Irish Standard
I.S. EN 3909:2016

Aerospace series - Test fluids and test methods for electrical and optical components and sub-assemblies

I.S. EN 3909:2016

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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Údarás um Chaighdeáin Náisiúnta na hÉireann

National Foreword

I.S. EN 3909:2016 is the adopted Irish version of the European Document EN 3909:2016, Aerospace series - Test fluids and test methods for electrical and optical components and sub-assemblies

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

Compliance with this document does not of itself confer immunity from legal obligations.

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 3909

May 2016

ICS 49.060

Supersedes EN 3909:2007

English Version

Aerospace series - Test fluids and test methods for electrical and optical components and sub-assemblies

Série aérospatiale - Fluides d'essais et méthodes d'essai pour composants et sous-ensembles électriques et optiques

Luft- und Raumfahrt - Prüfflüssigkeiten und Prüfverfahren für elektrische und optische Bauelemente und Untergruppen

This European Standard was approved by CEN on 27 September 2015.

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

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European Foreword

This document (EN 3909:2016) has been prepared by the Aerospace and Defence Industries Association of Europe - Standardization (ASD-STAN).

After enquiries and votes carried out in accordance with the rules of this Association, this Standard has received the approval of the National Associations and the Official Services of the member countries of ASD, prior to its presentation to CEN.

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 November 2016, and conflicting national standards shall be withdrawn at the latest by November 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 3909:2007.

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.

1 Scope

This standard specifies the list of test fluids to be used to demonstrate that components and sub-assemblies will not be adversely affected by contamination by fluids types that they may typically be exposed to.

The fluids listed are representative of those commonly used and encountered in airborne and ground operations, and align with the requirements of fluids susceptibility of ISO 7137. This shall not be considered an exhaustive list and additional test fluids may be instructed in the product standard, against which compliance needs to be demonstrated. This standard, when used in conjunction with the test requirements defined in Clause 6 or the product standard shall be considered the starting point to test a component to determine its minimum performance capability when exposed to the fluids listed.

Test results obtained from a number of sources over a considerable period of time have shown that, in many cases, widely varying results can be obtained when using fluids that are used in service. The practice of specifying fluids based on performance criteria rather than their constituents can mean variations in test results between batches of the fluid obtained from different manufacturers, or even from the same manufacturer.

For this reason the EN 3909 Standard recommends the use of "standard test fluids" which are specified by their constituents and contain the chemicals that may be found in commonly used fluids.

Where equipment may be exposed to fluid types that are not covered by Table 1 or where specific test fluids are considered to be necessary, the product standard shall identify the particular fluid required. If a manufacturer chooses to include additional test fluids (e.g. to satisfy a customer requirement), they do so at their own risk.

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.

EN 2349-405, *Aerospace series — Requirements and test procedures for relays and contactors — Part 405: Fluid resistance*

EN 2591-315, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 315: Fluid resistance*

EN 3475-411, *Aerospace series — Cables, electrical, aircraft use — Test methods — Part 411: Resistance to fluids*

EN 3745-411, *Aerospace series — Fibres and cables, optical, aircraft use — Test methods — Part 411: Resistance to fluids*

EN 3841-405, *Aerospace series — Circuit breakers — Test methods — Part 405: Fluid resistance*

EN 4057-303, *Aerospace series — Cable ties for harnesses — Test methods — Part 303: Resistance to fluids*

ISO 1817, *Rubber, vulcanized or thermoplastic — Determination of the effect of liquids*

ISO 7137, A*ircraft — Environmental conditions and test procedures for airborne equipment*

ISO 11075, *Aircraft — De-icing/anti-icing fluids — ISO type I*

ISO 11078, *Aircraft — De-icing/anti-icing fluids — ISO types II, III and IV*

MIL-PRF-87937, *Cleaning Compound, Aerospace Equipment*[1)]

AMS 1428G, *Fluid, Aircraft Deicing/Anti-Icing, Non-Newtonian, (Pseudoplastic), SAE Types II, III, and IV*[2)]

AMS 1476B, *Deodorant, Aircraft Toilet*[2)]

1) Published by: DoD National (US) Mil. Department of Defense (http://www.defenselink.mil/).

2) Published by: SAE National (US) Society of Automotive Engineers (http://www.sae.org/).