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Irish Standard
I.S. EN ISO 14555:2017

Welding - Arc stud welding of metallic materials (ISO 14555:2017)

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NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 14555

June 2017

ICS 25.160.10

Supersedes EN ISO 14555:2014

English Version

Welding - Arc stud welding of metallic materials (ISO 14555:2017)

Soudage - Soudage à l'arc des goujons sur les matériaux métalliques (ISO 14555:2017)

Schweißen - Lichtbogenbolzenschweißen von metallischen Werkstoffen (ISO 14555:2017)

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Contents

Page

European foreword **3**

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European foreword

This document (EN ISO 14555:2017) has been prepared by Technical Committee ISO/TC 44 "Welding and allied processes" in collaboration with Technical Committee CEN/TC 121 “Welding and allied processes” the secretariat of which is held by DIN.

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of an identical text or by endorsement, at the latest by November 2017 and conflicting national standards shall be withdrawn at the latest by November 2017.

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INTERNATIONAL STANDARD

ISO 14555

Fourth edition
2017-05

Welding — Arc stud welding of metallic materials

Soudage — Soudage à l'arc des goujons sur les matériaux métalliques

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Contents

Page

Foreword ..... **vi**

Introduction ..... **vii**

1 Scope **1**

2 Normative references **1**

3 Terms and definitions **2**

4 Symbols and abbreviated terms **3**
4.1 Symbols 3
4.2 Abbreviated terms 4

5 Technical review **4**

6 Welding personnel **5**
6.1 Stud-welding operators 5
6.2 Welding coordination 5

7 Equipment **6**
7.1 Production equipment 6
7.2 Description of the equipment 6
7.3 Maintenance 6

8 Production planning **7**

9 Welding procedure specification (WPS) **7**
9.1 General 7
9.2 Information related to the manufacturer 7
9.2.1 Identification of the manufacturer 7
9.2.2 Identification of the WPS 7
9.2.3 Reference to the welding procedure qualification record (WPQR) or other relevant documents 7
9.3 Information related to the parent material 7
9.3.1 Parent material type 7
9.3.2 Dimensions 7
9.4 Welding process 8
9.5 Joint 8
9.5.1 Joint design 8
9.5.2 Welding position 8
9.5.3 Preparation of parent material surface 8
9.5.4 Jigs and fixtures 8
9.5.5 Support 8
9.6 Studs 8
9.6.1 Designation 8
9.6.2 Handling 8
9.7 Auxiliaries 8
9.7.1 Ceramic ferrules (if any) 8
9.7.2 Protective gas (if any) 8
9.8 Power source 9
9.9 Movable fixtures 9
9.9.1 Welding gun/lift mechanism 9
9.9.2 Shielding gas system (if used) 9
9.9.3 Stud feeding system (if any) 9
9.10 Welding variables 9
9.10.1 Drawn-arc stud welding with ceramic ferrule or shielding gas and short-cycle drawn-arc stud welding 9
9.10.2 Capacitor discharge drawn-arc stud welding or capacitor discharge stud welding with tip ignition 9
9.11 Thermal conditions 9

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9.12 Post-weld heat-treatment ... 10
9.13 Non-thermal treatment after welding ... 10

10 Welding procedure qualification ... 10
10.1 Principles ... 10
10.2 Welding procedure tests ... 10
10.2.1 Application ... 10
10.2.2 Proof of conformity of parent materials and stud materials ... 10
10.2.3 Shape and dimensions of test pieces ... 11
10.2.4 Welding ... 11
10.2.5 Scope of examination and testing ... 11
10.2.6 Acceptance criteria ... 11
10.2.7 Re-testing ... 12
10.2.8 Range of qualification ... 12
10.3 Pre-production tests ... 14
10.3.1 Pre-production test for workshop applications ... 14
10.3.2 Pre-production test for stud welding on site (for through-deck stud welding) ... 14
10.4 Previous experience ... 15
10.5 Welding procedure qualification record (WPQR) ... 15

11 Examination and testing ... 15
11.1 General ... 15
11.2 Visual examination ... 15
11.3 Bend testing ... 16
11.4 Tensile testing ... 19
11.5 Torque test ... 22
11.6 Macro examination ... 22
11.7 Radiographic examination ... 22
11.8 Ring test ... 23

12 Acceptance criteria ... 23
12.1 General ... 23
12.2 Acceptance criteria for visual examination ... 23
12.3 Acceptance criteria for bend testing ... 23
12.4 Acceptance criteria for tensile testing ... 24
12.5 Acceptance criteria for torque testing ... 24
12.6 Acceptance criteria for macro examination ... 24
12.7 Acceptance criteria for radiographic examination ... 24
12.8 Acceptance criteria for ring tests ... 24
12.9 Acceptance criteria for additional tests ... 24

