Korea Laboratory Accreditation Scheme

CERTIFICATE OF ACCREDITATION

KEOJIN CO.,LTD.

Accreditation No. : KT656

Corporation Registration No. : 195511-0167358

Address of Laboratory : (Branch site)65, Techno valley-ro, Jillye-myeon, Gimhae-si, Gyeongsangnam-do, Republic of Korea

Date of Initial Accreditation : April 01, 2015

Validity of Accreditation : April 19, 2023 ~ April 18, 2027

Scope of Accreditation : Attached Annex

Date of issue : January 15, 2025

This testing laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to Joint ISO-ILAC-IAF Communiqué).

CHIN CHONGWOOK

Head

Korea Laboratory Accreditation Scheme

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01. Mechanical Testing

01.001 Metals and Related Products

Test method	Materials/ Products	Standard designation	Test range	Site	Field testing
ASME BPVC SEC I:2023	Metal and related products	2023 ASME Boiler & Pressure Vessel Code I RULE FOR CONSTRUCTION OF POWER BOILERS PW-53.7 TENSION TESTS PW-53.8 BEND TESTS	- Tension Test (PW-53.7) - Load: (5 ~ 1 000) kN Elongation / Reduction Area: (1 ~ 100%) - Bend Test (PW-53.8) - Load: (5 ~ 1 000) kN	BS	N
ASME BPVC SEC IX:2023	Metal and related products	2023 ASME Boiler & Pressure Vessel Code IX Qualification Standard for Welding, Brazing, and Fusing, Procedures; Welders; Brazers; and Welding, Brazing, and Fusing Operators Part QW WELDING ARTICLE I WELDING GENERAL REQUIREMENTS QW-182 FRACTURE TESTS QW-192 STUD-WELD TESTS QW-193 TUBE-TO TUBESHEET TESTS QW-196 RESISTANCE WELD TESTING	Fracture Test (QW-182) Load: (5 ~ 1 000) kN Tenstion Tets (QW-192) Load: (5 ~ 1 000) kN	BS	N
ASME BPVC SEC VIII Div.1:2023	Metal and related products	2023 ASME Boiler & Pressure Vessel Code VIII RULES FOR CONSTRUCTION OF PRESSURE VESSELS DIVISION 1 UG-84 CHARPY IMPACT TESTS A-3 SHEAR LOAD TESTS	Charpy Impact Test (UG-84) Absorbed Energy: Max. 500 J Temp. -196 ℃ ~ R.T. Lateral Expansion: (0.01 ~ 5) mm Shear area: Max. 100 % A-3 Shear Load Test Test Load: (5 ~ 950 kN)	BS	N

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Test method	Materials/ Products	Standard designation	Test range	Site	Field testing
ASME BPVC SEC.II-A SA370:2023	Metal and related products	2023 ASME Boiler & Pressure Vessel Code II Materials Part A Ferrous Material Specification SA370 TEST METHODS AND DEFINITIONS FOR MECHANICAL TESTING OF STEEL PRODUCTS	- Tension Test - Load: (5 ~ 1 000) kN Elongation / Reduction Area: (1 ~ 100) % - Bend Test - Load: (5 ~ 1 000) kN - Hardness Test - Brinell(Load): (4 903 ~ 29 420) N Rockwell(Scale): B, C - Impact Test - Absorbed Energy: Max. 500 J Temperature: -196 ℃ ~ R.T. Lateral Expansion: (0.01 ~ 5) mm - Flattening Test/Flaring Test - Load: (5 ~ 1 000) kN	BS	N
ASME BPVC SEC.IX:2023	Metal and related products	2023 ASME Boiler & Pressure Vessel Code IX Qualification Standard for Welding, Brazing, and Fusing, Procedures ; Welders ; Brazers ; and Welding, Brazing, and Fusing Operators - PART QW WELDING ARTICLE 1 WELDING GENERAL REQUIREMENTS QW-150 TENSION TEST QW-160 GUIDED-BEND TEST QW-170 NOTCH-TOUGHNESS TEST QW-470 ETCHING - PROCESS AND REAGENTS QW-472 FOR FERROUS METALS QW-473 FOR NONFERROUS METALS	- Tension Test - Load: (5 ~ 1 000) kN Elogation/Reduction Area: (1 ~ 100) % - Bend Test - Load: (5 ~ 1 000) kN - Impact Test - Absorbed Energy: Max. 500 J Temperature: -196 ℃ ~ R.T. Lateral Expansion: (0.01 ~ 5) mm Shear area: Max. 100 %	BS	N
ASTM A1016/A1016M-24a	Metal and related products	Standard Specification for General Requirements for Ferritic Alloy Steel, Austenitic Alloy Steel, and Stainless Steel Tubes	Load: (5 ~ 950) kN	BS	N
ASTM A247-24	Metal and related products	Standard Test Method for Evaluating the Microstructure of Graphite in Iron Castings	-	BS	N

