Health and safety in welding and allied processes - Requirements, testing and marking of equipment for air filtration - Part 2: Determination of the minimum air volume flow rate of captor hoods and nozzles

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EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN ISO 15012-2:2008 sisaldab Euroopa standardi EN ISO 15012-2:2008 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 15012-2:2008 consists of the English text of the European standard EN ISO 15012-2:2008.
Standard on kinnitatud Eesti Standardikeskuse 19.05.2008 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.	This standard is ratified with the order of Estonian Centre for Standardisation dated 19.05.2008 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.
Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 01.04.2008.	Date of Availability of the European standard text 01.04.2008.
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Health and safety in welding and allied processes - Requirements, testing and marking of equipment for air filtration - Part 2: Determination of the minimum air volume flow rate of captor hoods and nozzles (ISO 15012-2:2008)

Hygiène et sécurité en soudage et techniques connexes - Exigences, essais et marquage des équipements de filtration d'air - Partie 2: Détermination du débit volumique minimal d'air des bouches de captage (ISO 15012-2:2008)

Sicherheit und Gesundheitsschutz beim Schweißen und bei verwandten Verfahren - Anforderungen, Prüfung und Kennzeichnung von Luftreinigungssystemen - Teil 2: Bestimmen des Mindestluftvolumenstroms von Absaughauben und Flanschplatten (ISO 15012-2:2008)

This European Standard was approved by CEN on 21 March 2008.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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EUROPÄISCHES KOMITEE FÜR NORMUNG

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Foreword

This document (EN ISO 15012-2:2008) has been prepared by Technical Committee CEN/TC 121 "Welding", the secretariat of which is held by DIN, in collaboration with Technical Committee ISO/TC 44 "Welding and allied processes".

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 October 2008, and conflicting national standards shall be withdrawn at the latest by October 2008.

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Introduction

Welding and allied processes generate fume and gases, which, if inhaled, can be harmful to human health. Control is often required to maintain exposure at acceptable levels and this can be achieved by capturing the fume and gases using local exhaust ventilation (LEV), which consists of a capture device, such as a captor hood or nozzle, connected, via ducting, to an exhaust system.

The plume of welding fume rises at a velocity of about 0,3 m/s and the air draughts commonly encountered in workshops are of the same order and can be higher. Effective capture of welding fume and gases can only be achieved when the extracted air velocity at the emission point exceeds the resulting velocity of the draught and the plume, so a velocity of 0,4 m/s has been selected for testing. For a particular capture device, this capture velocity can only be achieved by applying a minimum air volume flow rate, which is dependent upon the aspect ratio, the cross-sectional area of the device and its distance from the emission point. Consequently, capture devices need to be used with exhaust systems that provide, at least, the minimum air volume flow rate.

The design of capture devices can be very different. Aspect ratios range from those applicable to circular hoods to those of slots, so the size and shape of the area (capture zone) where fume and gases are captured, while using the minimum air volume flow rate, also varies considerably. Therefore, this part of ISO 15012 requires manufacturers of capture devices to measure the minimum air volume flow rate at measurement points selected to give an estimate of the size and shape of the capture zone.

Health and safety in welding and allied processes — Requirements, testing and marking of equipment for air filtration —

Part 2: Determination of the minimum air volume flow rate of captor hoods and nozzles

1 Scope

This part of ISO 15012 specifies a method for establishing the minimum air volume flow rate required for captor hoods and nozzles to effectively capture fume and gases from welding and allied processes. The method can be used with capture devices of any aspect ratio and cross-sectional area, but it is not applicable to on-gun extraction systems and down draught tables.

This part of ISO 15012 also specifies the test data to be marked on the capture devices.

2 Normative references

The following referenced documents are indispensable for the application 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.

ISO 12100-1, *Safety of machinery — Basic concepts, general principles for design — Part 1: Basic terminology, methodology*

ISO 12100-2, *Safety of machinery — Basic concepts, general principles for design — Part 2: Technical principles*