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Copper and copper alloys - Estimation of average grain size by ultrasound

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

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Copper and copper alloys - Estimation of average grain size by ultrasound

Cuivre et alliages de cuivre - Estimation de la taille moyenne de grain par ultrasons

Kupfer und Kupferlegierungen - Bestimmung der mittleren Korngröße durch Ultraschall

This European Standard was approved by CEN on 4 September 2019.

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COMITÉ EUROPÉEN DE NORMALISATION
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EN 16090:2019 (E)

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European foreword

This document (EN 16090:2019) has been prepared by Technical Committee CEN/TC 133 “Copper and copper alloys”, the secretariat of which is held by DIN.

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of an identical text or by endorsement, at the latest by May 2020, and conflicting national standards shall be withdrawn at the latest by May 2020.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 shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 16090:2011.

The following modifications were implemented in this new edition of EN 16090:

- updated normative references;
- editorial modifications.

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EN 16090:2019 (E)**Introduction**

The test by ultrasound described in this standard has the objective of estimating the dimension of average grain size in copper and copper alloy products.

When using this test by ultrasound technique it is important to recognize that the estimation of grain size is not a precise measurement because a metal structure is an aggregate of three-dimensional crystals of varying sizes and shapes. Clearly, no two areas of observation can then be exactly the same.

1 Scope

This document specifies a method for the estimation of the average grain size of copper and copper alloy products by ultrasound. This document can be applied for seamless round tubes as well as for flat products.

This method can be used in place of test methods according to EN ISO 2624, mentioned in the relevant product standards. As reference method and in case of doubt the intercept procedure or planimetric procedure will be used.

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 ISO 2624, *Copper and copper alloys - Estimation of average grain size (ISO 2624)*

EN ISO 5577, *Non-destructive testing - Ultrasonic testing - Vocabulary (ISO 5577)*

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

EN ISO 16810:2014, *Non-destructive testing - Ultrasonic testing - General principles (ISO 16810:2012)*

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