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Test method	Materials/ Products	Standard designation	Test range	Site	Field testing
ASTM A255-20a	Metal and related products	Standard Test Methods for Determining Hardenability of Steel	-	BS	N
ASTM A262-15(2021)	Metal and related products	Standard Practices for Detecting Susceptibility to Intergranular Attack in Austenitic Stainless Steels PRACTICE A - OXALIC ACID ETCH TEST FOR CLASSIFICATION OF ETCH STRUCTURES OF AUSTENITIC STAINLESS STEELS PRACTICE B—FERRIC SULFATE-SULFURIC ACID TEST FOR DETECTING SUSCEPTIBILITY TO INTERGRANULAR ATTACK IN AUSTENITIC STAINLESS STEELS PRACTICE C—NITRIC ACID TEST FOR DETECTING SUSCEPTIBILITY TO INTERGRANULAR ATTACK IN AUSTENITIC STAINLESS STEELS PRACTICE E - COPPER-COPPER SULFATE-16 % SULFURIC ACID TEST FOR DETECTING SUSCEPTIBILITY TO INTERGRANULAR ATTACK IN AUSTENITIC STAINLESS STEELS	-	BS	N

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Test method	Materials/ Products	Standard designation	Test range	Site	Field testing
ASTM A370-24a	Metal and related products	Standard tests Methods and Definitions for Mechanical Testing of Steel Products - TENSION TEST - BEND TEST - HARDENSS TEST 17. Brinell Test 18. Rockwell Test(Scale: B, C) - CHARPY IMPACT TESTING A2.5.1.1 Flattening Test A2.5.1.4 Flange Test	- Tension Test - Load: (5 ~ 1 000) kN Elongation / Reduction Area (1 ~ 100) % - Bend Test - Load: (5 ~ 1 000) kN - Hardness Test - Brinell(Load): (4 903 ~ 29 420) N Rockwell(Scale): B, C - Impact Test - Absorbed Energy: Max. 500 J Temperature: -196 ℃ ~ R.T. Lateral Expansion: (0.01 ~ 5) mm Percent of shear fracture : (0 ~ 100) % - Flattening Test/Flaring Test - Load: (5 ~ 1 000) kN	BS	N
ASTM A530/A530M-18	Metal and related products	Standard Specification for General Requirements for Specialized Carbon and Alloy Steel Pipe	Load: (5 ~ 950) kN	BS	N
ASTM A923-23	Metal and related products	Standard Test Methods for Detecting Detrimental Intermetallic Phase in Duplex Austenitic/Ferritic Stainless Steels TEST METHOD A SODIUM — HYDROXIDE ETCH TEST FOR CLASSIFICATION OF ETCH STRUCTURES OF DUPLEX STAINLESS STEELS TEST METHOD B CHARPY IMPACT TEST FOR CLASSIFICATION OF STRUCTURES OF DUPLEX STAINLESS STEELS TEST METHOD C—FERRIC CHLORIDE CORROSION TEST FOR CLASSIFICATION OF STRUCTURES OF DUPLEX STAINLESS STEELS	Test Method B Charpy Impact Test Absorbed Energy: Max. 500 J Temperature: -196 ℃ ~ R.T.	BS	N

