International Standard

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Welding — Measurement of preheating temperature, interpass temperature and preheat maintenance temperature

Soudage — Mesurage de la température de préchauffage, de la température entre passes et de la température de maintien du préchauffage

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ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

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Foreword

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This document was prepared by Technical Committee ISO/TC 44, *Welding and allied processes*, Subcommittee SC 10, *Quality management in the field of welding*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 121, *Welding and allied processes*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This third edition cancels and replaces the second edition (ISO 13916:2017), which has been technically revised.

The main changes are as follows:

— subclause 4.1, addition of requirements regarding the point of measurement of the temperature, for joint thicknesses not exceeding 50 mm, if the source of heat is localized outside of the groove of the weld.

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Welding — Measurement of preheating temperature, interpass temperature and preheat maintenance temperature

1 Scope

This document specifies requirements for the measurement of preheating temperature, interpass temperature and preheat maintenance temperature for fusion welding. This document can also be applied as appropriate in the case of other welding processes. This document does not apply to the measurement of post weld heat treatment temperatures.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1
preheating temperature
T_p
temperature of the workpiece in the weld zone immediately prior to any welding operation

Note 1 to entry: It is normally expressed as a minimum and is usually equal to the minimum interpass temperature.

3.2
interpass temperature
T_i
temperature in a multi-run weld and adjacent parent metal immediately prior to the application of the next run

Note 1 to entry: It is normally expressed as a maximum temperature.

3.3
preheat maintenance temperature
T_m
minimum temperature in the weld zone which is to be maintained if welding is interrupted

4 Requirements

4.1 Point of measurement

For a workpiece thickness t not exceeding 50 mm in the weld, the temperature measurement shall normally be made on the surface of the workpiece facing the welder. If the heat source is centred on the groove, the temperature measurement shall normally be at a distance of $A = 4 \times t$, but not more than 50 mm, from the longitudinal edge of the groove (see Figure 1). If the source of heat is localized outside of the groove (e.g.

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