



**NSAI**  
Standards

Irish Standard  
I.S. EN 12668-3:2013

# Non-destructive testing - Characterization and verification of ultrasonic examination equipment - Part 3: Combined equipment

© CEN 2013

No copying without NSAI permission except as permitted by copyright law.

## I.S. EN 12668-3:2013

*Incorporating amendments/corrigenda/National Annexes issued since publication:*

### **The National Standards Authority of Ireland (NSAI) produces the following categories of formal documents:**

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

**S.R. xxx:** Standard Recommendation - recommendation based on the consensus of an expert panel and subject to public consultation.

**SWiFT xxx:** A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

<i>This document replaces:</i> EN 12668-3:2000	<i>This document is based on:</i> EN 12668-3:2013 EN 12668-3:2000	<i>Published:</i> 14 November, 2013 22 March, 2000
---	---	--

This document was published under the authority of the NSAI and comes into effect on:  
14 November, 2013

ICS number:  
19.100

#### **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

English Version

## Non-destructive testing - Characterization and verification of ultrasonic examination equipment - Part 3: Combined equipment

Essais non destructifs - Caractérisation et vérification de l'appareillage de contrôle par ultrasons - Partie 3: Equipement complet

Zerstörungsfreie Prüfung - Charakterisierung und Verifizierung der Ultraschall-Prüfausrüstung - Teil 3: Komplette Prüfausrüstung

This European Standard was approved by CEN on 29 September 2013.

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**

**Contents**

Page

Foreword.....3

1 Scope .....4

2 Normative references .....4

3 Description of tests and reporting .....4

3.1 General.....4

3.2 Ultrasonic instrument checks .....5

3.2.1 Linearity of the timebase .....5

3.2.2 Linearity of equipment gain .....6

3.3 Probe checks.....7

3.3.1 Probe index point.....7

3.3.2 Beam angle.....7

3.3.3 Index point and beam angle simultaneously .....8

3.4 System checks: Probe, cable and ultrasonic instrument combined.....8

3.4.1 Measurement of base values.....8

3.4.2 Physical state and external aspects .....9

3.4.3 Sensitivity and signal-to-noise ratio .....9

3.4.4 Pulse duration ..... 10

This is a free 6 page sample. Access the full version online.

## Foreword

This document (EN 12668-3:2013) has been prepared by Technical Committee CEN/TC 138 “Non-destructive testing”, the secretariat of which is held by AFNOR.

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 2014, and conflicting national standards shall be withdrawn at the latest by May 2014.

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 12668-3:2000.

This European Standard is composed of the following parts:

- EN 12668-1, *Non-destructive testing — Characterization and verification of ultrasonic examination equipment — Part 1: Instruments*;
- EN 12668-2, *Non-destructive testing — Characterization and verification of ultrasonic examination equipment — Part 2: Probes*;
- EN 12668-3, *Non-destructive testing — Characterization and verification of ultrasonic examination equipment — Part 3: Combined equipment* (this document).

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 European Standard describes methods and acceptance criteria for verifying the performance of ultrasonic equipment (i.e. instrument and probe combined as defined in EN 12668-1 and EN 12668-2) by the use of appropriate standard calibration blocks. These methods are not intended to prove the suitability of the equipment for particular applications. The methods described are suitable for the use by operators working under site or shop floor conditions. The methods only apply to pulse echo equipment using A-scan presentation, with gain controls or attenuators calibrated in steps not greater than 2 dB and used essentially in contact testing. These methods are specifically intended for manual testing equipment. For automated testing different tests can be needed to ensure satisfactory performance.

## 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 12668-1, *Non-destructive testing - Characterization and verification of ultrasonic examination equipment - Part 1: Instruments*

EN 12668-2, *Non-destructive testing - Characterization and verification of ultrasonic examination equipment - Part 2: Probes*

EN ISO 2400, *Non-destructive testing - Ultrasonic testing - Specification for calibration block No. 1 (ISO 2400)*

EN ISO 7963, *Non-destructive testing - Ultrasonic testing - Specification for calibration block No. 2 (ISO 7963)*

## 3 Description of tests and reporting

### 3.1 General

The methods described in this European Standard, together with the frequency of checking, are summarized in Table 1.

Compliance with the checks shall be recorded on the ultrasonic test report.

This is a free preview. Purchase the entire publication at the link below:

## **I.S. EN 12668-3 : 2013 : EN : COMBINED PDF**

- ⊙ Looking for additional Standards? Visit SAI Global Infostore
- ⊙ Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation

Need to speak with a Customer Service Representative - Contact Us