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Test method	Materials/ Products	Standard designation	Test range	Site	Field testing
ASTM A999/A999M-23	Metal and related products	Standard Specification for General Requirements for Alloy and Stainless Steel Pipe	Load: (5 ~ 950) kN	BS	N
ASTM E10-23	Metal and related products	Standard Test Method for Brinell Hardness of Metallic Materials	Load: (4 903 ~ 29 420) N	BS	N
ASTM E112-24	Metal and related products	Standard Test Methods for Determining Average Grain Size	-	BS	N
ASTM E1181-02(2023)	Metal and related products	Standard Test Methods for Characterizing Duplex Grain Sizes	-	BS	N
ASTM E18-24	Metal and related products	Standard Test Method for Rockwell Hardness of Metallic Materials (Scale: B, C)	Scale: B (30 ~100) HRB Scale: C (20 ~ 70) HRC	BS	N
ASTM E190-21	Metal and related products	Standard Test Method for Guided Bend Test for Ductility of Welds	Load: (5 ~ 1 000) kN	BS	N
ASTM E21-20	Metal and related products	Standard Test Methods for Elevated Temperature Tension Tests of Metallic Materials	Load: (5 ~ 200) kN Elongation/Reduction of Area: (1 ~ 100) % Elongation at Fracture: (1 ~ 50) % Temperature: R.T. ~ 1 000 °C	BS	N
ASTM E23-24	Metal and related products	Standard Test Methods for Notched Bar Impact Testing of Metallic Materials	- Impact Test - Absorbed Energy: Max. 500 J Temperature: -196 ℃ ~ R.T. Lateral Expansion: (0.01 ~ 5) mm Percent of shear fracture: (0 ~ 100) %	BS	N
ASTM E290-22	Metal and related products	Standard Test Methods for Bend Testing of Material for Ductility	Load: (5 ~ 1 000) kN	BS	N
ASTM E340-23	Metal and related products	Standard Practice for Macroetching Metals and Alloys	Magnification: (~ x40)	BS	N
ASTM E381-22	Metal and related products	Standard Method of Macroetch Testing Steel Bars, Billets, Blooms and Forgings	Magnification: (~ x40)	BS	N
ASTM E384-22	Metal and related products	Standard Test Method for Microindentation Hardness of Materials	(0.098 ~ 9.8) N	BS	N

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Test method	Materials/ Products	Standard designation	Test range	Site	Field testing
ASTM E407-23	Metal and related products	Standard Practice for Microetching Metals and Alloys	-	BS	N
ASTM E45-18a(2023)	Metal and related products	Standard Test Method for Determining the Inclusion Content of Steel 12. Method A (Worst Fields) 13. Method B (Length) 14. Method C (Oxides and Silicates) 15. Method D (Low Inclusion Content)	-	BS	N
ASTM E562-19e1	Metal and related products	Standard Test Method for Determining Volume Fraction by Systematic Manual Point Count	-	BS	N
ASTM E8/E8M-24	Metal and related products	Standard Test Methods for Tension Testing of Metallic Materials	Load: (5 ~ 1 000) kN Elongation / Reduction of Area: (1 ~ 100) %	BS	N
ASTM E92-23	Metal and related products	Standard Test Methods for Vickers Hardness and Knoop Hardness of Metallic Materials	HV 5, HV 10	BS	N
ASTM F2328M-17(2022)	Metal and related products	Standard Test Method for Determining Decarburization and Carburization in Hardened and Tempered Threaded Steel Bolts, Screws, Studs, and Nuts (Metric)	-	BS	N
ASTM G28-24	Metal and related products	Standard Test Methods for Detecting Susceptibility to Intergranular Corrosion in Wrought, Nickel-Rich, Chromium-Bearing Alloys Method A-Ferric Sulfate-Sulfuric Acid Test	-	BS	N
ASTM G48-11(2020)e1	Metal and related products	Standard Test Methods for Pitting and Crevice Corrosion Resistance of Stainless Steels and Related Alloys by Use of Ferric Chloride Solution Method A Ferric Chloride Pitting Test	-	BS	N