13 Workmanship ... 24

14 Process control ... 25
14.1 General ... 25
14.2 Production test ... 25
14.2.1 General ... 25
14.2.2 Production test for drawn-arc stud welding with ceramic ferrule or shielding gas and short-cycle drawn-arc stud welding ... 26
14.2.3 Production test for capacitor discharge stud welding with tip ignition and capacitor discharge drawn-arc stud welding ... 26
14.3 Simplified production test ... 26
14.4 Re-testing for production test or simplified production test ... 26
14.5 Production surveillance ... 27
14.5.1 Visual examination ... 27
14.5.2 Checking the welding parameters ... 27
14.5.3 Other examinations and tests ... 27
14.5.4 Production surveillance for drawn-arc stud welding with ceramic ferrule with qualification according to 10.3.2 ... 27
14.6 Production surveillance record ... 27
14.7 Non-conformance and corrective actions ... 27

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14.8 Calibration of the measuring and testing equipment 28

Annex A (informative) **Processing of stud welding** **29**

Annex B (normative) **Quality requirements for stud welding** **48**

Annex C (informative) **Manufacturer's welding procedure specification (WPS)** **49**

Annex D (informative) **Welding procedure qualification record form (WPQR) (for drawn-arc stud welding with ceramic ferrule or shielding gas and short-cycle drawn-arc stud welding)** **50**

Annex E (informative) **Welding procedure qualification record form (WPQR) (for capacitor discharge stud welding with tip ignition and capacitor discharge drawn-arc stud welding)** **54**

Annex F (informative) **Test results — Production test (for drawn-arc stud welding with ceramic ferrule or shielding gas and short-cycle drawn-arc stud welding)** **58**

Annex G (informative) **Test results — Production test (for capacitor discharge stud welding with tip ignition and capacitor discharge drawn-arc stud welding)** **61**

Annex H (informative) **Example of production surveillance record** **64**

Bibliography **65**

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 44, *Welding and allied processes*, Subcommittee SC 10, *Quality management in the field of welding*.

This fourth edition cancels and replaces the third edition (ISO 14555:2014), of which it constitutes a minor revision and contains the following changes:

— undated references to ISO 14732, ISO 13918 and ISO 15607;

— the expression "welding diameter" has been changed to "welded cross-section" in 3.6;

— the word "deformability" has been changed to "deformation" in the last sentence of 12.3;

— the second and third paragraphs of 12.4 have been combined;

— the expression "welding diameter" has been changed to "visible width of the welding zone" in 12.6;

— the appearance "Collar off-centre with unacceptable undercut" is now given under "Visual examination or macro cut" in Table A.5;

— the missing symbol "≤" in Annex D has been introduced for application ≤100 °C.

Requests for official interpretations of any aspect of this document should be directed to the Secretariat of ISO/TC 44/SC 10 via your national standards body. A complete listing of these bodies can be found at www.iso.org.

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Introduction

The purpose of arc stud welding is to weld predominantly pin-shaped metal parts to metal workpieces. In this document, it is referred to simply as stud welding. Among other things, stud welding is used in bridge building (especially in composite structures), steel structures, shipbuilding, facade-wall fabrication, vehicle manufacture, apparatus engineering, steam-boiler construction, and the manufacture of household appliances.

The quality of a stud weld depends not only on strict compliance with the welding procedure specification but also on the correct function of the actuating mechanism (e.g. welding guns), and on the condition of the components, of the accessories and of the power supply.

This document does not invalidate former specifications, providing the technical requirements are equivalent and satisfied.

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Welding — Arc stud welding of metallic materials

1 Scope

This document covers arc stud welding of metallic materials subject to static and fatigue loading. It specifies requirements that are particular to stud welding, in relation to welding knowledge, quality requirements, welding procedure specification, welding procedure qualification, qualification testing of operators and testing of production welds.

This document is appropriate where it is necessary to demonstrate the capability of a manufacturer to produce welded construction of a specified quality.

NOTE General quality requirements for fusion welding of metallic materials are given in ISO 3834-1, ISO 3834-2, ISO 3834-3, ISO 3834-4 and ISO 3834-5.

This document has been prepared in a comprehensive manner, with a view to it being used as a reference in contracts. The requirements contained within it can be adopted in full, or partially, if certain requirements are not relevant to a particular construction (see Annex B). For processing of stud welding, see Annex A.

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.

ISO 3834-1, *Quality requirements for fusion welding of metallic materials — Part 1: Criteria for the selection of the appropriate level of quality requirements*

ISO 3834-2, *Quality requirements for fusion welding of metallic materials — Part 2: Comprehensive quality requirements*

ISO 3834-3, *Quality requirements for fusion welding of metallic materials — Part 3: Standard quality requirements*

ISO 3834-4, *Quality requirements for fusion welding of metallic materials — Part 4: Elementary quality requirements*

ISO 4063, *Welding and allied processes — Nomenclature of processes and reference numbers*

ISO 6947, *Welding and allied processes — Welding positions*

ISO 9606-1, *Qualification testing of welders — Fusion welding — Part 1: Steels*

ISO 9606-2, *Qualification test of welders — Fusion welding — Part 2: Aluminium and aluminium alloys*

ISO 13918, *Welding — Studs and ceramic ferrules for arc stud welding*

ISO 14175, *Welding consumables — Gases and gas mixtures for fusion welding and allied processes*

ISO 14731, *Welding coordination — Tasks and responsibilities*

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

ISO 15607, *Specification and qualification of welding procedures for metallic materials — General rules*

ISO/TR 15608, *Welding — Guidelines for a metallic materials grouping system*

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