

Health and safety in welding and allied processes - Sampling of airborne particles and gases in the operator's breathing zone - Part 1: Sampling of airborne particles

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EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN ISO 10882-1:2001 sisaldab Euroopa standardi EN ISO 10882-1:2001 ingliskeelset teksti. Käesolev dokument on jõustatud 18.06.2001 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes. Standard on kättesaadav Eesti standardiorganisatsioonist.	This Estonian standard EVS-EN ISO 10882-1:2001 consists of the English text of the European standard EN ISO 10882-1:2001. This document is endorsed on 18.06.2001 with the notification being published in the official publication of the Estonian national standardisation organisation. The standard is available from Estonian standardisation organisation.
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Käsitlusala: This part of EN ISO 10882 specifies a procedure for personal sampling of airborne particles in welding and allied processes. The procedure describes determination of personal exposure to welding fume and other airborne particles generated by welding related operations.	Scope: This part of EN ISO 10882 specifies a procedure for personal sampling of airborne particles in welding and allied processes. The procedure describes determination of personal exposure to welding fume and other airborne particles generated by welding related operations.
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Võtmesõnad: definition, definitions, health protection, inhaled air, measurement of gases, occupational safety, operating stations, particulate matter measurement, sampling, sampling methods, welders, welders (personnel), welding, working places

English version

Health and safety in welding and allied processes
**Sampling of airborne particles and gases in the
operator's breathing zone**
Part 1: Sampling of airborne particles
(ISO 10882-1 : 2001)

Hygiène et sécurité en soudage et
techniques connexes – Echantillon-
nage des particules en suspension et
gaz dans la zone respiratoire des
opérateurs – Partie 1: Echantillon-
nage des particules en suspension
(ISO 10882-1 : 2001)

Arbeits- und Gesundheitsschutz beim
Schweißen und bei verwandten
Verfahren – Probenahme von partikel-
förmigen Stoffen und Gasen im
Atembereich des Schweißers – Teil 1:
Probenahme von partikelförmigen
Stoffen (ISO 10882-1 : 2001)

This European Standard was approved by CEN on 2000-04-13.

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 Management Centre or to any CEN member.

The European Standards exist 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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, the Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom.

CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

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Foreword

The text of EN ISO 10882-1:2001 has been prepared by Technical Committee CEN/TC 121 "Welding", the secretariat of which is held by DS, 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 July 2001, and conflicting national standards shall be withdrawn at the latest by July 2001.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

Introduction

This part of EN ISO 10882 gives details of relevant European Standards which specify required characteristics, performance requirements and test methods; augments guidance provided in EN 689 on assessment strategy and measurement strategy; specifies a procedure for gravimetric determination of personal exposure to welding fume; and provides information about the use of chemical analysis to determine personal exposure to specific chemical agents in welding fume.

A person who performs welding and allied processes (the operator) can be exposed to welding fume and to other airborne particles generated by welding related operations, e.g. grinding. In some instances exposure to other airborne particles can be higher than exposure to welding fume. It is therefore necessary to carefully consider this possibility when using the method described in this standard.

Welding fume consists of airborne particles generated by welding and allied processes. In general, these particles are less than 1 μm in diameter, and respirable. However, most countries currently have exposure limits for welding fume, and for specific chemical agents present in welding fume, that apply to the inhalable fraction of airborne particles. This part of EN ISO 10882 therefore specifies a procedure for sampling the inhalable fraction, but the respirable fraction should be sampled in cases where exposure limits apply to that fraction.

It has been assumed in the drafting of this standard that the execution of its provisions, and the interpretation of the results obtained, is entrusted to appropriately qualified and experienced people.

1 Scope

This part of EN ISO 10882 specifies a procedure for personal sampling of airborne particles in welding and allied processes.

The procedure describes determination of personal exposure to welding fume and other airborne particles generated by welding related operations.

The general background level of airborne particles in the workplace atmosphere influences personal exposure, and therefore the role of fixed point sampling is also considered.

Guidance is given on the use of chemical analysis to determine personal exposure to specific chemical agents present in welding fume, but analytical methods are not described.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 175, *Personal protection — Equipment for eye and face protection during welding and allied processes*

EN 481:1993, *Workplace atmospheres — Size fraction definitions for measurement of airborne particles*

EN 482, *Workplace atmospheres — General requirements for the performance of procedures for the measurement of chemical agents*

EN 689, *Workplace atmospheres — Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy*

EN 1232, *Workplace atmospheres — Pumps for personal sampling of chemical agents — Requirements and test methods*

EN 1540, *Workplace atmospheres — Terminology*

EN ISO 4063, *Welding and allied processes — Nomenclature of processes and reference numbers*

prEN 13205:1998, *Workplace atmospheres - Assessment of performance of instruments for measurement of airborne particle concentrations*

ISO 3534-1, *Statistics — Vocabulary and symbols — Part 1: Probability and general statistical terms*

ISO 6879, *Air quality — Performance characteristics and related concepts for air quality measuring methods*

3 Terms and definitions

For the purposes of this standard, the following terms and definitions apply:

3.1

air sampling

a process consisting of the collection, withdrawal or isolation of a fractional part of a larger volume of air. It can include the simultaneous isolation of selected components. (EN 1540)