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Test method	Materials/ Products	Standard designation	Test range	Site	Field testing
AWS B4.0:2016	Metal and related products	AWS B4.0: 2016 Standard Methods for Mechanical Testing of Welds 4. Tension Tests 5. Shear Tests 6. Bend Tests 7. Fracture and Notch Toughness Tests 7.7.1. (2) Charpy V-notch 8. Hardness Tests 9. Break Tests	4. Tension Tests Test Load: (5 ~ 950) kN Elongration/Reduction of Area: (1 ~ 100) % Elongration at Fracture: (1 ~ 50) % 5. Shear Tests Load: (5 ~ 950) kN 6. Bend Tests Load: (5 ~ 950) kN 7. Fracture Toughness Tests 7.7.1. (2) Charpy V-notch Absorb Energy: Max 434 J, Temperature: R.T. -196 ~ ℃ Lateral Expansion: (0.01 ~ 5) mm, % Shear area: Max. 100 % 8. Hardness Tests Brinell: Test Load (9 800 ~ 29 420) N, Rockwell: Scale B, C Vickers: HV 10 Microhardness: HV 0.01 ~ HV 0.5	BS	N
AWS D1.1/D1.1M:2020	Metal and related products	AWS D1.1/D1.1M: 2020 Structural Welding Code - Steel 6.10.3 Mechanical Testing, Bend Tests, Tension Test 6.10.4 Macroetch test 6.27 CVN Tests	[6.10.3 Mechanical Testing] - Bend test: (5 ~ 950) kN - Tension Test - Load: (5 ~ 950) kN Elongation/Reduction of Area: (1 ~ 100) % [6.10.4 Macroetch Test] 6.27 [CVN Testing Absorbed Energy: Max. 434 J Temperature: -196 ℃ ~ R.T. Lateral Expansion: (0.01 ~ 5) mm, % Shear area: Max. 100 %	BS	N
ISO 148-1:2016	Metal and related products	Metallic materials - Charpy pendulum impact test - Part 1: test method	Absorbed Energy: Max 500 J Temperature: -196 ℃ ~ R.T. Lateral Expansion: (0.01 ~ 5) mm	BS	N

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Test method	Materials/ Products	Standard designation	Test range	Site	Field testing
ISO 17639:2022	Metal and related products	Destructive tests on welds in matallic materials - Macroscopic and microscopic examination of welds	Magnification: (~ x40)	BS	N
ISO 17781:2017	Metal and related products	Petroleum, petrochemical and natural gas industriesTest methods for quality control of microstructure of ferritic/austenitic(duplex) stainless steels 5.2 Microstructural examination 5.3 Ferrite content measurement 5.4 Charpy V-notch impact toughness test 5.5 Corrosion test	Absorbed Energy: Max. 500 J Temperature: -196 ℃ ~ R.T. Lateral Expansion: (0.01 ~ 5) mm Percent of shear fracture : (0 ~ 100) %	BS	N
ISO 3651-2:1998	Metal and related products	Determination of resistance to intergranular corrosion of stainless steels — Part 2: Ferritic,austenitic and ferritic-austenitic (duplex) stainless steels — Corrosion test in media containing sulfuric acid	-	BS	N
ISO 4136:2022	Metal and related products	Destructive tests on welds in metallic materials - Transverse tensile test	Load: (5 ~ 1 000) kN	BS	N
ISO 4967:2013	Metal and related products	Steel - Determination of content of non-metallic inclusions - Micrographic method using standard diagrams	-	BS	N
ISO 5173:2023	Metal and related products	Destructive Tests on welds in metallic materials - Bend tests	Load: (5 ~ 1 000) kN	BS	N
ISO 5178:2019-05	Metal and related products	Destructive tests on welds in metallic materials - Longitudinal tensile test on weld metal in fusion welded joints	Load: (5 ~ 1 000) kN Elongation / Reduction of Area: (1 ~ 100) %	BS	N
ISO 643:2024	Metal and related products	Steels — Micrographic determination of the apparent grain size	Magnification: (x 50, x100, x200, x500) Etching method: Nital	BS	N

