

<b>STN</b>	<b>Elektromagnetické pulzné zvaranie Časť 3: Kvalifikácia operátorov zvarania a zoraďovačov zvarania</b>	<b>STN EN 18007-3</b>  05 2840
------------	--	--

Electromagnetic pulse welding - Part 3: Qualification of welding operators and weld setters

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

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 09/24

Obsahuje: EN 18007-3:2024

**139311**

---

Úrad pre normalizáciu, metrológiu a skúšobníctvo Slovenskej republiky, 2024  
Slovenská technická norma a technická normalizačná informácia je chránená zákonom č. 60/2018 Z. z. o technickej normalizácii  
v znení neskorších predpisov.

EUROPEAN STANDARD

EN 18007-3

NORME EUROPÉENNE

EUROPÄISCHE NORM

July 2024

ICS 25.160.01; 25.160.10

English Version

## Electromagnetic pulse welding - Part 3: Qualification of welding operators and weld setters

Soudage par impulsion électromagnétique - Partie 3 :  
Qualification des opérateurs soudeurs et des régleurs  
en soudage

Elektromagnetisches Pulsschweißen - Teil 3:  
Qualifizierung der Bediener und Einrichter

This European Standard was approved by CEN on 7 June 2024.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

**EN 18007-3:2024 (E)**

<b>Contents</b>	<b>Page</b>
<b>European foreword</b> .....	<b>4</b>
<b>Introduction</b> .....	<b>5</b>
<b>1 Scope</b> .....	<b>6</b>
<b>2 Normative references</b> .....	<b>6</b>
<b>3 Terms and definitions</b> .....	<b>6</b>
<b>4 Welding personnel</b> .....	<b>6</b>
<b>4.1 General</b> .....	<b>6</b>
<b>4.2 Electromagnetic pulse welding operator and weld setter</b> .....	<b>6</b>
<b>4.3 Welding coordination personnel (supervisor)</b> .....	<b>7</b>
<b>4.4 Essential variables and range of qualification</b> .....	<b>7</b>
<b>4.4.1 General</b> .....	<b>7</b>
<b>4.4.2 Electromagnetic pulse welding variant</b> .....	<b>7</b>
<b>4.4.3 Welding equipment</b> .....	<b>8</b>
<b>4.4.4 Parent and flyer materials</b> .....	<b>8</b>
<b>4.5 Qualification methods</b> .....	<b>8</b>
<b>4.5.1 Qualification based on a standard welding test</b> .....	<b>8</b>
<b>4.5.2 Qualification based on a welding procedure test</b> .....	<b>8</b>
<b>4.5.3 Qualification based on pre-production test or production test</b> .....	<b>8</b>
<b>4.5.4 Qualification based on production sample test</b> .....	<b>8</b>
<b>4.6 Test welds</b> .....	<b>9</b>
<b>4.6.1 General</b> .....	<b>9</b>
<b>4.6.2 Visual testing and acceptance levels</b> .....	<b>9</b>
<b>4.6.3 Destructive testing</b> .....	<b>9</b>
<b>4.6.4 Re-testing</b> .....	<b>9</b>
<b>4.7 Test report</b> .....	<b>9</b>
<b>5 Certificate</b> .....	<b>10</b>
<b>5.1 General</b> .....	<b>10</b>
<b>5.2 Period of validity</b> .....	<b>10</b>
<b>5.2.1 Initial qualification</b> .....	<b>10</b>
<b>5.2.2 Confirmation of the validity</b> .....	<b>10</b>
<b>5.2.3 Prolongation of qualification</b> .....	<b>10</b>
<b>5.2.4 Revocation of qualification</b> .....	<b>10</b>
<b>Annex A (normative) Functional knowledge of the welding unit</b> .....	<b>11</b>
<b>A.1 General</b> .....	<b>11</b>
<b>A.2 Welding sequences and procedures</b> .....	<b>11</b>
<b>A.3 Joint preparation</b> .....	<b>11</b>
<b>A.4 Weld imperfections</b> .....	<b>11</b>
<b>A.5 Welding operator/weld setter qualification</b> .....	<b>11</b>
<b>A.6 Process operation</b> .....	<b>11</b>

<b>Annex B (normative) Knowledge of welding technology .....</b>	<b>13</b>
<b>B.1 General .....</b>	<b>13</b>
<b>B.2 Requirements.....</b>	<b>13</b>
<b>Annex C (informative) Qualification test certificate for electromagnetic pulse welding operators/weld setter .....</b>	<b>15</b>

**EN 18007-3:2024 (E)****European foreword**

This document (EN 18007-3:2024) 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.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

## **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.

**EN 18007-3:2024 (E)****1 Scope**

This document specifies the requirements for the qualification of welding operators and also weld setters for electromagnetic pulse welding.

This document does not apply to personnel exclusively performing loading or unloading of the automatic welding unit.

This document is applicable when qualification testing of welding operators and weld setters is required by the contract or by the application standard.

**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 18007-4:2024, *Electromagnetic pulse welding — Part 4: Specification and qualification of welding procedures*

EN ISO 14731, *Welding coordination — Tasks and responsibilities (ISO 14731)*

EN ISO 14732, *Welding personnel — Qualification testing of welding operators and weld setters for mechanized and automatic welding of metallic materials (ISO 14732)*

**koniec náhľadu – text ďalej pokračuje v platenej verzii STN**