

Hitsausstandardien tilannekatsaus

Tässä tilannekatsauksessa esitetään teknisten komiteoiden ISO/TC 44, ISO/TC 44/SC 3, 5-15, IIW sekä CEN/TC 121 julkaisut ja työkohteet. Tilannekatsauksessa esitetään myös eräitä hitsaussanastoja koskevia SFS-standardeja.

Jos julkaisusta tai työkohteesta on sekä ISO- että CEN-versio, tilannekatsaukseen on merkitty pelkästään CEN-versio. Komiteoiden CEN/TC 121 ja IIW kohteet on käsitelty aihealueittain kunkin ISO/TC 44/SC:n kohdalla.

Keltaisella on merkitty viime tilannekatsaukseen (6.10.2023) nähden muuttuneet tiedot. FI tarkoittaa, että julkaisusta on suomenkielinen käännös. VA tarkoittaa, että ISO-työkohteesta on vastaava EN ISO -työkohte.

Lisätietoja: www.metsta.fi
[ville.saloranta\(at\)metsta.fi](mailto:ville.saloranta(at)metsta.fi)

Sisällys

Sivu

1. Hitsausaineet	1
2. Hitsien testaus ja tarkastus	3
3. Vastus- ja kitkahitsaus	5
4. Sanasto	8
5. Kaasuhitsausvarusteet	9
6. Työympäristö	11
7. Hitsauksen laatu	12
8. Hitsaus henkilöstön pätevänti	17
9. Juotto	18
10. Ilmailusovellutukset	20
11. Vedenalainen hitsaus	20

1. Hitsausaineet

ISO/TC 44/SC 3 Welding consumables

Julkaisut:

FI	Tunnus	Otsikko
	EN ISO 1071:2015	Welding consumables -- Covered electrodes, wires, rods and tubular cored electrodes for fusion welding of cast iron -- Classification
	EN ISO 12153:2022	Welding consumables -- Tubular cored electrodes for gas shielded and non-gas shielded metal arc welding of nickel and nickel alloys -- Classification
	EN ISO 14171:2016	Welding consumables -- Solid wire electrodes, tubular cored electrodes and electrode/flux combinations for submerged arc welding of non alloy and fine grain steels -- Classification
FI	EN ISO 14172:2023	Welding consumables — Covered electrodes for manual metal arc welding of nickel and nickel alloys — Classification
FI	EN ISO 14174:2019	Welding consumables -- Fluxes for submerged arc welding and electroslag welding -- Classification
FI	EN ISO 14175:2008	Welding consumables -- Gases and gas mixtures for fusion welding and allied processes
	EN ISO 14341:2020	Welding consumables -- Wire electrodes and weld deposits for gas shielded metal arc welding of non alloy and fine grain steels -- Classification
	EN ISO 14343:2017	Welding consumables -- Wire electrodes, strip electrodes, wires and rods for arc welding of stainless and heat resisting steels -- Classification
	EN ISO 14344:2010	Welding consumables -- Procurement of filler materials and fluxes
	EN ISO 14372:2011	Welding consumables -- Determination of moisture resistance of manual metal arc welding electrodes by measurement of diffusible hydrogen
	EN ISO 15792-1:2020	Welding consumables -- Test methods -- Part 1: Test methods for all-weld metal test specimens in steel, nickel and nickel alloys
	EN ISO 15792-2:2020	Welding consumables -- Test methods -- Part 2: Preparation of single-run and two-run technique test specimens in steel
	EN ISO 15792-3:2011	Welding consumables -- Test methods -- Part 3: Classification testing of positional capacity and root penetration of welding consumables in a fillet weld
FI	EN ISO 16834:2012	Welding consumables -- Wire electrodes, wires, rods and deposits for gas shielded arc welding of high strength steels -- Classification
FI	EN ISO 17632:2015	Welding consumables -- Tubular cored electrodes for gas shielded and non-gas shielded metal arc welding of non-alloy and fine grain steels -- Classification
	EN ISO 17633:2018	Welding consumables -- Tubular cored electrodes and rods for gas shielded and non-gas shielded metal arc welding of stainless and heat-resisting steels -- Classification
	EN ISO 17633:2017/Amd 1:2021	Welding consumables — Tubular cored electrodes and rods for gas shielded and non-gas shielded metal arc welding of stainless and heat-resisting steels — Classification — Amendment 1
FI	EN ISO 17634:2015	Welding consumables -- Tubular cored electrodes for gas shielded metal arc welding of creep-resisting steels -- Classification
	EN ISO 17777:2016	Welding consumables -- Covered electrodes for manual metal arc welding of copper and copper alloys -- Classification
FI	EN ISO 18273:2015	Welding consumables -- Wire electrodes, wires and rods for welding of aluminium and aluminium alloys -- Classification
FI	EN ISO 18274:2023	Welding consumables — Solid wire electrodes, solid strip electrodes, solid wires and solid rods for fusion welding of nickel and nickel alloys — Classification
FI	EN ISO 18275:2018	Welding consumables -- Covered electrodes for manual metal arc welding of high-strength steels -- Classification
	EN ISO 18276:2017	Welding consumables -- Tubular cored electrodes for gas-shielded and non-gas-shielded metal arc welding of high-strength steels -- Classification
	EN ISO 19288:2016	Welding consumables -- Solid wire electrodes, solid wires and rods for fusion welding of magnesium and magnesium alloys -- Classification

FI	EN ISO 21952:2012	Welding consumables -- Wire electrodes, wires, rods and deposits for gas shielded arc welding of creep-resisting steels -- Classification
	EN ISO 2401:2018	Welding consumables -- Covered electrodes -- Determination of the efficiency, metal recovery and deposition coefficient
FI	EN ISO 24034:2020	Welding consumables -- Solid wire electrodes, solid wires and rods for fusion welding of titanium and titanium alloys -- Classification
	EN ISO 24373:2018	Welding consumables -- Solid wires and rods for fusion welding of copper and copper alloys -- Classification
	EN ISO 24598:2019	Welding consumables -- Solid wire electrodes, tubular cored electrodes and electrode-flux combinations for submerged arc welding of creep-resisting steels -- Classification
FI	EN ISO 2560:2020	Welding consumables -- Covered electrodes for manual metal arc welding of non-alloy and fine grain steels -- Classification
	EN ISO 26304:2018	Welding consumables -- Solid wire electrodes, tubular cored electrodes and electrode-flux combinations for submerged arc welding of high strength steels -- Classification
	EN ISO 3580:2017	Welding consumables -- Covered electrodes for manual metal arc welding of creep-resisting steels -- Classification
	EN ISO 3581:2023	Welding consumables — Covered electrodes for manual metal arc welding of stainless and heat-resisting steels — Classification
	EN ISO 3690:2018	Welding and allied processes -- Determination of hydrogen content in arc weld metal
FI	EN ISO 544:2017	Welding consumables -- Technical delivery conditions for filler materials and fluxes -- Type of product, dimensions, tolerances and markings
	EN ISO 636:2017	Welding consumables -- Rods, wires and deposits for tungsten inert gas welding of non-alloy and fine-grain steels -- Classification
	EN ISO 6847:2020	Welding consumables -- Deposition of a weld metal pad for chemical analysis
FI	EN ISO 6848:2015	Arc welding and cutting -- Nonconsumable tungsten electrodes -- Classification
	EN ISO 8249:2018	Welding -- Determination of Ferrite Number (FN) in austenitic and duplex ferritic-austenitic Cr-Ni stainless steel weld metals
	ISO 20378:2017	Welding consumables -- Rods for gas welding of non alloy and creep-resisting steels -- Classification
	ISO/TR 13393:2009	Welding consumables -- Hardfacing classification -- Microstructures
	ISO/TR 22281:2018	Welding consumables -- International Institute of Welding (IIW) position statement on the use of trace element analyses in welding consumable specifications
	ISO/TR 22824:2003	Welding consumables -- Predicted and measured FN in specifications -- A position statement of the experts of IIW Commission IX
	EN 12074:2000	Welding consumables - Quality requirements for manufacture, supply and distribution of consumables for welding and allied processes
FI	EN 13479:2017	Welding consumables - General product standard for filler metals and fluxes for fusion welding of metallic materials
FI	EN 14532-1:2004	Welding consumables - Test methods and quality requirements - Part 1: Primary methods and conformity assessment of consumables for steel, nickel and nickel alloys
FI	EN 14532-2:2004	Welding consumables - Test methods and quality requirements - Part 2: Supplementary methods and conformity assessment of consumables for steel, nickel and nickel alloys
FI	EN 14532-3:2004	Welding consumables - Test methods and quality requirements - Part 3: Conformity assessment of wire electrodes, wires and rods for welding of aluminium alloys
FI	EN 14700:2014	Welding consumables -- Welding consumables for hard-facing

Tekeillä:

VA	Tunnus	Otsikko	Vaihe	Vaiheen pvm
	ISO/DTR 22824.2	Welding — Best practices for specification and measurement of ferrite in stainless steel weld metal	Loppuäänestys alkaa	14.2.2024