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Test method	Materials/ Products	Standard designation	Test range	Site	Field testing
ISO 6506-1:2014	Metal and related products	Metallic materials - brinell hardness test - Part 1: test method	Load: (4 903 ~ 29 420) kN	BS	N
ISO 6507-1:2023	Metal and related products	Metallic materials - Vickers hardness test - Part 1: test method	HV 5, HV 10	BS	N
ISO 6508-1:2023	Metal and related products	Metallic materials - Rockwel hardness test - Part 1: test method	Scale: B, C	BS	N
ISO 6892-1:2019	Metal and related products	Metallic materials - Tensile testing - Part 1: Method of test at room temperature	Load: (5 ~ 1 000) kN	BS	N
ISO 6892-2:2018	Metal and related products	Metallic materials — Tensile testing — Part 2: Method of test at elevated temperature	Load: (5 ~ 200) kN Elongation/Reduction of Area: (1 ~ 100) % Elongation at Fracture: (1 ~ 50) % Temperature: R.T. ~ 1 000 °C	BS	N
ISO 7438:2020	Metal and related products	Metallic materials - Bend test	Load: (5 ~ 1 000) kN	BS	N
ISO 8492:2013(E)	Metal and related products	Metallic materials - Tube - Flattening test	Max. (5 ~ 950) kN	BS	N
ISO 8493:1998(E)	Metal and related products	Metallic materials - Tube - Drift - expanding test	Max. (5 ~ 950) kN	BS	N
ISO 8494:2013(E)	Metal and related products	Metallic materials — Tube — Flanging test	Load: (5 ~ 950) kN	BS	N
ISO 9015-1:2001	Metal and related products	Destructive tests on welds in metallic materials — Hardness testing — Part 1 : Hardness test on arc welded joints	HV 5, HV 10	BS	N
ISO 9016:2022	Metal and related products	Destructive tests on welds in metallic materials - Impact tests - Test specimen location, notch orientation and examination	-Impact Test- Absorbed Energy: Max. 500 J Temperature: -196 ℃ ~ R.T. Lateral Expansion: (0.01 ~ 5) mm Shear area: Max. 100 %	BS	N

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Test method	Materials/ Products	Standard designation	Test range	Site	Field testing
ISO 9017:2017	Metal and related products	Destructive tests on welds in metallic materials — Fracture test	Load: (5 ~ 950) kN	BS	N
ISO 945-1:2019	Metal and related products	Microstructure of cast irons - Part 1: Graphite classification by visual analysis	-	BS	N
JIS G 0551:2020	Metal and related products	Steels-Micrographic determination of the apparent grain size	-	BS	N
JIS G 0553:2019	Metal and related products	Steel - Macroscopic examination by etching	-	BS	N
JIS G 0555:2023	Metal and related products	Microscopic testing method for the non-metallic inclusions in steel	-	BS	N
JIS G 0557:2019	Metal and related products	Methods of measuring case depth hardened by carburizing treatment for steel	(0 ~ 25) mm Scale: 0.001 mm	BS	N
JIS G 0567:2020	Metal and related products	Method of elevated temperature tensile test for steels and heat-resisting alloys	Load: (5 ~ 200) kN Elongation/Reduction of Area: (1 ~ 100) % Elongation at Fracture: (1 ~ 50) % Temperature: R.T. ~ 1 000 °C	BS	N
JIS G 3454:2017	Metal and related products	Carbon steel pipes for pressure service 6.2 Flattening Test	Load: (5 ~ 1 000) kN	BS	N
JIS G 3459:2021	Metal and related products	Stainless steel pipes 13.2.4 Flattening Test	Load: (5 ~ 1 000) kN	BS	N
JIS G 5502:2022	Metal and related products	Spheroidal graphite iron castings 12.6 Test for Determination of Spheroidal Graphite rate	-	BS	N
JIS Z 2241:2022	Metal and related products	Metallic materials - Tensile testing - Method of test at room temperature	Load: (5 ~ 1 000) kN Elogation/Reduction Area: (1 ~ 100)%	BS	N

