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Health and safety in welding and allied processes — Sampling of airborne particles and gases in the operator's breathing zone —

Part 2:
Sampling of gases

Hygiène et sécurité en soudage et techniques connexes — Échantillonnage de particules en suspension et gaz dans la zone respiratoire des opérateurs —

Partie 2: Échantillonnage des gaz

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Foreword

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International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this part of ISO 10882 may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

International Standard ISO 10882-2 was prepared by the European Committee for Standardization (CEN) in collaboration with ISO Technical Committee TC 44, *Welding and allied processes*, Subcommittee SC 9, *Health and safety*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

Throughout the text of this standard, read "...this European Standard..." to mean "...this International Standard...".

ISO 10882 consists of the following parts, under the general title *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*

— *Part 2: Sampling of gases*

Annexes A and B of this part of ISO 10882 are for informatin only.

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Foreword

The text of EN ISO 10882-2:2000 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of an identical text or by endorsement, at the latest by March 2001, and conflicting national standards shall be withdrawn at the latest by March 2001.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

Gases encountered during welding and allied processes are so numerous that it would be impracticable to cover them all in this European Standard. Depending on the process, they can include:

a) fuel gases which are used in gas welding and cutting which on combustion produce carbon dioxide and in some instances carbon monoxide;

b) shielding gases such as argon, helium, carbon dioxide or mixtures of these gases, which can be toxic or asphyxiant;

c) gases produced by the action of heat upon the welding flux or slag, e.g. carbon dioxide and carbon monoxide;

d) gases produced by the action of heat or ultraviolet radiation upon the atmosphere surrounding the welding arc, e.g. nitric oxide, nitrogen dioxide and ozone; and

e) vapours produced as a result of thermal degradation of surface coatings in the welding or cutting of metals treated with paint, primer, sealer or other substances. Vapours can also be produced as a result of degradation of solvent vapour from degreasing operations, but their measurement is not dealt with in this standard because good working practices will avoid their production.

The scope of this part of EN ISO 10882 has been limited to those gases which are produced by welding operations. In particular, fuel, oxidant and shielding gases used in welding and allied processes are not covered, since the hazards associated with their use (e.g. asphyxiation, explosion) are different from those arising from the gases dealt with in this guide.

This part of EN ISO 10882 gives a generalised description of measurement methods suitable for the assessment of personal exposure to gases produced by welding and allied processes; 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; lists basic sampling requirements; and provides specific information about the availability of direct reading electrical apparatus, detector tubes and indirect methods involving laboratory analysis for individual gases.

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.