	ISO/FDIS 18276	Welding consumables — Tubular cored electrodes for gas-shielded and non-gas-shielded metal arc welding of high strength steels — Classification	Loppuäänestys rekisteröity	19.2.2024
VA	ISO/DIS 14344	Welding consumables — Procurement of filler materials and fluxes	Lausuntovaihe alkaa	23.1.2024
VA	ISO/DIS 544	Welding consumables — Technical delivery conditions for filler materials and fluxes — Type of product, dimensions, tolerances and markings	Lausuntovaihe alkaa	25.1.2024
VA	ISO/DIS 636	Welding consumables — Rods, wires and deposits for tungsten inert gas welding of non-alloy and fine-grain steels — Classification	Lausuntovaihe alkaa	19.2.2024
VA	ISO/DIS 16834	Welding consumables — Wire electrodes, wires, rods and deposits for gas shielded arc welding of high strength steels — Classification	Lausuntovaihe rekisteröity	20.12.2023
VA	ISO/DIS 17633	Welding consumables — Tubular cored electrodes and rods for gas shielded and non-gas shielded metal arc welding of stainless and heat-resisting steels — Classification	Lausuntovaihe rekisteröity	18.12.2023
VA	ISO/DIS 21952	Welding consumables — Wire electrodes, wires, rods and deposits for gas shielded arc welding of creep-resisting steels — Classification	Lausuntovaihe rekisteröity	19.2.2024
VA	ISO/CD 14343	Welding consumables — Wire electrodes, strip electrodes, wires and rods for arc welding of stainless and heat resisting steels — Classification	Työkohde hyväksytty lausuntovaiheeseen	20.2.2024
VA	ISO/CD 26304	Welding consumables — Solid wire electrodes, tubular cored electrodes and electrode-flux combinations for submerged arc welding of high strength steels — Classification	Komiteavaihe päättyy	1.6.2023
	prEN 14532-1 rev	Welding consumables — Test methods and quality requirements — Part 1: Primary methods and conformity assessment of consumables for steel, nickel and nickel alloys	Työkohde keskeytetty	9.10.2023
	prEN 14532-2 rev	Welding consumables — Test methods and quality requirements — Part 2: Supplementary methods and conformity assessment of consumables for steel, nickel and nickel alloys	Työkohde keskeytetty	9.10.2023
	prEN 14532-3 rev	Welding consumables — Test methods and quality requirements — Part 3: Conformity assessment of wire electrodes, wires and rods for welding of aluminium alloys	Työkohde keskeytetty	9.10.2023

2. Hitsien testaus ja tarkastus

ISO/TC 44/SC 5 Testing and inspection of welds

Julkaisut:

FI	Tunnus	Otsikko
FI	EN ISO 10675-1:2021	Non-destructive testing of welds -- Acceptance levels for radiographic testing -- Part 1: Steel, nickel, titanium and their alloys
FI	EN ISO 10675-2:2021	Non-destructive testing of welds -- Acceptance levels for radiographic testing -- Part 2: Aluminium and its alloys
	EN ISO 10863:2020	Non-destructive testing of welds -- Ultrasonic testing -- Use of time-of-flight diffraction technique (TOFD)
FI	EN ISO 11666:2018	Non-destructive testing of welds -- Ultrasonic testing -- Acceptance levels
FI	EN ISO 13588:2019	Non-destructive testing of welds -- Ultrasonic testing -- Use of automated phased array technology

	EN ISO 15626:2018	Non-destructive testing of welds -- Time-of-flight diffraction technique (TOFD) -- Acceptance levels
	EN ISO 15653:2018	Metallic materials - Method of test for the determination of quasistatic fracture toughness of welds
	EN ISO 17405:2022	Non-destructive testing — Ultrasonic testing — Technique of testing claddings produced by welding, rolling and explosion
FI	EN ISO 17635:2016	Non-destructive testing of welds -- General rules for metallic materials
	EN ISO 17636-1:2022	Non-destructive testing of welds — Radiographic testing — Part 1: X- and gamma-ray techniques with film
	EN ISO 17636-2:2022	Non-destructive testing of welds — Radiographic testing — Part 2: X- and gamma-ray techniques with digital detectors
FI	EN ISO 17637:2016	Non-destructive testing of welds -- Visual testing of fusion-welded joints
FI	EN ISO 17638:2016	Non-destructive testing of welds -- Magnetic particle testing
	EN ISO 17639:2022	Destructive tests on welds in metallic materials — Macroscopic and microscopic examination of welds
FI	EN ISO 17640:2018	Non-destructive testing of welds -- Ultrasonic testing -- Techniques, testing levels, and assessment
	EN ISO 17641-1:2004	Destructive tests on welds in metallic materials -- Hot cracking tests for weldments -- Arc welding processes -- Part 1: General
	EN ISO 17641-2:2015	Destructive tests on welds in metallic materials -- Hot cracking tests for weldments -- Arc welding processes -- Part 2: Self-restraint tests
	EN ISO 17642-1:2004	Destructive tests on welds in metallic materials -- Cold cracking tests for weldments - - Arc welding processes -- Part 1: General
	EN ISO 17642-2:2005	Destructive tests on welds in metallic materials -- Cold cracking tests for weldments - - Arc welding processes -- Part 2: Self-restraint tests
	EN ISO 17642-3:2005	Destructive tests on welds in metallic materials -- Cold cracking tests for weldments - - Arc welding processes -- Part 3: Externally loaded tests
FI	EN ISO 17643:2015	Non-destructive testing of welds -- Eddy current testing of welds by complex-plane analysis
FI	EN ISO 19285:2017	Non-destructive testing of welds - Phased array ultrasonic testing (PAUT) - Acceptance levels
	ISO 19675:2017	Non-destructive testing -- Ultrasonic testing -- Specification for a calibration block for phased array testing (PAUT)
	EN ISO 20601:2018	Non-destructive testing of welds -- Ultrasonic testing -- Use of automated phased array technology for thin-walled steel components
FI	EN ISO 22825:2017	Non-destructive testing of welds -- Ultrasonic testing -- Testing of welds in austenitic steels and nickel-based alloys
	EN ISO 22826:2021	Destructive tests on welds in metallic materials -- Hardness testing of narrow joints welded by laser and electron beam (Vickers and Knoop hardness tests) (ISO 22826:2005)
FI	EN ISO 23277:2015	Non-destructive testing of welds -- Penetrant testing -- Acceptance levels
FI	EN ISO 23278:2015	Non-destructive testing of welds -- Magnetic particle testing -- Acceptance levels
FI	EN ISO 23279:2017	Non-destructive testing of welds -- Ultrasonic testing -- Characterization of indications in welds
	ISO 23864:2021	Non-destructive testing of welds — Ultrasonic testing — Use of automated total focusing technique (TFM) and related technologies
	ISO 23865:2021	Non-destructive testing — Ultrasonic testing — General use of full matrix capture/total focusing technique (FMC/TFM) and related technologies
	ISO 24497-1:2020	Non-destructive testing -- Metal magnetic memory -- Part 1: Vocabulary
	ISO 24497-2:2020	Non-destructive testing -- Metal magnetic memory -- Part 2: General requirements
	ISO 24497-3:2007	Non-destructive testing -- Metal magnetic memory -- Part 3: Inspection of welded joints
FI	EN ISO 4136:2022	Destructive tests on welds in metallic materials — Transverse tensile test
	EN ISO 4761:2022	Non-destructive testing of welds — Phased array ultrasonic testing (UT-PA) for thin-walled steel components — Acceptance levels
FI	EN ISO 5173:2023	Destructive tests on welds in metallic materials -- Bend tests
FI	EN ISO 5178:2019	Destructive tests on welds in metallic materials -- Longitudinal tensile test on weld metal in fusion welded joints

FI	EN ISO 9015-1:2011	Destructive tests on welds in metallic materials -- Hardness testing -- Part 1: Hardness test on arc welded joints
FI	EN ISO 9015-2:2016	Destructive tests on welds in metallic materials -- Hardness testing -- Part 2: Microhardness testing of welded joints
	EN ISO 9016:2022	Destructive tests on welds in metallic materials — Impact tests — Test specimen location, notch orientation and examination
FI	EN ISO 9017:2018	Destructive tests on welds in metallic materials -- Fracture test
FI	EN ISO 9018:2015	Destructive tests on welds in metallic materials -- Tensile test on cruciform and lapped joints
	ISO 18211:2016	Non-destructive testing -- Long range inspection of above ground pipelines and plant piping using guided wave testing with axial propagation
	ISO/TR 14345:2012	Fatigue -- Fatigue testing of welded components -- Guidance
	CEN ISO/TR 16060:2014	Destructive tests on welds in metallic materials -- Etchants for macroscopic and microscopic examination
	CEN ISO/TR 17641-3:2005	Destructive tests on welds in metallic materials -- Hot cracking tests for weldments -- Arc welding processes -- Part 3: Externally loaded tests
	CEN/TR 15135:2005	Welding - Design and non-destructive testing of welds

Tekeillä:

