordance with EN ISO 9862 to a nominal size of 100 cm², using a die.

Cut the specimens in such a way that they are representative of the material to be tested. Measure the specimens to an accuracy of 0,5 %. If the structure of the product is such that a 100 cm² specimen is not representative, it may be necessary to use a larger specimen size in order to achieve the necessary accuracy of measurement.

Geotextile-related products with relatively large mesh sizes – such as geogrids or geonets – shall be cut half way between two links of the constituent elements. A specimen shall include at least 5 constituent elements in both directions. The area of the specimen shall be individually determined for each specimen.

Condition the specimens in accordance with ISO 554 for a period of 24 h unless it can be shown that the results are not affected by omitting this procedure.

4.2 Weighing

Weigh each specimen to an accuracy of 10 mg.

5 Expression of results

Calculate the mass per unit area ρ_A of each specimen, expressed in grams per square metre, using the equation

$$\rho_A = \frac{m \times 10\,000}{A}$$

where:

m is the mass of the specimen, in g;

A is the area of the specimen, in cm^2.

Calculate the mean mass per unit area, rounding the result to the nearest gram per square metre, and the coefficient of variation.

6 Test report

The test report shall include the following particulars:

a) statement that the test was performed in accordance with this document;

b) number of specimens tested;

c) conditioning atmosphere used;

d) in case of a specimen size larger than 100 cm^2, the size used, and a description (words, sketch or photograph) of the structure;

e) mean value of mass per unit area, in grams per square metre;

f) coefficient of variation;

g) details of any deviation from the specified test procedure;

h) date of the test.

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Price based on 2 pages

INTERNATIONAL STANDARD

ISO 12480-4

First edition
2007-03-01

Cranes — Safe use —

Part 4: Jib cranes

Appareils de levage à charge suspendue — Sécurité d'emploi —

Partie 4: Grues à flèche

Reference number
ISO 12480-4:2007(E)

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ISO 12480-4 was prepared by Technical Committee ISO/TC 96, *Cranes*, Subcommittee SC 8, *Jib cranes*.

ISO 12480 consists of the following parts, under the general title *Cranes — Safe use*:

— *Part 1: General*

— *Part 3: Tower cranes*

— *Part 4: Jib cranes*

Cranes — Safe use —

Part 4: Jib cranes

1 Scope

This part of ISO 12480 establishes required practices for the safe use of jib cranes as defined in ISO 4306-1. It is intended to be used in conjunction with ISO 12480-1.

2 Normative references

The following referenced documents are indispensable for the application 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 4306-1, *Cranes — Vocabulary — Part 1: General*

ISO 12480-1:1997, *Cranes — Safe use — Part 1: General*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 12480-1 apply.

4 Management of crane operations

4.1 Safe system of work

All crane lifting operations shall be carried out in accordance with a safe system of work and under the control of an appointed person as defined in ISO 12480-1.

A safe system of work shall be prepared by the user organization in accordance with ISO 12480-1:1997, 4.1, and communicated to all personnel involved in the operation.

In the case of repetitive routine operations, a single generic safe system of work may be adequate, or a few systems may cover a range of operations. Documented safe systems of work shall be prepared for complex lifting operations or the lifting of persons.

All personnel involved in a lifting operation shall be trained in the use of the appropriate safe system of work and, in particular, their specific duties and responsibilities.

In certain crane operating areas involving a number of cranes or associated activities, such as loading/unloading terminals or congested areas of factories, consideration should be given to restricting the access of vehicular and pedestrian traffic to the area.

4.2 Control of crane operation

The crane operation shall be under the overall control of an appointed person in accordance with ISO 12480-1:1997, 4.2, who shall have the authority to stop the operation.

The appointed person could have control of a number of cranes undertaking routine repetitive operations, in which case the appointed person may delegate authority to a signaller or signallers, who shall have the authority to stop the operation. In the case of simple operations where a signaller is not required, the crane operator may have the delegated authority.

4.3 Contractual considerations

Contractual considerations shall be in accordance with ISO 12480-1:1997, 4.3.1 and 4.3.2.

5 Selection, responsibilities and minimum requirements of personnel

5.1 General

The general requirements shall be as specified in ISO 12480-1:1997, 5.1.

5.2 Duties of appointed person

The duties of the appointed person are set out in ISO 12480-1:1997, 5.2.

The appointed person shall arrange the programme of work such that, in the appointed person's judgement, no operator has to undertake a period of work that could affect the operator's ability to carry out his/her duties. Environmental conditions shall also be taken into account.

Control of certain aspects of the crane operation may be delegated to the signaller or the crane driver, but the overall responsibility for the operation shall remain with the appointed person.

5.3 Requirements of personnel

The duties and requirements of personnel are set out in ISO 12480-1:1997, 5.2 to 5.7.

All personnel shall be trained and competent to undertake their duties.

6 Safety

The appointed person shall be given the necessary authority and resources to ensure that appropriate equipment and systems to achieve safety are in use.

The appointed person shall be responsible for implementing the requirements of ISO 12480-1:1997, 6.2 to 6.5.

7 Selection and placement of cranes

The owner of the crane or the user organisation is responsible for the selection and placement of the crane.

8 Lifting of persons

Except in emergency situations, such as the lifting of injured personnel, the raising and lowering of personnel by cranes shall only be undertaken in exceptional circumstances when it is not possible to gain access by less hazardous means and where permitted under national regulations. Such operations require special equipment, careful planning and execution, as set out in ISO 12480-1:1997, Clause 13.

9 Pre-use inspections

Pre-use inspections shall be carried out at the start of each shift by the operator in accordance with ISO 12480-1:1997, 10.2.3.

10 Maintenance, inspection and testing of cranes

The owner of the crane is responsible for the maintenance, inspection and testing of the crane in accordance with ISO 12480-1:1997, 10.2.3 to 10.2.5 and 10.5, and as required by national legislation.

The owner shall keep records of all maintenance, inspection and testing undertaken on the crane and its components throughout the life of the crane, commencing with the original test certificates.