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Test method	Materials/ Products	Standard designation	Test range	Site	Field testing
JIS Z 2242:2023	Metal and related products	Method for charpy pendulum impact test of metallic materials	Absorbed Energy: Max. 500 J Temperature: -196 ℃ ~ R.T. Lateral Expansion: (0.01 ~ 5) mm Percent of shear area: (0 ~ 100) %	BS	N
JIS Z 2243-1:2018	Metal and related products	Brinell hardness test - Part 1: Test Method	Load: (4 903 ~ 29 420) N	BS	N
JIS Z 2244-1:2024	Metal and related products	Vickers hardness test - Part 1: Test Method (HV 5, HV 10)	HV 5, HV 10	BS	N
JIS Z 2245:2021	Metal and related products	Rockwell hardness test - Test Method (Scale: B, C)	Scale: B, C	BS	N
JIS Z 2248:2022	Metal and related products	Metallic materials-Bend test	-	BS	N
JIS Z 3121:2013	Metal and related products	Methods of tensile test for butt welded joints	Load: (5 ~ 1 000) kN	BS	N
JIS Z 3122:2013	Metal and related products	Methods of bend test for butt welded joint	Load: (5 ~ 1 001) kN	BS	N
JIS Z 3128:2017	Metal and related products	Sampling method of impact test specimen from welded Joint	Max. 500 J	BS	N
KS B 0802:2003	Metal and related products	METHOD OF TENSILE TEST FOR METALLIC MATERIALS	Load: (5 ~ 1 000) kN Elongation / Reduction of Area: (1 ~ 100) %	BS	N
KS B 0804:2001	Metal and related products	Metallic materials - Bend test	Load: (5 ~ 1 000) kN	BS	N
KS B 0805:2000	Metal and related products	Metallic materials - Test method of brinell hardness	Load: (4 903 ~ 29 420) N	BS	N
KS B 0806:2000	Metal and related products	Metallic materials - Test method of rockwell hardness	Scale: B (30 ~ 100) HRB Scale: C (20 ~ 70) HRC	BS	N
KS B 0810:2003	Metal and related products	Method of impact test for metallic materials	Absorbed Energy: Max. 500 J Test Temperature: -196 ℃ ~ R.T. Lateral Expansion: (0.01 ~ 5) mm	BS	N