VA	Tunnus	Otsikko	Vaihe	Vaiheen pvm
VA	ISO/DIS 17635	Non-destructive testing of welds — General rules for metallic materials	Lausuntovaihe alkaa	29.11.2023
	ISO/PWI 18211	Non-destructive testing — Long-range inspection of above-ground pipelines and plant piping using guided wave testing with axial propagation	Alustava työkohde rekisteröity	17.6.2021
VA	ISO/PWI 25120-1	Non-destructive testing of welds — Eddy current testing — Part 1: General	Alustava työkohde rekisteröity	5.2.2024
VA	ISO/PWI 25120-2	Welding and allied processes - Eddy current array testing — Part 2: Acceptance criteria	Alustava työkohde rekisteröity	5.2.2024

3. Vastus- ja kitkahitsaus

ISO/TC 44/SC 6 Resistance welding and allied mechanical joining

Julkaisut:

FI	Tunnus	Otsikko
	EN ISO 10447:2022	Resistance welding -- Testing of welds -- Peel and chisel testing of resistance spot and projection welds
	EN ISO 10656:2021	Resistance welding equipment -- Transformers -- Integrated transformers for welding guns
FI	EN ISO 1089:2023	Resistance welding equipment — Electrode taper fits for spot welding equipment — Dimensions
	EN ISO 12996:2013	Mechanical joining -- Destructive testing of joints -- Specimen dimensions and test procedure for tensile shear testing of single joints
	ISO 13469:2014	Mechanical joining -- Form-fit blind rivets and (lock) bolt joints -- Specifications and qualification of testing procedures
	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
FI	EN ISO 14271:2017	Resistance welding -- Vickers hardness testing (low-force and microhardness) of resistance spot, projection, and seam welds
	EN ISO 14272:2016	Resistance welding -- Destructive testing of welds -- Specimen dimensions and procedure for cross tension testing of resistance spot and embossed projection welds

	EN ISO 14273:2016	Resistance welding -- Destructive testing of welds -- Specimen dimensions and procedure for tensile shear testing resistance spot and embossed projection welds
	EN ISO 14323:2015	Resistance welding -- Destructive testing of welds -- Specimen dimensions and procedure for impact tensile shear test and cross-tension testing of resistance spot and embossed projection welds
	EN ISO 14324:2003	Resistance spot welding -- Destructive tests of welds -- Method for the fatigue testing of spot welded joints
	EN ISO 14327:2004	Resistance welding -- Procedures for determining the weldability lobe for resistance spot, projection and seam welding
FI	EN ISO 14329:2003	Resistance welding -- Destructive tests of welds -- Failure types and geometric measurements for resistance spot, seam and projection welds
	EN ISO 14373:2024	Resistance welding — Procedure for spot welding of uncoated and coated low-carbon steels
FI	EN ISO 14554-1:2013	Quality requirements for welding -- Resistance welding of metallic materials -- Part 1: Comprehensive quality requirements
FI	EN ISO 14554-2:2013	Quality requirements for welding -- Resistance welding of metallic materials -- Part 2: Elementary quality requirements
FI	EN ISO 15609-5:2011	Specification and qualification of welding procedures for metallic materials -- Welding procedure specification -- Part 5: Resistance welding
	EN ISO 15614-12:2021	Specification and qualification of welding procedures for metallic materials -- Welding procedure test -- Part 12: Spot, seam and projection welding
	EN ISO 15614-13:2023	Specification and qualification of welding procedures for metallic materials — Welding procedure test — Part 13: Upset (resistance butt) and flash welding
	ISO 16237:2015	Mechanical joining -- Destructive testing of joints -- Specimen dimensions and test procedure for cross-tension testing of single joints
	EN ISO 16432:2007	Resistance welding -- Procedure for projection welding of uncoated and coated low carbon steels using embossed projection(s)
	EN ISO 16433:2007	Resistance welding -- Procedure for seam welding of uncoated and coated low carbon steels
FI	EN ISO 17653:2012	Resistance welding -- Destructive tests on welds in metallic materials -- Torsion test of resistance spot welds
	EN ISO 17654:2011	Resistance welding -- Destructive tests of welds -- Pressure test of resistance seam welds
	EN ISO 17657-1:2007	Resistance welding -- Welding current measurement for resistance welding -- Part 1: Guidelines for measurement
	EN ISO 17657-2:2007	Resistance welding -- Welding current measurement for resistance welding -- Part 2: Welding current meter with current sensing coil
	EN ISO 17657-3:2007	Resistance welding -- Welding current measurement for resistance welding -- Part 3: Current sensing coil
	EN ISO 17657-4:2007	Resistance welding -- Welding current measurement for resistance welding -- Part 4: Calibration system
	EN ISO 17657-5:2007	Resistance welding -- Welding current measurement for resistance welding -- Part 5: Verification of welding current measuring system
	EN ISO 17677-1:2021	Resistance welding -- Vocabulary -- Part 1: Spot, projection and seam welding
	EN ISO 18278-1:2022	Resistance welding — Weldability — Part 1: General requirements for the evaluation of weldability for resistance spot, seam and projection welding of metallic materials
	EN ISO 18278-2:2016	Resistance welding -- Weldability -- Part 2: Evaluation procedures for weldability in spot welding
	EN ISO 18278-3:2017	Resistance welding -- Weldability -- Part 3: Evaluation procedures for weldability in spot weld bonding
	EN ISO 18592:2019	Resistance welding -- Destructive testing of welds -- Method for the fatigue testing of multi-spot-welded specimens
	EN ISO 18594:2007	Resistance spot-, projection- and seam-welding -- Method for determining the transition resistance on aluminium and steel material
	EN ISO 18595:2021	Resistance welding — Spot welding of aluminium and aluminium alloys — Weldability, welding and testing

	EN ISO 18785-1:2021	Friction stir spot welding -- Aluminium -- Part 1: Vocabulary (ISO 18785-1:2018)
	EN ISO 18785-2:2021	Friction stir spot welding -- Aluminium -- Part 2: Design of weld joints (ISO 18785-2:2018)
	EN ISO 18785-3:2021	Friction stir spot welding -- Aluminium -- Part 3: Qualification of welding operators (ISO 18785-3:2018)
	EN ISO 18785-4:2021	Friction stir spot welding -- Aluminium -- Part 4: Specification and qualification of welding procedures (ISO 18785-4:2018)
	EN ISO 18785-5:2021	Friction stir spot welding -- Aluminium -- Part 5: Quality and inspection requirements (ISO 18785-5:2018)
	EN ISO 20168:2021	Resistance welding -- Locking tapers for electrode holders and electrode caps (ISO 20168:2016)
	EN ISO 22829:2017	Resistance welding equipment -- Transformers -- Integrated transformer-rectifier units for welding guns operating at 1 000 Hz
	ISO 23598:2021	Mechanical joining of sheet materials — Destructive testing of joints — Specimen dimensions and procedure for mechanized peel testing of single joints
	EN ISO 25239-1:2020	Friction stir welding -- Aluminium -- Part 1: Vocabulary
	EN ISO 25239-2:2020	Friction stir welding -- Aluminium -- Part 2: Design of weld joints
	EN ISO 25239-3:2020	Friction stir welding -- Aluminium -- Part 3: Qualification of welding operators
	EN ISO 25239-4:2020	Friction stir welding -- Aluminium -- Part 4: Specification and qualification of welding procedures
	EN ISO 25239-5:2020	Friction stir welding -- Aluminium -- Part 5: Quality and inspection requirements
	EN ISO 5182:2016	Resistance welding -- Materials for electrodes and ancillary equipment
FI	EN ISO 5183-1:2000	Resistance welding equipment -- Electrode adaptors, male taper 1:10 -- Part 1: Conical fixing, taper 1:10
FI	EN ISO 5183-2:2001	Resistance spot welding -- Electrode adaptors, male taper 1:10 -- Part 2: Parallel shank fixing for end-thrust electrodes
	ISO 5184:1979	Straight resistance spot welding electrodes
FI	EN ISO 5821:2009	Resistance welding -- Spot welding electrode caps
	ISO 5822:1988	Spot welding equipment -- Taper plug gauges and taper ring gauges
FI	EN ISO 5826:2014	Resistance welding equipment -- Transformers -- General specifications applicable to all transformers
	ISO 5827:1983	Spot welding -- Electrode back-ups and clamps
	EN ISO 5828:2001	Resistance welding equipment -- Secondary connecting cables with terminals connected to water-cooled lugs -- Dimensions and characteristics
FI	EN ISO 5829:2021	Resistance spot welding -- Electrode adaptors, female taper 1:10 (ISO 5829:1984)
FI	EN ISO 5830:2021	Resistance spot welding -- Male electrode caps (ISO 5830:1984)
	ISO 6210-1:1991	Cylinders for robot resistance welding guns -- Part 1: General requirements
	EN ISO 669:2016	Resistance welding -- Resistance welding equipment -- Mechanical and electrical requirements
	ISO 693:1982	Dimensions of seam welding wheel blanks
	EN ISO 7285:2021	Pneumatic cylinders for mechanized multiple spot welding (ISO 7285:1995)
	ISO 7931:1985	Insulation caps and bushes for resistance welding equipment
	EN ISO 8167:2021	Resistance welding — Embossed projection welding — Projections for resistance welding
	EN ISO 8205:2021	Resistance welding equipment — Water-cooled secondary connection cables
FI	EN ISO 8430-1:2016	Resistance spot welding - Electrode holders - Part 1: Taper fixing 1:10
FI	EN ISO 8430-2:2016	Resistance spot welding - Electrode holders - Part 2: Morse taper fixing
FI	EN ISO 8430-3:2016	Resistance spot welding - Electrode holders - Part 3: Parallel shank fixing for end thrust
	EN 20693:1991	Dimensions of seam welding wheel blanks (ISO 693:1982)
	EN 20865:1991	Slots in plates for projection welding machines (ISO 865:1981)
FI	EN 25184:1994	Straight resistance spot welding electrodes (ISO 5184:1979)
	EN 25822:1991	Spot welding equipment - Taper plug gauges and taper ring gauges (ISO 5822:1988)

