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STN	**Elektromagnetické pulzné zváranie Časť 4: Stanovenie a schválenie postupov zvárania**	**STN EN 18007-4** 05 2840

Electromagnetic pulse welding - Part 4: Specification and qualification of welding procedures

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

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English Version

Electromagnetic pulse welding - Part 4: Specification and qualification of welding procedures

Soudage par impulsion électromagnétique - Partie 4 : Descriptif et qualification des modes opératoires de soudage

Elektromagnetisches Pulsschweißen - Teil 4: Spezifikation und Qualifizierung von Schweißverfahren

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Contents

Page

European foreword

This document (EN 18007-4:2024) has been prepared by Technical Committee CEN/TC 121 “Welding and allied processes”, the secretariat of which is held by AFNOR.

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of an identical text or by endorsement, at the latest by January 2025, and conflicting national standards shall be withdrawn at the latest by January 2025.

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

The EN 18007 series of standards, under the general title *Electromagnetic pulse welding*, consists of the following parts:

— *Part 1: Welding knowledge, terminology and vocabulary*,

— *Part 2: Design of welded joints*,

— *Part 3: Qualification of welding operators and weld setters*,

— *Part 4: Specification and qualification of welding procedures*,

— *Part 5: Quality and inspection requirements*.

Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website.

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Introduction

Electromagnetic pulse welding is an innovative solid-state welding technology that belongs to the group of pressure welding processes and is based on the use of electromagnetic forces to deform, accelerate and weld workpieces. No external heat source is used, the connection is only created by a high-velocity impact.

The increasing use of the electromagnetic pulse welding process has created the need for a standard, to ensure that the welding operations are carried out in the most effective manner and that appropriate controls are performed on all aspects of the implementation.

To be effective, welded products should be free from problems in production and in service. To achieve this goal, it is recommended to provide controls from the design phase through material selection, choice of parameters, the fabrication itself, and inspection. For example, poor design can create serious and costly difficulties in the workshop or in service. Incorrect process parameters and/or material selection can result in welding defects. Welding procedures should be correctly formulated and approved to avoid weld discontinuities. To ensure the manufacture of a quality product, management should understand the causes of potential problems and implement appropriate inspection procedures and subsequent quality measures. Supervision should be implemented to ensure that the specified quality is achieved.

1 Scope

This document specifies the requirements for the specification and qualification of welding procedures for electromagnetic pulse welding.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

EN 18007-1, *Electromagnetic pulse welding — Part 1: Welding knowledge, terminology and vocabulary*

EN 18007-3, *Electromagnetic pulse welding — Part 3: Qualification of welding operators and weld setters*

EN 18007-5:2024, *Electromagnetic pulse welding — Part 5: Quality and inspection requirements*

EN ISO 4063, *Welding, brazing, soldering and cutting — Nomenclature of processes and reference numbers (ISO 4063)*

EN ISO 14270:2016, *Resistance welding — Destructive testing of welds — Specimen dimensions and procedure for mechanized peel testing resistance spot, seam and embossed projection welds (ISO 14270:2016)*

EN ISO 14273:2016, *Resistance welding — Destructive testing of welds — Specimen dimensions and procedure for tensile shear testing resistance spot and embossed projection welds (ISO 14273:2016)*

EN ISO 15607:2019, *Specification and qualification of welding procedures for metallic materials — General rules (ISO 15607:2019)*

EN ISO 17637, *Non-destructive testing of welds — Visual testing of fusion-welded joints (ISO 17637)*

EN ISO 17639, *Destructive tests on welds in metallic materials — Macroscopic and microscopic examination of welds (ISO 17639)*