



Technical Specification

ISO/TS 8182

Welding and allied processes — Requirements and recommendations for the use of the welding parameters related to the arc energy for qualification and specification of welding procedures

*Soudage et techniques connexes — Exigences et
recommandations pour l'utilisation des paramètres de soudage
liés à l'énergie de l'arc pour la qualification et la spécification des
modes opératoires de soudage*

**First edition
2026-08**

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Published in Switzerland

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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*.

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Introduction

In quality management systems, welding is classified as a special process — one whose results cannot be fully verified by subsequent inspection and testing. Therefore, consistent quality can only be ensured if the process is properly controlled from the outset. ISO 3834-2 and ISO 3834-3 outline the quality requirements for fusion welding of metallic materials. They require that manufacturers:

- prepare welding procedure specifications (WPS);
- qualify these procedures before production;
- ensure proper implementation of the WPS during fabrication.

ISO 15607 provides the general framework for specifying and qualifying welding procedures. It introduces several qualification methods but does not provide detailed instructions on:

- measuring welding parameters (e.g., arc energy) during qualification;
- determining the range of qualification;
- translating qualification results into a usable WPS.

In certain situations, for example, when the mechanical or corrosion properties of parent materials and the weld metal can be strongly degraded by the use of the wide range of arc energy rules as given in the standards cited in ISO 15607, it can be appropriate to implement additional provisions that may lead to restrictions. These additional provisions will prevent:

- incorrect parameter ranges in WPS documents;
- non-compliance with mechanical or corrosion resistance requirements;
- inconsistent weld quality across production batches.

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- provides practical requirements and recommendations on how to handle welding procedure qualification and specification;
- clarifies how to measure and document welding parameters during qualification;
- explains how to define and apply qualification ranges effectively.

This document can serve as a contractual reference for the qualification of a welding procedure qualification record and/or the creation of a welding procedure specification.