	EN 25827:1992	Spot welding - Electrode back-ups and clamps (ISO 5827:1983)
FI	EN 27931:1992	Insulation caps and bushes for resistance welding equipment (ISO 7931:1985)
FI	EN 29313:1992	Resistance spot welding equipment - Cooling tubes (ISO 9313:1989)
	ISO/TR 12998:2019	Mechanical joining -- Guidelines for fatigue testing of joints
	ISO/TR 23413:2019	Resistance welding -- Overview of standards for resistance welding

Tekeillä:

VA	Tunnus	Otsikko	Vaihe	Vaiheen pvm
VA	ISO/AWI 5821	Resistance welding — Spot welding electrode caps	Työkohde rekisteröity	2.2.2023
VA	ISO/PWI 25901-6	Welding and allied processes — Vocabulary — Part 6: Resistance welding	Alustava työkohde rekisteröity	24.11.2023
VA	ISO/PWI 25116-1	Friction stir welding - Ferrous materials — Part 1: Vocabulary	Alustava työkohde rekisteröity	5.2.2024
VA	ISO/PWI 25116-2	Friction stir welding - Ferrous materials — Part 2: Design of weld joints	Alustava työkohde rekisteröity	5.2.2024
VA	ISO/PWI 25116-3	Friction stir welding - Ferrous materials — Part 3: Qualification of welding operators	Alustava työkohde rekisteröity	5.2.2024
VA	ISO/PWI 25116-4	Friction stir welding - Ferrous materials — Part 4: Specification and qualification of welding procedures	Alustava työkohde rekisteröity	5.2.2024
VA	ISO/PWI 25116-5	Friction stir welding - Ferrous materials — Part 5: Quality and inspection requirements	Alustava työkohde rekisteröity	5.2.2024

4. Sanasto

ISO/TC 44/SC 7 Representation and terms

Julkaisut:

FI	Tunnus	Otsikko
	EN ISO 17658:2015	Welding -- Imperfections in oxyfuel flame cuts, laser beam cuts and plasma cuts -- Terminology
FI	EN ISO 17659:2004	Welding -- Multilingual terms for welded joints with illustrations
FI	EN ISO 2553:2019	Welding and allied processes -- Symbolic representation on drawings -- Welded joints
FI	EN ISO 4063:2023	Welding, brazing, soldering and cutting — Nomenclature of processes and reference numbers
FI	EN ISO 6520-1:2007	Welding and allied processes -- Classification of geometric imperfections in metallic materials -- Part 1: Fusion welding
	EN ISO 6520-2:2013	Welding and allied processes -- Classification of geometric imperfections in metallic materials -- Part 2: Welding with pressure
FI	EN ISO 6947:2019	Welding and allied processes -- Welding positions
	ISO 857-1:1998	Welding and allied processes -- Vocabulary -- Part 1: Metal welding processes
	ISO 857-2:2005	Welding and allied processes -- Vocabulary -- Part 2: Soldering and brazing processes and related terms
FI	EN ISO 9692-1:2013	Welding and allied processes -- Types of joint preparation -- Part 1: Manual metal arc welding, gas-shielded metal arc welding, gas welding, TIG welding and beam welding of steels
FI	EN ISO 9692-2:1998	Welding and allied processes -- Joint preparation -- Part 2: Submerged arc welding of steels
FI	EN ISO 9692-3:2016	Welding and allied processes -- Recommendations for joint preparation -- Part 3: Metal inert gas welding and tungsten inert gas welding of aluminium and its alloys
FI	EN ISO 9692-4:2003	Welding and allied processes -- Recommendations for joint preparation -- Part 4: Clad steels

	ISO/TR 25901-1:2016	Welding and allied processes — Vocabulary — Part 1: General terms
	ISO/TR 25901-2:2023	Welding and allied processes — Vocabulary — Part 2: Health and safety
FI	ISO/TR 25901-3:2016	Welding and allied processes — Vocabulary — Part 3: Welding processes
	ISO/TR 25901-4:2016	Welding and allied processes — Vocabulary — Part 4: Arc welding
	ISO/TR 581:2005	Weldability — Metallic materials — General principles
FI	SFS 3052:2020	Hitsaussanasto. Yleistermi
FI	SFS 3053 (1983)	Hitsaussanasto. Terminen leikkaus (de en fi sv)
FI	SFS 3054:2020	Hitsaussanasto. Kaarihitsaus
FI	SFS 3055 (1990)	Hitsaussanasto. Vastushitsaus (de en fi sv)
FI	SFS 3056 (1983)	Hitsaussanasto. Kaasuhitsaus (de en fi sv)
FI	SFS 3057 (1983)	Hitsaussanasto. Juotto (de en fi sv)
FI	SFS 3059 (1983)	Hitsaussanasto. Erityishitsausmenetelmät (de en fi sv)

Tekeillä:

VA	Tunnus	Otsikko	Vaihe	Vaiheen pvm
VA	ISO 9692-2	Welding and allied processes — Joint preparation — Part 2: Submerged arc welding of steels	Rekisteröity julkaistavaksi	8.12.2023
VA	ISO/AWI 25901-5	Welding and allied processes — Vocabulary — Part 5: Laser welding	Työkohde rekisteröity	27.5.2022
VA	ISO/PWI 25901-1	Welding and allied processes — Vocabulary — Part 1: General terms	Alustava työkohde rekisteröity	1.12.2022
VA	ISO/PWI 25901-4	Welding and allied processes — Vocabulary — Part 4: Arc welding	Alustava työkohde rekisteröity	1.12.2022

5. Kaasuhitsausvarusteet

ISO/TC 44/SC 8 Equipment for gas welding, cutting and allied processes

Julkaisut:

FI	Tunnus	Otsikko
	EN ISO 10225:2021	Gas welding equipment -- Marking for equipment used for gas welding, cutting and allied processes
	ISO 12170:1996	Gas welding equipment -- Thermoplastic hoses for welding and allied processes
	ISO 14112:1996	Gas welding equipment -- Small kits for gas brazing and welding
FI	EN ISO 14113:2013	Gas welding equipment -- Rubber and plastics hose and hose assemblies for use with industrial gases up to 450 bar (45 MPa)
	EN ISO 14114:2018	Gas welding equipment -- Acetylene manifold systems for welding, cutting and allied processes -- General requirements
	EN ISO 15296:2017	Gas welding equipment -- Vocabulary
FI	EN ISO 15615:2022	Gas welding equipment -- Acetylene manifold systems for welding, cutting and allied processes -- Safety requirements in high-pressure devices
FI	EN ISO 2503:2009	Gas welding equipment -- Pressure regulators and pressure regulators with flow-metering devices for gas cylinders used in welding, cutting and allied processes up to 300 bar (30 MPa)
	EN ISO 2503:2009/A1	A1:2015
	EN ISO 3821:2019	Gas welding equipment -- Rubber hoses for welding, cutting and allied processes
	EN ISO 5171:2019	Gas welding equipment -- Pressure gauges used in welding, cutting and allied processes
FI	EN ISO 5172:2006	Gas welding equipment -- Blowpipes for gas welding, heating and cutting -- Specifications and tests

