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English Version

Electromagnetic pulse welding - Part 2: Design of welded joints

Soudage par impulsion électromagnétique - Partie 2 : Conception des assemblages soudés

Schweißen und verwandte Verfahren - Elektromagnetisches Pulsschweißen - Teil 2: Ausführung der Schweißverbindungen

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 121.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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

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European foreword

This document (prEN 18007-2:2023) has been prepared by Technical Committee CEN/TC 121 “Welding and allied processes”, the secretariat of which is held by DIN.

This document is currently submitted to the CEN Enquiry.

The EN 18007 series of standards 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*.

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 need to be free from problems in production and in service. To achieve this goal, it is necessary 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 need to be correctly formulated and approved to avoid weld discontinuities. To ensure the manufacture of a quality product, management needs to 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.