



NSAI
Standards

Irish Standard
I.S. EN 2002-16:2019&LC:2019

Aerospace series - Metallic materials -
Test methods - Part 16: Non-destructive
testing - Penetrant testing

I.S. EN 2002-16:2019&LC:2019

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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National Foreword

I.S. EN 2002-16:2019&LC:2019 is the adopted Irish version of the European Document EN 2002-16:2019, Aerospace series - Metallic materials - Test methods - Part 16: Non-destructive testing - Penetrant testing

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Correction Notice

Reference: EN 2002-16:2019

Title: Aerospace series - Metallic materials - Test methods - Part 16: Non-destructive testing - Penetrant testing

Work Item: 04000909

Brussels, 2019-12-18

Please include the following minor editorial correction(s) in the document related to:

the following language version(s) :

- English
- French
- German

for the following procedure :

- PQ/UQ
- Enquiry
- 2nd Enquiry
- Parallel Enquiry
- 2nd Parallel Enquiry
- Formal Vote
- 2nd Formal Vote
- Parallel Formal Vote
- 2nd Parallel Formal Vote
- UAP
- TC Approval
- 2nd TC Approval
- Publication
- Parallel Publication

It has been brought to our attention that this document, issued on 2019-11-27, requires modification.

The headers were not changed after the formal vote and still read "FprEN 2002-16:2018".

The headers were corrected to "EN 2002-16:2019".

Please find enclosed the updated English version.

We apologise for any inconvenience this may cause.

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EUROPEAN STANDARD

EN 2002-16

NORME EUROPÉENNE

EUROPÄISCHE NORM

November 2019

ICS 49.025.05; 49.025.15

English Version

Aerospace series - Metallic materials - Test methods - Part 16: Non-destructive testing - Penetrant testing

Série aérospatiale - Matériaux métalliques - Méthodes
d'essais - Partie 16 : Essais non destructifs - Examen
par ressuage

Luft- und Raumfahrt - Metallische Werkstoffe -
Prüfverfahren - Teil 16: Zerstörungsfreie Prüfung -
Eindringprüfung

This European Standard was approved by CEN on 8 July 2018.

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.

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CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Contents		Page
European foreword		3
Introduction		4
1	Scope.....	5
2	Normative references.....	5
3	Terms and definitions.....	5
4	Health and safety.....	6
5	Principle	6
6	Testing requirements.....	6
7	Test report.....	8
Annex A (informative) Relative spectral response of the human eye.....		9

European foreword

This document (EN 2002-16:2019) 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 May 2020, and conflicting national standards shall be withdrawn at the latest by May 2020.

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.

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EN 2002-16:2019 (E)

Introduction

This document is part of the series of EN metallic material standards for aerospace applications. The general organization of this series is described in EN 4258.

1 Scope

This document specifies the requirements for penetrant testing of metallic materials for aerospace applications. It is limited to the direction of surface-breaking defects, e.g. cracks, laps, seams and inclusions.

It shall be applied when referred to in the EN technical specification or material standard unless otherwise specified on the drawing, order or inspection schedule.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

EN 1330-1, *Non destructive testing — Terminology — Part 1: List of general terms*

EN 1330-2, *Non-destructive testing — Terminology — Part 2: Terms common to the non-destructive testing methods*

EN 4179, *Aerospace series — Qualification and approval of personnel for non-destructive testing*

EN 4258, *Aerospace series — Metallic materials — General organization of standardization — Links between types of EN standards and their use*

EN 4259, *Aerospace series — Metallic materials — Definition of general terms*¹

EN ISO 3059, *Non-destructive testing — Penetrant testing and magnetic particle testing — Viewing conditions*

EN ISO 12706, *Non-destructive testing — Penetrant testing — Vocabulary*

ISO 3452-1, *Non-destructive testing — Penetrant testing — Part 1: General principles*²

ISO 3452-2, *Non-destructive testing — Penetrant testing — Part 2: Testing of penetrant materials*²

ISO 3452-3, *Non-destructive testing — Penetrant testing — Part 3: Reference test blocks*²

ISO 3452-4, *Non-destructive testing — Penetrant testing — Part 4: Equipment*²

ASTM E433-71, *Standard Reference Photographs for Liquid Penetrant Inspection*³

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 4259 apply.

¹ Published as ASD-STAN Standard at the date of publication of this standard by AeroSpace and Defence industries Association of Europe - Standardization (ASD-STAN) (<http://www.asd-stan.org/>).

² Published by: ISO International Organization for Standardization <http://www.iso.ch/>

³ Published by: American Society for Testing and Materials (ASTM), 1916 Race St., Philadelphia, PA 19103.

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