FI	EN ISO 5172:2006/A1	A1:2012
	EN ISO 5175-1:2017	Gas welding equipment -- Safety devices -- Part 1: Devices incorporating a flame (flashback) arrestor
	EN ISO 5175-2:2017	Gas welding equipment -- Safety devices -- Part 2: Devices not incorporating a flame (flashback) arrestor
	EN ISO 7287:2002	Graphical symbols for thermal cutting equipment
	ISO 7289:2018	Gas welding equipment -- Quick-action couplings with shut-off valves for welding, cutting and allied processes
FI	EN ISO 7291:2010	Gas welding equipment -- Pressure regulators for manifold systems used in welding, cutting and allied processes up to 30 MPa (300 bar)
FI	EN ISO 7291:2010/A1	A1:2015
	ISO 8206:1991	Acceptance tests for oxygen cutting machines -- Reproducible accuracy -- Operational characteristics
	ISO 8207:1996	Gas welding equipment -- Specification for hose assemblies for equipment for welding, cutting and allied processes
FI	EN ISO 9012:2023	Gas welding equipment — Air-aspirated hand blowpipes — Specifications and tests
FI	EN ISO 9013:2017	Thermal cutting -- Classification of thermal cuts -- Geometrical product specification and quality tolerances
	EN ISO 9090:2019	Gas tightness of equipment for gas welding and allied processes
FI	EN ISO 9539:2010	Gas welding equipment -- Materials for equipment used in gas welding, cutting and allied processes
FI	EN ISO 9539:2010/A1	A1:2013
	ISO/TR 28821:2012	Gas welding equipment -- Hose connections for equipment for welding, cutting and allied processes -- Listing of connections which are either standardised or in common use
	CEN/TR 13259:2023	Gas welding equipment - Industrial manual and machine blowpipes for flame heating, flame brazing and allied processes
	CEN/TR 15068:2009	Gas welding equipment - Measurement of noise emitted by blowpipe for welding, cutting, heating, brazing and soldering - Measurement method
FI	EN 1256:2006	Gas welding equipment - Specification for hose assemblies for equipment for welding, cutting and allied processes
FI	EN 1326:1996	Gas welding equipment - Small kits for gas brazing and welding
FI	EN 1327:1996	Gas welding equipment - Thermoplastic hoses for welding and allied processes
FI	EN 28206:1992	Acceptance tests for oxygen cutting machines - Reproducible accuracy - Operational characteristics (ISO 8206:1991)
FI	EN 29090:1992	Gas tightness of equipment for gas welding and allied processes (ISO 9090:1989)
	EN 560:2018	Gas welding equipment - Hose connections for equipment for welding, cutting and allied processes
FI	EN 561:2002	Gas welding equipment - Quick-action coupling with shut-off valves for welding, cutting and allied processes

Tekeillä:

VA	Tunnus	Otsikko	Vaihe	Vaiheen pvm
	FprEN 17942	Welding and allied processes - Gas welding equipment - Safety requirements for thermoprocess equipment with open firing oxy-fuel gas welding equipment	Aänestysluonnos lähetetty CENiin	21.12.2023
	prEN 17931	Gas welding equipment - Manual gas equipment for welding, heating and cutting - Periodic Inspection	Lausuntokierros päättyy	11.5.2023
VA	ISO 7287:2002/ DAmd 1	Graphical symbols for thermal cutting equipment — Amendment 1	Lausuntovaihe alkaa	8.12.2023

VA	ISO 9013:2017/ DAmd 1	Thermal cutting — Classification of thermal cuts — Geometrical product specification and quality tolerances — Amendment 1	Työkohde hyväksytty lausuntovaiheeseen	28.9.2023
	ISO/DIS 22073-1	Gas welding equipment — Part 1: Line pressure regulators and line pressure regulators with flow-metering devices for gas distribution pipelines up to 60 bar (6 MPa)	Lausuntovaihe alkaa	19.2.2024
	ISO/DIS 11872	Gas welding equipment — Decomposition blockers for high-pressure acetylene	Lausuntovaihe rekisteröity	19.12.2023
	ISO/DIS 5175-3	Gas welding equipment — Safety devices — Part 3: Decomposition blockers for low pressure acetylene	Lausuntovaihe rekisteröity	5.1.2024
	ISO/AWI 8207	Gas welding equipment — Specification for hose assemblies for equipment for welding, cutting and allied processes	Hyväksytty työkohteeksi	13.11.2023
	ISO/PWI 8206	Acceptance tests for oxygen cutting machines — Reproducible accuracy — Operational characteristics	Alustava työkohde rekisteröity	6.10.2022

6. Työympäristö

ISO/TC 44/SC 9 Health and safety

Julkaisut:

FI	Tunnus	Otsikko
	EN ISO 10882-1:2011	Health and safety in welding and allied processes -- Sampling of airborne particles and gases in the operator's breathing zone -- Part 1: Sampling of airborne particles
	EN ISO 10882-2:2000	Health and safety in welding and allied processes -- Sampling of airborne particles and gases in the operator's breathing zone -- Part 2: Sampling of gases
	EN ISO 15011-1:2009	Health and safety in welding and allied processes -- Laboratory method for sampling fume and gases -- Part 1: Determination of fume emission rate during arc welding and collection of fume for analysis
	EN ISO 15011-2:2009	Health and safety in welding and allied processes -- Laboratory method for sampling fume and gases -- Part 2: Determination of the emission rates of carbon monoxide (CO), carbon dioxide (CO2), nitrogen monoxide (NO) and nitrogen dioxide (NO2) during arc welding, cutting and gouging
	EN ISO 15011-3:2009	Health and safety in welding and allied processes -- Laboratory method for sampling fume and gases -- Part 3: Determination of ozone emission rate during arc welding
	EN ISO 15011-4:2018	Health and safety in welding and allied processes -- Laboratory method for sampling fume and gases -- Part 4: Fume data sheets
	EN ISO 15011-5:2011	Health and safety in welding and allied processes -- Laboratory method for sampling fume and gases -- Part 5: Identification of thermal-degradation products generated when welding or cutting through products composed wholly or partly of organic materials using pyrolysis-gas chromatography-mass spectrometry
	ISO 17846:2004	Welding and allied processes -- Health and safety -- Wordless precautionary labels for equipment and consumables used in arc welding and cutting
	EN ISO 17916:2016	Safety of thermal cutting machines
	EN ISO 21904-1:2020	Health and safety in welding and allied processes — Equipment for capture and separation of welding fume — Part 1: General requirements
	EN ISO 21904-2:2020	Health and safety in welding and allied processes — Equipment for capture and separation of welding fume — Part 2: Requirements for testing and marking of separation efficiency
	EN ISO 21904-3:2018	Health and safety in welding and allied processes -- Requirements, testing and marking of equipment for air filtration -- Part 3: Determination of the capture efficiency of on-torch welding fume extraction devices

EN ISO 21904-4:2020	Health and safety in welding and allied processes — Equipment for capture and separation of welding fume — Part 4: Determination of the minimum air volume flow rate of capture devices
EN ISO 25980:2023	Health and safety in welding and allied processes — Transparent welding curtains, strips and screens for arc welding processes
CEN ISO/TS 15011-6:2012	Health and safety in welding and allied processes -- Laboratory method for sampling fume and gases -- Part 6: Procedure for quantitative determination of fume and gases from resistance spot welding
ISO/TR 13392:2014	Health and safety in welding and allied processes -- Arc welding fume components
ISO/TR 18786:2014	Health and safety in welding -- Guidelines for risk assessment of welding fabrication activities
EN 14717:2005	Welding and allied processes - Environmental check list

Tekeillä:

VA	Tunnus	Otsikko	Vaihe	Vaiheen pvm
VA	ISO/PRF 10882-1	Health and safety in welding and allied processes — Sampling of airborne particles and gases in the operator's breathing zone — Part 1: Sampling of airborne particles	Loppuäänestys rekisteröity	13.2.2024
VA	ISO/PRF 10882-2	Health and safety in welding and allied processes — Sampling of airborne particles and gases in the operator's breathing zone — Part 2: Sampling of gases	Loppuäänestys rekisteröity	13.2.2024
	FprEN 14717	Welding and allied processes - Environmental check list	Loppuäänestys alkaa	25.1.2024

7. Hitsauksen laatu

ISO/TC 44/SC 10 Quality management in the field of welding

Julkaisut:

FI	Tunnus	Otsikko
FI	EN ISO 10042:2018	Welding -- Arc-welded joints in aluminium and its alloys -- Quality levels for imperfections
	EN ISO 12932:2013	Welding -- Laser-arc hybrid welding of steels, nickel and nickel alloys -- Quality levels for imperfections
FI	EN ISO 13916:2017	Welding -- Guidance on the measurement of preheating temperature, interpass temperature and preheat maintenance temperature
	EN ISO 13918:2018	Welding -- Studs and ceramic ferrules for arc stud welding
	EN ISO 13918:2017/Amd 1:2021	Welding — Studs and ceramic ferrules for arc stud welding — Amendment 1
	EN ISO 13919-1:2019	Welding -- Electron and laser-beam welded joints -- Guidance on quality levels for imperfections -- Part 1: Steel
	EN ISO 13919-2:2021	Electron and laser-beam welded joints — Requirements and recommendations on quality levels for imperfections — Part 2: Aluminium, magnesium and their alloys and pure copper
FI	EN ISO 13920:2023	Welding — General tolerances for welded constructions — Dimensions for lengths and angles, shape and position
	ISO 14346:2013	Static design procedure for welded hollow-section joints -- Recommendations
	ISO 14347:2008	Fatigue -- Design procedure for welded hollow-section joints -- Recommendations
FI	EN ISO 14555:2017	Welding -- Arc stud welding of metallic materials
	EN ISO 14744-1:2008	Welding -- Acceptance inspection of electron beam welding machines -- Part 1: Principles and acceptance conditions

