PD ISO/TR 18786:2014



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Health and safety in welding — Guidelines for risk assessment of welding fabrication activities

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National foreword

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Health and safety in welding — Guidelines for risk assessment of welding fabrication activities

Hygiène et sécurité en soudage - Lignes directrices pour l'évaluation des risques des activités de fabrication de soudage

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is IIW, *International Institute of Welding*, Commission VIII.

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Introduction

This Technical Report was prepared by the International Institute of Welding (IIW), Commission VIII: Health, Safety, and Environment.

It constitutes the concerns of this expert group on the possible hazards and risks to be considered during arc welding and allied processes in order to help welding fabricators to identify countermeasures in order to minimize exposures to risk. The experts have drawn on views expressed in previous IIW Commission VIII documents on this topic and information published in papers in the scientific literature. The latter are listed in the Bibliography.

This Technical Report provides tables of possible risks associated with welding and allied activities, focusing on possible consequent harm and damages. The lists contain the most common health and safety aspects related to welding, but do not purport to be exhaustive.

In addition, Annex A reports information on possible actions to be implemented to reduce the risk, and Annex B suggests relations among processes typically allied activities. Annex C gives information about the use of this risk assessment procedure as part of a health and safety management system for welding fabrication.

This Technical Report is not intended to replace or supersede national, regional, or local legislation.

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TECHNICAL REPORT **ISO/TR 18786:2014(E)**

Health and safety in welding — Guidelines for risk assessment of welding fabrication activities

1 Scope

This Technical Report provides guidance for the assessment of the health and safety aspects of welding fabrication of metallic materials, including on-site and repair work. This Technical Report applies to welding and allied processes which are covered by the following processes in accordance with ISO 4063:

— arc welding (process number 1);

— gas welding (process number 3);

— cutting and gouging [process number 8 (excluding 84 laser cutting)].

For the purpose of this Technical Report, allied processes includes joint preparation and grinding.

Other processes, such as the following, might have similar health and safety aspects but are not directly addressed by this Technical Report:

— soldering and brazing;

— thermal spraying;

— pre-heating and post weld heat treatments;

— flame straightening and mechanical straightening.

This Technical Report includes list of hazards, harms, and damages with reference to assessment procedures and a guide for possible preventive actions.

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

ISO 14731, *Welding coordination — Tasks and responsibilities*

ISO 31000, *Risk management — Principles and guidelines*

ISO/TR 25901, *Welding and related processes — Vocabulary*

ISO/IEC Guide 2, *Standardization and related activities — General vocabulary*

ISO/IEC Guide 51, *Safety aspects — Guidelines for their inclusion in standards*

ISO/IEC Guide 73, *Risk management — Vocabulary — Guidelines for use in standards*

IEC 31010, *Risk management — Risk assessment techniques*

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