

**Non-destructive testing - Acoustic emission
- Examination of metallic pressure
equipment during proof testing - Planar
location of AE sources**

Non-destructive testing - Acoustic emission -
Examination of metallic pressure equipment during
proof testing - Planar location of AE sources

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 14584:2005 sisaldab Euroopa standardi EN 14584:2005 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 25.10.2005 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 14584:2005 consists of the English text of the European standard EN 14584:2005.</p> <p>This document is endorsed on 25.10.2005 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p>Käsitlusala: This document specifies the method for conducting acoustic emission (AE) + testing of metallic pressure equipment during acceptance pressure testing using a planar location method. General principles of acoustic emissions are described in EN 13554.</p>	<p>Scope: This European Standard specifies the method for conducting acoustic emission (AE) + testing of metallic pressure equipment during acceptance pressure testing using a planar location method. General principles of acoustic emissions are described in EN 13554.</p>
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ICS 17.140.20, 77.040.20

Võtmesõnad:

ICS 17.140.20; 77.040.20

English Version

**Non-destructive testing - Acoustic emission - Examination of
metallic pressure equipment during proof testing - Planar
location of AE sources**

Essais non destructifs - Emission acoustique - Vérification
des équipements métalliques sous pression pendant
l'épreuve - Localisation planaire des sources d'EA

Zerstörungsfreie Prüfung - Schallemissionsprüfung -
Prüfung von metallischen Druckgeräten während der
Abnahmeprüfung - Planare Ortung von
Schallemissionsquellen

This European Standard was approved by CEN on 8 July 2005.

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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

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Foreword

This European Standard (EN 14584:2005) 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 February 2006, and conflicting national standards shall be withdrawn at the latest by February 2006.

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

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 European Standard specifies the method for conducting acoustic emission (AE) + testing of metallic pressure equipment during acceptance pressure testing using a planar location method. General principles of acoustic emissions are described in EN 13554.

The objectives of the AE testing are to provide 100 % volumetric testing to define regions of the structure, which are acoustically active with burst type AE e.g. as a result of sub-critical flaw evolution; thus increasing the reliability of the acceptance test. The test provides a reference map for comparison with results of future tests.

2 Normative references

The following referenced documents are indispensable for the application of this European Standard. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 473, *Non-destructive testing – Qualification and certification of NDT personnel – General principles*

EN 1330-1:1998, *Non-destructive testing – Terminology – Part 1: List of general terms*

EN 1330-2:1998, *Non-destructive testing – Terminology – Part 2: Terms common to the non-destructive testing methods*

EN 1330-9:2000, *Non-destructive testing – Terminology – Part 9: Terms used in acoustic emission testing*

EN 13477-1, *Non-destructive testing – Acoustic emission – Equipment characterisation – Part 1: Equipment description*

EN 13477-2, *Non-destructive testing – Acoustic emission – Equipment characterisation – Part 2: Verification of operating characteristic*

3 Terms and definitions

For the purpose of this European Standard, the terms and definitions given in EN 1330-1:1998, EN 1330-2:1998 and EN 1330-9:2000 apply.

4 Personnel qualification

It is assumed that acoustic emission testing is performed by qualified and capable personnel. In order to prove this qualification, it is recommended to certify the personnel in accordance with EN 473.

NOTE For pressure equipment see directive 97/23/EC, Annex 3.1.3: "For pressure equipment in categories III and IV, the personnel must be approved by a third party organization recognized by a Member State".

5 Test method

5.1 General

The main target of the AE test is to locate and monitor acoustic emission sources caused by phenomena e.g. crack growth and yielding generated by the applied load to the equipment.

The properties and structural state of the material, the type and magnitude of the applied stress and stress rate are significant factors affecting the emission.