	EN ISO 14744-2:2000	Welding -- Acceptance inspection of electron beam welding machines -- Part 2: Measurement of accelerating voltage characteristics
	EN ISO 14744-3:2000	Welding -- Acceptance inspection of electron beam welding machines -- Part 3: Measurement of beam current characteristics
	EN ISO 14744-4:2000	Welding -- Acceptance inspection of electron beam welding machines -- Part 4: Measurement of welding speed
	EN ISO 14744-5:2000	Welding -- Acceptance inspection of electron beam welding machines -- Part 5: Measurement of run-out accuracy
	EN ISO 14744-6:2000	Welding -- Acceptance inspection of electron beam welding machines -- Part 6: Measurement of stability of spot position
FI	EN ISO 15607:2019	Specification and qualification of welding procedures for metallic materials -- General rules
FI	EN ISO 15609-1:2019	Specification and qualification of welding procedures for metallic materials -- Welding procedure specification -- Part 1: Arc welding
FI	EN ISO 15609-2:2019	Specification and qualification of welding procedures for metallic materials -- Welding procedure specification -- Part 2: Gas welding
	EN ISO 15609-3:2004	Specification and qualification of welding procedures for metallic materials -- Welding procedure specification -- Part 3: Electron beam welding
	EN ISO 15609-4:2009	Specification and qualification of welding procedures for metallic materials -- Welding procedure specification -- Part 4: Laser beam welding
	EN ISO 15609-6:2013	Specification and qualification of welding procedures for metallic materials -- Welding procedure specification -- Part 6: Laser-arc hybrid welding
FI	EN ISO 15610:2023	Specification and qualification of welding procedures for metallic materials — Qualification based on tested welding consumables
FI	EN ISO 15611:2024	Specification and qualification of welding procedures for metallic materials — Qualification based on previous welding experience
FI	EN ISO 15612:2018	Specification and qualification of welding procedures for metallic materials -- Qualification by adoption of a standard welding procedure
FI	EN ISO 15613:2004	Specification and qualification of welding procedures for metallic materials -- Qualification based on pre-production welding test
FI	EN ISO 15614-1:2017	Specification and qualification of welding procedures for metallic materials -- Welding procedure test -- Part 1: Arc and gas welding of steels and arc welding of nickel and nickel alloys
FI	EN ISO 15614-1:2017/A1:2019	Specification and qualification of welding procedures for metallic materials -- Welding procedure test -- Part 1: Arc and gas welding of steels and arc welding of nickel and nickel alloys -- Amendment 1 (aaltomuoto-ohjauksen poistaminen)
FI	EN ISO 15614-2:2005	Specification and qualification of welding procedures for metallic materials -- Welding procedure test -- Part 2: Arc welding of aluminium and its alloys
	EN ISO 15614-3:2008	Specification and qualification of welding procedures for metallic materials -- Welding procedure test -- Part 3: Fusion welding of non-alloyed and low-alloyed cast irons
	EN ISO 15614-4:2005	Specification and qualification of welding procedures for metallic materials -- Welding procedure test -- Part 4: Finishing welding of aluminium castings
FI	EN ISO 15614-5:2004	Specification and qualification of welding procedures for metallic materials -- Welding procedure test -- Part 5: Arc welding of titanium, zirconium and their alloys
FI	EN ISO 15614-6:2006	Specification and qualification of welding procedures for metallic materials -- Welding procedure test -- Part 6: Arc and gas welding of copper and its alloys
	EN ISO 15614-7:2019	Specification and qualification of welding procedures for metallic materials -- Welding procedure test -- Part 7: Overlay welding
FI	EN ISO 15614-8:2016	Specification and qualification of welding procedures for metallic materials -- Welding procedure test -- Part 8: Welding of tubes to tube-plate joints
	EN ISO 15614-10:2005	Specification and qualification of welding procedures for metallic materials -- Welding procedure test -- Part 10: Hyperbaric dry welding
	EN ISO 15614-11:2002	Specification and qualification of welding procedures for metallic materials -- Welding procedure test -- Part 11: Electron and laser beam welding

EN ISO 15614-14:2013	Specification and qualification of welding procedures for metallic materials -- Welding procedure test -- Part 14: Laser-arc hybrid welding of steels, nickel and nickel alloys
EN ISO 15616-1:2003	Acceptance tests for CO ₂ -laser beam machines for high quality welding and cutting -- Part 1: General principles, acceptance conditions
EN ISO 15616-2:2003	Acceptance tests for CO ₂ -laser beam machines for high quality welding and cutting -- Part 2: Measurement of static and dynamic accuracy
EN ISO 15616-3:2003	Acceptance tests for CO ₂ -laser beam machines for high quality welding and cutting -- Part 3: Calibration of instruments for measurement of gas flow and pressure
EN ISO 15616-4:2021	Acceptance tests for CO ₂ -laser beam machines for high quality welding and cutting -- Part 4: Machines with 2-D moving optics (ISO 15616-4:2008)
EN ISO 15620:2019	Welding -- Friction welding of metallic materials
EN ISO 17279-1:2021	Welding -- Micro joining of 2nd generation high temperature superconductors -- Part 1: General requirements for the procedure
EN ISO 17279-2:2018	Welding -- Micro joining of 2nd generation high temperature superconductors -- Part 2: Qualification for welding and testing personnel
EN ISO 17279-3:2021	Welding — Micro joining of second generation high temperature superconductors — Part 3: Test methods for joints
EN ISO 17652-1:2003	Welding -- Test for shop primers in relation to welding and allied processes -- Part 1: General requirements
EN ISO 17652-2:2003	Welding -- Test for shop primers in relation to welding and allied processes -- Part 2: Welding properties of shop primers
EN ISO 17652-3:2003	Welding -- Test for shop primers in relation to welding and allied processes -- Part 3: Thermal cutting
EN ISO 17652-4:2003	Welding -- Test for shop primers in relation to welding and allied processes -- Part 4: Emission of fumes and gases
FI EN ISO 17660-1:2006	Welding -- Welding of reinforcing steel -- Part 1: Load-bearing welded joints
FI EN ISO 17660-2:2006	Welding -- Welding of reinforcing steel -- Part 2: Non load-bearing welded joints
FI EN ISO 17662:2016	Welding -- Calibration, verification and validation of equipment used for welding, including ancillary activities
FI EN ISO 17663:2023	Welding — Quality requirements for heat treatment in connection with welding and allied processes
EN ISO 22827-1:2005	Acceptance tests for Nd:YAG laser beam welding machines -- Machines with optical fibre delivery -- Part 1: Laser assembly
EN ISO 22827-2:2005	Acceptance tests for Nd:YAG laser beam welding machines -- Machines with optical fibre delivery -- Part 2: Moving mechanism
ISO 23493:2020	Welding and allied processes — Process specification for laser-arc hybrid welding for metallic materials
FI EN ISO 3834-1:2021	Quality requirements for fusion welding of metallic materials -- Part 1: Criteria for the selection of the appropriate level of quality requirements
FI EN ISO 3834-2:2021	Quality requirements for fusion welding of metallic materials -- Part 2: Comprehensive quality requirements
FI EN ISO 3834-3:2021	Quality requirements for fusion welding of metallic materials -- Part 3: Standard quality requirements
FI EN ISO 3834-4:2021	Quality requirements for fusion welding of metallic materials -- Part 4: Elementary quality requirements
FI EN ISO 3834-5:2021	Quality requirements for fusion welding of metallic materials -- Part 5: Documents with which it is necessary to conform to claim conformity to the quality requirements of ISO 3834-2, ISO 3834-3 or ISO 3834-4
FI EN ISO 5817:2023	Welding — Fusion-welded joints in steel, nickel, titanium and their alloys (beam welding excluded) — Quality levels for imperfections
CEN ISO/TR 14745:2015	Welding -- Post-weld heat treatment parameters for steels
FI CEN ISO/TR 15608:2017	Welding -- Guidelines for a metallic materials grouping system
ISO/TR 17671-1:2002	Welding -- Recommendations for welding of metallic materials -- Part 1: General guidance for arc welding

