NSAI
Standards

Irish Standard
I.S. EN ISO 4759-3:2016

Tolerances for fasteners - Part 3: Washers for bolts, screws and nuts - Product grades A, C and F (ISO 4759-3:2016)

I.S. EN ISO 4759-3:2016

Incorporating amendments/corrigenda/National Annexes issued since publication:

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I.S. xxx: Irish Standard — national specification based on the consensus of an expert panel and subject to public consultation.

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This document replaces/revises/consolidates the NSAI adoption of the document(s) indicated on the CEN/CENELEC cover/Foreword and the following National document(s):

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NSAI 1 Swift Square, Northwood, Santry Dublin 9	T +353 1 807 3800 F +353 1 807 3838 E standards@nsai.ie W NSAI.ie	Sales: T +353 1 857 6730 F +353 1 857 6729 W standards.ie

Údarás um Chaighdeáin Náisiúnta na hÉireann

National Foreword

I.S. EN ISO 4759-3:2016 is the adopted Irish version of the European Document EN ISO 4759-3:2016, Tolerances for fasteners - Part 3: Washers for bolts, screws and nuts - Product grades A, C and F (ISO 4759-3:2016)

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In line with international standards practice the decimal point is shown as a comma (,) throughout this document.

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 4759-3

June 2016

ICS 21.060.30

Supersedes EN ISO 4759-3:2000

English Version

Tolerances for fasteners - Part 3: Washers for bolts, screws and nuts - Product grades A, C and F (ISO 4759-3:2016)

Tolérances pour fixations - Partie 3: Rondelles pour vis et écrous - Grades A, C et F (ISO 4759-3:2016)

Toleranzen für Verbindungselemente - Teil 3: Scheiben für Schrauben und Muttern - Produktklassen A, C und F (ISO 4759-3:2016)

This European Standard was approved by CEN on 19 May 2016.

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, 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

Ref. No. EN ISO 4759-3:2016 E

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European foreword

This document (EN ISO 4759-3:2016) has been prepared by Technical Committee ISO/TC 2 "Fasteners" in collaboration with Technical Committee CEN/TC 185 "Fasteners" the secretariat of which is held by DIN.

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 December 2016, and conflicting national standards shall be withdrawn at the latest by December 2016.

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

This document supersedes EN ISO 4759-3:2000.

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, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 4759-3:2016 has been approved by CEN as EN ISO 4759-3:2016 without any modification.

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INTERNATIONAL STANDARD

ISO
4759-3

Fourth edition
2016-06-01

Tolerances for fasteners —

Part 3:
Washers for bolts, screws and nuts — Product grades A, C and F

Tolérances pour fixations —

Partie 3: Rondelles pour vis et écrous — Grades A, C et F

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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).

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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 meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 2, *Fasteners*.

This fourth edition cancels and replaces the third edition (ISO 4759-3:2000), which has been technically revised.

In comparison to ISO 4759-3:2000, the following changes have been made.

a) the scope has been amended;

b) the normative references have been updated;

c) a new Clause 3 "Symbols and abbreviated terms" has been added;

d) new product grade F has been included (F for Fine tolerances);

e) tolerances for chamfers have been included;

f) in Table A.1 tolerances for standard tolerance grades IT11 and IT14 have been included and IT16 has been deleted;

g) in Tables A.2 and A.3 limit deviations for tolerance classes h13 and H12 respectively have been included;

h) the bibliography has been updated;

i) this part of ISO 4759 has been editorially revised.

ISO 4759 consists of the following parts, under the general title *Tolerances for fasteners*:

— *Part 1: Bolts, screws, studs and nuts — Product grades A, B and C*

— *Part 3: Washers for bolts, screws and nuts — Product grades A, C and F*

INTERNATIONAL STANDARD

ISO 4759-3:2016(E)

Tolerances for fasteners —

Part 3:
Washers for bolts, screws and nuts — Product grades A, C and F

1 Scope

This part of ISO 4759 specifies tolerances for flat washers of product grades A, C and F with nominal diameters of 1 mm to 150 mm inclusive, designed to be used in bolted joints in combination with bolts, screws, studs and nuts.

This part of ISO 4759 may be applied to non-flat washers however it does not include all the tolerances related to these washers.

It applies to non-captive and captive washers, and to standard and non-standard washers.

It does not apply to dynamic disc springs.

Washers of product grades F and A are intended to be used with bolts, screws, studs and nuts of product grades A and B; washers of product grade C are intended to be used with bolts, screws, studs and nuts of product grade C.

NOTE   The product grade refers to a specific tolerance range related to dimensional and geometrical characteristics (product grade F for fine tolerances, product grade A for precise tolerances, product grade C for large tolerances).

Annex A presents tolerances taken from ISO 286-1 and ISO 286-2.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 1101, *Geometrical product specifications (GPS) — Geometrical tolerancing — Tolerances of form, orientation, location and run-out*

ISO 2692, *Geometrical product specifications (GPS) — Geometrical tolerancing — Maximum material requirement (MMR), least material requirement (LMR) and reciprocity requirement (RPR)*

3 Symbols

c_1 height of the internal chamfer, mm

c_2 height of the external chamfer, mm

d_1 clearance hole, mm

d_2 outside diameter, mm

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Product Page