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Test method	Materials/ Products	Standard designation	Test range	Site	Field testing
KS B 0811:2003	Metal and related products	Metallic materials - Vickers hardness test - Part 1 : Test method	HV 5, HV 10	BS	N
KS B 0821:2022	Metal and related products	Method of tension and impact tests deposited metal	- Tension Test - Test Load: (5 ~ 1 000) kN Elongation / Reduction of area (1 ~ 100) % - Impact Test - Absorbed Energy: Max. 500 J Test Temperature :(R.T ~ -196) ℃ Lateral Expansion: (0.01 ~ 5) mm Shear area: Max. 100 %	BS	N
KS B ISO 4136:2012	Metal and related products	Destructive tests on welds in metallic materials — Transverse tensile test	Load: (5 ~ 1 000) kN	BS	N
KS B ISO 5173:2009	Metal and related products	Destructive tests on welds in metallic materials - Bend tests	Load: (5 ~ 1 000) kN	BS	N
KS B ISO 5178:2019	Metal and related products	Destructive tests on welds in metallic materials - Longitudinal tensile test on weld metal in fusion welded joints	Test Load: (5 ~ 1 000) kN Elongation / Reduction of area: (1 ~ 100) %	BS	N
KS B ISO 8492:1998	Metal and related products	금속 재료 - 관 - 편평 시험	Load: (5 ~ 950) kN	BS	N
KS B ISO 8493:1998	Metal and related products	금속 재료 - 관 - 압입 확관 시험	Load: (5 ~ 950) kN	BS	N
KS B ISO8494:1998	Metal and related products	금속 재료 - 관 - 플랜지 성형 시험	Load: (5 ~ 950) kN	BS	N
KS B ISO 9016:2012	Metal and related products	Destructive tests on welds in metallic materials — Impact tests — Test specimen location, notch orientation and examination	-Impact Test- Absorbed Energy: Max. 500 J Temperature: -196 ℃ ~ R.T. Lateral Expansion: (0.01 ~ 5) mm Shear area: Max. 100 %	BS	N

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Test method	Materials/ Products	Standard designation	Test range	Site	Field testing
KS D 0026:2002	Metal and related products	Metallic material - Tensile testing at elevated temperature	Load: (5 ~ 200) kN Elongation/Reduction of Area: (1 ~ 100) % Elongation at Fracture: (1 ~ 50) % Temperature: R.T. ~ 1 000 °C	BS	N
KS D 0027:2002	Metal and related products	Method of measuring case depth for steel hardened by flame or induction hardening process	(0 ~ 25) mm resolution: 0.001 mm	BS	N
KS D 0204:2007	Metal and related products	Steel - Determination of content of nonmetallic inclusions - Micrographic method using standard diagrams	-	BS	N
KS D 0205:2002	Metal and related products	Steel - Micrographic determination of the ferritic or austenitic grain size	magnification: (x 50, x 100, x 200, x 500) etching method: Nital	BS	N
KS D 0206:2002	Metal and related products	Steel - Hardenability test by end quenching(Jominy test)	-	BS	N
KS D 0210:1992	Metal and related products	MacroStructure Detecting Method for Steel	Magnification: (~ x40)	BS	N
KS D 0215:2000	Metal and related products	Steel-Determination and verification of the effective depth of carburized and hardened cases	(0 ~ 25) mm resolution: 0.001 mm	BS	N
KS D 0216:2001	Metal and related products	Method of measuring decarburized depth for steel 6.1 measure method for microscope 6.2 measure method for hardness test	(0 ~ 25) mm resolution: 0.001 mm	BS	N
KS D 0219:2020	Metal and related products	Method of ferric chloride tests for stainless steels 6.1 Method of ferric chloride tests - method(A)	-	BS	N
KS D 0225:2005	Metal and related products	Method of 10 percent oxalic etch, test for stainless steels	-	BS	N

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Test method	Materials/ Products	Standard designation	Test range	Site	Field testing
KS D 0274:1993	Metal and related products	Method of measuring nitrided case depth for iron and steel	(0 ~ 25) mm resolution: 0.001 mm	BS	N