	ISO/TR 17671-2:2002	Welding -- Recommendations for welding of metallic materials -- Part 2: Arc welding of ferritic steels
	ISO/TR 17671-3:2002	Welding -- Recommendations for welding of metallic materials -- Part 3: Arc welding of stainless steels
	ISO/TR 17671-4:2002	Welding -- Recommendations for welding of metallic materials -- Part 4: Arc welding of aluminium and aluminium alloys
	ISO/TR 17671-5:2004	Welding -- Recommendations for welding of metallic materials -- Part 5: Welding of clad steels
	ISO/TR 17671-6:2005	Welding -- Recommendations for welding of metallic materials -- Part 6: Laser beam welding
	ISO/TR 17671-7:2004	Welding -- Recommendations for welding of metallic materials -- Part 7: Electron beam welding
	CEN ISO/TR 17844:2004	Welding -- Comparison of standardised methods for the avoidance of cold cracks
	ISO/TR 18491:2015	Welding and allied processes -- Guidelines for measurement of welding energies
FI	CEN ISO/TR 20172:2021	Welding -- Grouping systems for materials -- European materials
	CEN ISO/TR 20173:2018	Welding -- Grouping systems for materials -- American materials
	CEN ISO/TR 20174:2020	Welding -- Grouping systems for materials -- Japanese materials
	ISO/TS 18166:2016	Numerical welding simulation -- Execution and documentation
	ISO/TS 20273:2017	Guidelines on weld quality in relationship to fatigue strength
	CEN ISO/TR 3834-6:2007	Quality requirements for fusion welding of metallic materials -- Part 6: Guidelines on implementing ISO 3834
	CEN/TR 15235:2005	Welding - Methods for assessing imperfections in metallic structures
FI	CEN/TR 15481:2006	Welding of reinforcing steel - Tack weldability - Test methods and performance requirements
FI	EN 1011-1:2009	Welding - Recommendations for welding of metallic materials - Part 1: General guidance for arc welding
FI	EN 1011-2:2001	Welding - Recommendations for welding of metallic materials - Part 2: Arc welding of ferritic steels
	EN 1011-2:2001/A1	A1:2003
FI	EN 1011-3:2018	Welding - Recommendations for welding of metallic materials - Part 3: Arc welding of stainless steels
FI	EN 1011-4:2000	Welding - Recommendations for welding of metallic materials - Part 4: Arc welding of aluminium and aluminium alloys
	EN 1011-4:2000/A1	A1:2003
FI	EN 1011-5:2003	Welding - Recommendations for welding of metallic materials - Part 5: Welding of clad steel
	EN 1011-6:2018	Welding - Recommendation for welding of metallic materials - Part 6: Laser beam welding
	EN 1011-7:2004	Welding - Recommendations for welding of metallic materials - Part 7: Electron beam welding
FI	EN 1708-1:2010	Welding - Basic welded joint details in steel - Part 1: Pressurized components
FI	EN 1708-2:2018	Welding - Basic weld joint details in steel - Part 2: Non internal pressurized components
	EN 1708-3:2012	Welding - Basic weld joint details in steel - Part 3: Clad, buttered and lined pressurized components

Tekeillä:

VA	Tunnus	Otsikko	Vaihe	Vaiheen pvm
VA	ISO 15610	Specification and qualification of welding procedures for metallic materials — Qualification based on tested welding consumables	Rekisteröity julkaistavaksi	5.2.2024

VA	ISO 15614-5	Specification and qualification of welding procedures for metallic materials — Welding procedure test — Part 5: Arc welding of titanium, zirconium and their alloys	Rekisteröity julkaistavaksi	6.1.2024
VA	ISO 3834-6	Quality requirements for fusion welding of metallic materials — Part 6: Guidelines on implementing ISO 3834	Rekisteröity julkaistavaksi	13.12.2023
VA	ISO/FDIS 15613	Specification and qualification of welding procedures for metallic materials — Qualification based on pre-production welding test	Loppuäänestys rekisteröity	4.8.2023
VA	ISO/FDIS 15614-11	Specification and qualification of welding procedures for metallic materials — Welding procedure test — Part 11: Electron and laser beam welding	Loppuäänestys rekisteröity	26.7.2023
VA	ISO/FDIS 15614-2	Specification and qualification of welding procedures for metallic materials — Welding procedure test — Part 2: Arc welding of aluminium and its alloys	Loppuäänestys rekisteröity	21.8.2023
	prEN 18007-1	Electromagnetic pulse welding - Part 1: Welding knowledge, terminology and vocabulary	Lausuntokierros päätyy	23.11.2023
	prEN 18007-2	Electromagnetic pulse welding - Part 2: Design of welded joints	Lausuntokierros päätyy	23.11.2023
	prEN 18007-3	Electromagnetic pulse welding - Part 3: Qualification of welding operators and weld setters	Lausuntokierros päätyy	23.11.2023
	prEN 18007-4	Electromagnetic pulse welding - Part 4: Specification and qualification of welding procedures	Lausuntokierros päätyy	23.11.2023
	prEN 18007-5	Electromagnetic pulse welding - Part 5: Quality and inspection requirements	Lausuntokierros päätyy	23.11.2023
VA	ISO/CD 13916	Welding — Measurement of preheating temperature, interpass temperature and preheat maintenance temperature	Työkohte hyväksytty lausuntovaiheeseen	13.11.2023
VA	ISO/CD 17662	Welding — Calibration, verification and validation of equipment used for welding, including ancillary activities	Työkohte hyväksytty lausuntovaiheeseen	25.8.2023
VA	ISO/CD TR 20173	Welding — Grouping systems for materials — American materials	Työkohte hyväksytty lausuntovaiheeseen	13.11.2023
VA	ISO/CD 14555	Welding — Arc stud welding of metallic materials	Komiteavaihe päätyy	31.5.2023
VA	ISO/AWI 13918	Welding — Studs and ceramic ferrules for arc stud welding	Työkohte rekisteröity	13.11.2023
VA	ISO/AWI 17660	Welding — Welding of reinforcing steel	Työkohte rekisteröity	7.11.2022
	EN ISO 15611:2003/prA11	Specification and qualification of welding procedures for metallic materials - Qualification based on previous welding experience	Työkohte hyväksytty	1.4.2021
	EN ISO 15612:2018/prA11	Specification and qualification of welding procedures for metallic materials - Qualification by adoption of a standard welding procedure specification	Työkohte hyväksytty	1.4.2021
	EN ISO 15614-1:2017/prA11	Specification and qualification of welding procedures for metallic materials - Welding procedure test - Part 1: Arc and gas welding of	Työkohte hyväksytty	1.4.2021

		steels and arc welding of nickel and nickel alloys		
	EN ISO 15614-7:2019/prA11	Specification and qualification of welding procedures for metallic materials - Welding procedure test - Part 7: Overlay welding	Työkohte hyväksyty	1.4.2021
	ISO/NP 25016	Welding — Grouping system for metallic materials	Työkohteäänestys alkaa	10.1.2024
	ISO/NP 25026	Welding and allied processes — Measurement of arc energies	Työkohteäänestys alkaa	10.1.2024
VA	ISO/PWI 17671-9	Welding — Recommendations for welding of metallic materials — Part 9: Welding of unalloyed and low alloyed steel castings	Alustava työkohte rekisteröity	13.11.2023
	ISO/PWI TS 8182	Welding and allied processes — Guidelines for the use of the welding parameters related to the heat input for qualification and specification of welding procedures	Alustava työkohte rekisteröity	13.11.2023
	ISO/PWI 15614-1	Specification and qualification of welding procedures for metallic materials — Welding procedure test — Part 1: Arc and gas welding of steels and arc welding of nickel and nickel alloys	Alustava työkohte rekisteröity	4.11.2022
	EN ISO 15613:2004/prA11	Specification and qualification of welding procedures for metallic materials – Qualification based on pre-production welding test	Työkohte keskeytetty	8.8.2023
	EN ISO 15614-11:2020/prA11	Specification and qualification of welding procedures for metallic materials – Welding procedure test – Part 11: Electron and laser beam welding	Työkohte keskeytetty	8.8.2023
	EN ISO 15614-2:2005/prA11	Specification and qualification of welding procedures for metallic materials – Welding procedure test – Part 2: Arc welding of aluminium and its alloys	Työkohte keskeytetty	8.8.2023
	EN ISO 15614-4:2005/prA11	Specification and qualification of welding procedures for metallic materials – Welding procedure test – Part 4: Finishing welding of aluminium castings	Työkohte keskeytetty	8.8.2023
	EN ISO 15614-5:2004/prA11	Specification and qualification of welding procedures for metallic materials – Welding procedure test – Part 5: Arc welding of titanium, zirconium and their alloys	Työkohte keskeytetty	8.8.2023
	EN ISO 15614-6:2006/prA11	Specification and qualification of welding procedures for metallic materials – Welding procedure test – Part 6: Arc and gas welding of copper and its alloys	Työkohte keskeytetty	8.8.2023
	EN ISO 15614-8:2016/prA11	Specification and qualification of welding procedures for metallic materials – Welding procedure test – Part 8: Welding of tubes to tube-plate joints	Työkohte keskeytetty	8.8.2023
VA	ISO/AWI TS 18166	Numerical welding simulation — Execution and documentation	Työkohte keskeytetty	13.11.2023

8. Hitsaushenkilöstön pätevänti

ISO/TC 44/SC 11 Qualification requirements for welding and allied processes personnel

Julkaisut:

FI	Tunnus	Otsikko
----	--------	---------

FI	ISO 13585:2021	Brazing — Qualification testing of brazers and brazing operators
FI	EN ISO 14731:2019	Welding coordination -- Tasks and responsibilities
FI	EN ISO 14732:2013	Welding personnel -- Qualification testing of welding operators and weld setters for mechanized and automatic welding of metallic materials
	EN ISO 15618-1:2016	Qualification testing of welders for underwater welding -- Part 1: Hyperbaric wet welding
	ISO 17779:2021	Brazing — Specification and qualification of brazing procedures for metallic materials
FI	EN ISO 9606-1:2017	Qualification testing of welders -- Fusion welding -- Part 1: Steels
FI	EN ISO 9606-2:2004	Qualification test of welders -- Fusion welding -- Part 2: Aluminium and aluminium alloys
FI	EN ISO 9606-3:1999	Approval testing of welders -- Fusion welding -- Part 3: Copper and copper alloys
FI	EN ISO 9606-4:1999	Approval testing of welders -- Fusion welding -- Part 4: Nickel and nickel alloys
FI	EN ISO 9606-5:2000	Approval testing of welders -- Fusion welding -- Part 5: Titanium and titanium alloys, zirconium and zirconium alloys
	ISO/TR 24471:2019	Brazing — Grouping systems for materials — American materials

