

Non-destructive testing of steel forgings - Part 2:  
Penetrant testing

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

See Eesti standard EVS-EN 10228-2:2016 sisaldab Euroopa standardi EN 10228-2:2016 ingliskeelset teksti.	This Estonian standard EVS-EN 10228-2:2016 consists of the English text of the European standard EN 10228-2:2016.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 01.06.2016.	Date of Availability of the European standard is 01.06.2016.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

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English Version

## Non-destructive testing of steel forgings - Part 2: Penetrant testing

Essais non destructifs des pièces forgées en acier -  
Partie 2 : Contrôle par ressuage

Zerstörungsfreie Prüfung von Schmiedestücken aus  
Stahl - Teil 2: Eindringprüfung

This European Standard was approved by CEN on 3 October 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.

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## European foreword

This document (EN 10228-2:2016) has been prepared by Technical Committee ECISS/TC 111 “Steel castings and forgings”, 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of an identical text or by endorsement, at the latest by December 2016 and conflicting national standards shall be withdrawn at the latest by December 2016.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 10228-2:1998.

Annex A provides the significant technical changes to the previous version EN 10228-2:1998.

EN 10228 consists of the following parts under the general title *Non-destructive testing of steel forgings*:

- *Part 1: Magnetic particle inspection;*
- *Part 2: Penetrant testing;*
- *Part 3: Ultrasonic testing of ferritic or martensitic steel forgings;*
- *Part 4: Ultrasonic testing of austenitic and austenitic-ferritic stainless steel forgings.*

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## 1 Scope

This European Standard describes techniques and acceptance criteria to be used for the penetrant testing of steel forgings. The method described is used for the detection of surface discontinuities.

## 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 ISO 3059, *Non-destructive testing — Penetrant testing and magnetic particle testing — Viewing conditions (ISO 3059)*

EN ISO 3452-1, *Non-destructive testing — Penetrant testing — Part 1: General principles (ISO 3452-1)*

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

EN ISO 3452-4, *Non-destructive testing — Penetrant testing — Part 4: Equipment (ISO 3452-4)*

EN ISO 9712, *Non-destructive testing — Qualification and certification of NDT personnel (ISO 9712)*

EN ISO 12706:2009, *Non-destructive testing — Penetrant testing — Vocabulary (ISO 12706:2009)*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN ISO 12706:2009 apply.

## 4 Items for agreement

The following aspects concerning penetrant testing shall be agreed between the purchaser and the supplier at the time of enquiry and order:

- a) the manufacturing stage(s) at which penetrant testing shall be performed (see Clause 8);
- b) the areas to be examined;
- c) whether testing shall be performed with colour contrast or fluorescent penetrants (see 7.1);
- d) the quality class required, or the quality classes and surfaces areas to which they apply (see Clause 14);
- e) the applicable recording and acceptance criteria if different from those detailed in Table 2;
- f) whether the test shall be conducted in the presence of the purchaser or his representative;
- g) whether a written procedure shall be submitted for approval by the purchaser. (see Clause 5);