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02. Chemical Testing

02.001 Steel

Test method	Materials/ Products	Standard designation	Test range	Site	Field testing
ASTM A751-21	Steel	Standard Test Methods and Practices for Chemical Analysis of Steel Products	Carbon(C) : (0.003 ~ 1.08) % Silicon(Si) : (0.002 ~ 1.513) % Sulfur(S) : (0.001 1 ~ 0.315) % Phosphorus(P) : (0.000 7 ~ 0.140) % Manganese(Mn) : (0.003 ~ 2.40) % Nickel(Ni) : (0.015 ~ 29.6) % Chromium(Cr) : (0.023 6 ~ 27.44) % Molybdenum(Mo) : (0.001 2 ~ 4.99) % Copper(Cu) : (0.007 ~ 0.42) % Aluminium(Al) : (0.001 ~ 1.648) % Vanadium(V) : (0.001 ~ 0.236) %	BS	N
ASTM E1019-24	Steel	Standard Test Methods for Determination of Carbon, Sulfur, Nitrogen, and Oxygen in Steel, Iron, Nickel, and Cobalt Alloys by Various Combustion and Inert Gas Fusion Techniques	Nitrogen(N) : (0.001 ~ 0.07)%	BS	N
ASTM E 1086-22	Steel	Standard Test Method for Analysis of Austenitic Steel by Spark Atomic Emission Spectrometry	Carbon(C) : (0.009 0 ~ 0.161) % Silicon(Si) : (0.307 ~ 0.90) % Sulfur(S) : (0.003 ~ 0.028 8) % Phosphorus(P) : (0.004 ~ 0.140) % Manganese(Mn) : (0.61 ~ 1.92) % Nickel(Ni) : (7.5 ~ 11.99) % Chromium(Cr) : (17.0 ~ 22.47) % Molybdenum(Mo) : (0.01 ~ 3.0) % Copper(Cu) : (0.012 1 ~ 0.30) %	BS	N

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Test method	Materials/ Products	Standard designation	Test range	Site	Field testing
ASTM E415-21	Steel	Standard Test Method for Analysis of Carbon and Low-Alloy Steel by Spark Atomic Emission Spectrometry	Carbon(C) : (0.02 ~ 1.08) % Silicon(Si) : (0.02 ~ 1.5) % Sulfur(S) : (0.002 ~ 0.050) % Phosphorus(P) : (0.006 ~ 0.085) % Manganese(Mn) : (0.03 ~ 2.0) % Nickel(Ni) : (0.016 ~ 5.0) % Chromium(Cr) : (0.026 ~ 8.14) % Molybdenum(Mo) : (0.003 7 ~ 0.6) % Copper(Cu) : (0.008 ~ 0.308) % Aluminium(Al) : (0.006 ~ 0.093) % Vanadium(V) : (0.003 ~ 0.3) %	BS	N
JIS G 1253:2002	Steel	Iron and steel - Method for spark discharge atomic emission spectrometric analysis	Carbon(C) : (0.003 ~ 1.08) % Silicon(Si) : (0.002 ~ 1.513) % Sulfur(S) : (0.001 1 ~ 0.315) % Phosphorus(P) : (0.000 7 ~ 0.140) % Manganese(Mn) : (0.003 ~ 2.40) % Nickel(Ni) : (0.015 ~ 29.6) % Chromium(Cr) : (0.023 6 ~ 27.44) % Molybdenum(Mo) : (0.001 2 ~ 4.99) % Copper(Cu) : (0.007 ~ 0.42) % Aluminium(Al) : (0.001 ~ 1.648) % Vanadium(V) : (0.001 ~ 0.236) %	BS	N

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Test method	Materials/ Products	Standard designation	Test range	Site	Field testing
KS D 1652:2022	Steel	Iron and steel - Method for spark discharge atomic emission spectrometric analysis	Carbon(C) : (0.003 ~ 1.08) % Silicon(Si) : (0.002 ~ 1.513) % Sulfur(S) : (0.001 1 ~ 0.315) % Phosphorus(P) : (0.000 7 ~ 0.140) % Manganese(Mn) : (0.003 ~ 2.40) % Nickel(Ni) : (0.015 ~ 29.6) % Chromium(Cr) : (0.023 6 ~ 27.44) % Molybdenum(Mo) : (0.001 2 ~ 4.99) % Copper(Cu) : (0.007 ~ 0.42) % Aluminium(Al) : (0.001 ~ 1.648) % Vanadium(V) : (0.001 ~ 0.236) %	BS	N

End.