Tekeillä:

VA	Tunnus	Otsikko	Vaihe	Vaiheen pvm
VA	ISO/CD 14732.2	Welding personnel — Qualification testing of welding operators and weld setters for mechanized and automatic welding of metallic materials	Komiteavaihe alkaa	13.1.2024
VA	ISO/CD 9606	Qualification test of welders — Fusion welding	Komiteavaihe päättyy	28.10.2023
	EN ISO 9606-2:2004/prA11	Qualification test of welders - Fusion welding - Part 2: Aluminium and aluminium alloys	Työkohde hyväksytty	1.4.2021
	EN ISO 9606-3:1999/prA11	Approval testing of welders - Fusion welding - Part 3: Copper and copper alloys	Työkohde hyväksytty	1.4.2021
	EN ISO 9606-4:1999/prA11	Approval testing of welders - Fusion welding - Part 4: Nickel and nickel alloys	Työkohde hyväksytty	1.4.2021
	EN ISO 9606-5:2000/prA11	Approval testing of welders - Fusion welding - Part 5: Titanium and titanium alloys, zirconium and zirconium alloys	Työkohde hyväksytty	1.4.2021
	EN ISO 14732:2013/prA11	Welding personnel — Qualification testing of welding operators and weld setters for mechanized and automatic welding of metallic materials	Työkohde keskeytetty	8.8.2023

9. Juotto

ISO/TC 44/SC 12 Soldering materials
 ISO/TC 44/SC 13 Brazing materials and processes

Julkaisut:

FI	Tunnus	Otsikko
	EN ISO 10564:1997	Soldering and brazing materials -- Methods for the sampling of soft solders for analysis
	EN ISO 12224-1:1998	Solder wire, solid and flux cored -- Specification and test methods -- Part 1: Classification and performance requirements
	EN ISO 12224-2:1999	Flux cored solder wire -- Specification and test methods -- Part 2: Determination of flux content
	EN ISO 12224-3:2003	Solder wire, solid and flux cored -- Specifications and test methods -- Part 3: Wetting balance test method for flux cored solder wire efficacy
FI	EN ISO 13585:2012	Brazing -- Qualification test of brazers and brazing operators

EN ISO 17672:2016	Brazing -- Filler metals
EN ISO 18279:2023	Brazing -- Imperfections in brazed joints
EN ISO 3677:2016	Filler metal for soft soldering, brazing and braze welding -- Designation
ISO 5179:2021	Investigation of brazeability with spreading and gap-filling test
ISO 5187:1985	Welding and allied processes -- Assemblies made with soft solders and brazing filler metals -- Mechanical test methods
EN ISO 9453:2020	Soft solder alloys -- Chemical compositions and forms
EN ISO 9454-1:2016	Soft soldering fluxes -- Classification and requirements -- Part 1: Classification, labelling and packaging
EN ISO 9454-2:2000	Soft soldering fluxes -- Classification and requirements -- Part 2: Performance requirements
EN ISO 9455-1:2022	Soft soldering fluxes -- Test methods -- Part 1: Determination of non-volatile matter, gravimetric method
EN ISO 9455-2:2020	Soft soldering fluxes — Classification and requirements — Part 2: Performance requirements
EN ISO 9455-3:2020	Soft soldering fluxes -- Test methods -- Part 3: Determination of acid value, potentiometric and visual titration methods
EN ISO 9455-5:2020	Soft soldering fluxes — Test methods — Part 5: Copper mirror test
EN ISO 9455-6:2022	Soft soldering fluxes -- Test methods -- Part 6: Determination and detection of halide (excluding fluoride) content
ISO 9455-8:1991	Soft soldering fluxes -- Test methods -- Part 8: Determination of zinc content
EN ISO 9455-9:2020	Soft soldering fluxes — Test methods — Part 9: Determination of ammonia content
EN ISO 9455-10:2012	Soft soldering fluxes -- Test methods -- Part 10: Flux efficacy test, solder spread method
EN ISO 9455-11:2017	Soft soldering fluxes -- Test methods -- Part 11: Solubility of flux residues
EN ISO 9455-13:2017	Soft soldering fluxes -- Test methods -- Part 13: Determination of flux spattering
EN ISO 9455-14:2017	Soft soldering fluxes -- Test methods -- Part 14: Assessment of tackiness of flux residues
EN ISO 9455-15:2017	Soft soldering fluxes -- Test methods -- Part 15: Copper corrosion test
EN ISO 9455-16:2019	Soft soldering fluxes -- Test methods -- Part 16: Flux efficacy test, wetting balance method
EN ISO 9455-17:2024	Soft soldering fluxes — Test methods — Part 17: Surface insulation resistance comb test and electrochemical migration test of flux residues
ISO 18496:2020	Brazing — Fluxes for brazing — Classification and technical delivery conditions
ISO 22688:2020	Brazing — Quality requirements for brazing of metallic materials

Tekeillä:

VA	Tunnus	Otsikko	Vaihe	Vaiheen pvm
VA	ISO/PRF 17672	Brazing — Filler metals	Loppuäänestys alkaa	16.2.2024
VA	ISO/PRF 3677	Filler metal for soldering and brazing — Designation	Loppuäänestys alkaa	19.2.2024
VA	ISO/DIS 12224-1	Solder wire, solid and flux cored — Specification and test methods — Part 1: Classification and performance requirements	Hyväksytty loppuäänestykseen	12.2.2024
VA	ISO/DIS 12224-2	Flux cored solder wire — Specification and test methods — Part 2: Determination of flux content	Hyväksytty loppuäänestykseen	12.2.2024
	ISO/DIS 9455-18	Soft soldering fluxes — Test methods — Part 18: Test methods of cleanliness of the soldered printed circuit assemblies before and/or after cleaning	Lausuntovaihe alkaa	28.8.2023
	ISO/CD 4061	Soldering — Quality requirements for soldering of metallic materials	Työkohte keskeytetty	12.2.2024

10. Ilmailusovellutukset

ISO/TC 44/SC 14 Welding and brazing in aerospace

Julkaisut:

FI	Tunnus	Otsikko
	ISO 11745:2022	Brazing for aerospace applications -- Qualification test for brazers and brazing operators -- Brazing of metallic components
	ISO 11745:2010/Amd 1:2015	Brazing for aerospace applications — Qualification test for brazers and brazing operators — Brazing of metallic components — Amendment 1
	ISO 16338:2017	Welding for aerospace applications -- Resistance spot and seam welding
	ISO 17533:2015	Welding for aerospace applications -- Welding information in design documents
	ISO 17927-1:2020	Welding for aerospace applications — Fusion welding of metallic components — Part 1: Process specification
	ISO 17927-2:2020	Welding for aerospace applications — Fusion welding of metallic components — Part 2: Acceptance criteria
	ISO 19828:2017	Welding for aerospace applications -- Visual inspection of welds
	ISO 24394:2023	Welding for aerospace applications — Qualification test for welders and welding operators — Fusion welding of metallic components

Tekeillä:

VA	Tunnus	Otsikko	Vaihe	Vaiheen pvm
	ISO/NP 22161-3.2	Aerospace series — Brazing and high-temperature brazed metallic components — Part 3: Furnace, torch and induction brazing using silver alloys	Työkohteäänestys alkaa	5.1.2024
	ISO/PWI 22161-1	Aerospace series — Brazing and high-temperature brazed metallic components — Technical specification	Alustava työkohte rekisteröity	31.3.2022
	ISO/PWI 22161-2	Aerospace series — Brazing and high-temperature brazed metallic components — Part 2: Furnace and dip brazing using aluminum alloys	Alustava työkohte rekisteröity	31.3.2022

11. Vedenalainen hitsaus

ISO/TC 44/SC 15 Underwater welding

Julkaisut:

FI	Tunnus	Otsikko
	EN ISO 15614-10:2005	Specification and qualification of welding procedures for metallic materials — Welding procedure test — Part 10: Hyperbaric dry welding
	EN ISO 15618-1:2016	Qualification testing of welders for underwater welding — Part 1: Hyperbaric wet welding
	EN ISO 15618-2:2001	Qualification testing of welders for underwater welding — Part 2: Diver-welders and welding operators for hyperbaric dry welding

Tekeillä:

VA	Tunnus	Otsikko	Vaihe	Vaiheen pvm
VA	ISO/CD 15614-9	Specification and qualification of welding procedures for metallic materials — Welding procedure test — Part 9: Underwater hyperbaric wet welding	Komiteavaihe alkaa	25.1.2024