

Name: Testing Center of Metal Research Institute, Chinese Academy of Sciences

Address: No.8 Shiji Road Hunnan District, Shenyang, Liaoning, China

Registration No. CNAS L4975

Accreditation Criteria: ISO/IEC 17025:2017 and relevant requirements of CNAS

Effective Date: 2024-06-26 Expiry Date: 2029-05-25

SCHEDULE 3 ACCREDITED TESTING SCOPE

| №                            | Test Object                  | Item/Parameter |                    | Standard or Method  | Note                           | Effective Date |
|------------------------------|------------------------------|----------------|--------------------|---|--------------------------------|----------------|
|                              |                              | №              | Item/ Parameter    |   |                                |                |
| Metal materials and products |                              |                |                    |   |                                |                |
| 1                            | Metal materials and products | 1              | Ultrasonic testing | Steel forgings - Method for ultrasonic testing GB/T 6402-2008                                 |                                | 2023-06-20     |
|                              |                              |                |                    | Steel castings-Ultrasonic testing-Part 1:Steel castings for general purposes GB/T 7233.1-2023 |                                | 2024-02-22     |
|                              |                              |                |                    | Method for ultrasonic testing of forged and rolled steel bars GB/T 4162-2022                  |                                | 2023-06-20     |
|                              |                              |                |                    | General specifications of forged steel work rolls for cold rolling GB/T 13314-2008            | Accrideted only for appendix A | 2023-06-20     |
|                              |                              |                |                    | Cast steel rolls GB/T 1503-2008   | Accrideted only for appendix B | 2023-06-20     |
|                              |                              |                |                    | Ultrasonic testing for steel forgings JB/T 8467-2014  |                                | 2023-06-20     |
|                              |                              |                |                    | Non-destructive testing - Ultrasonic thickness measurement GB/T 11344-2021                    |                                | 2023-06-20     |



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|   |             | №              | Item/ Parameter      |  |                                 |                |
|   |             |                |                      | Nondestructive testing of pressure equipment—Part 3 :<br>Ultrasonic testing NB/T 47013.3-2023  | Special equipment is not tested | 2024-06-26     |
|   |             |                |                      | Ultrasonic inspection of wrought metal HB 20159-2014   |                                 | 2023-06-20     |
|   |             |                |                      | Ultrasonic inspection of wrought metal GJB 1580A-2019  |                                 | 2023-06-20     |
|   |             |                |                      | Ultrasonic testing for small diameter metal bars HB/Z 33-2021  |                                 | 2024-02-22     |
|   |             |                |                      | Immersion ultrasonic inspection of aero-engine disks HB/Z 34-2021  |                                 | 2024-02-22     |
|   |             |                |                      | Method of ultrasonic inspection for wrought titanium and titanium alloy products GB/T 5193-2020  |                                 | 2023-06-20     |
|   |             |                |                      | Non-destructive testing of welds-Ultrasonic testing-Techniques,testing Levels,and Assessment GB/T 11345-2023   |                                 | 2024-05-21     |
|   |             |                |                      | Non-destructive testing of welds-Ultrasonic testing-Characterization of discontinuities in welds GB/T 29711-2023   |                                 | 2024-05-21     |
|   |             |                |                      | Non-destructive testing of welds-Ultrasonic testing-Acceptance levels GB/T 29712-2023  |                                 | 2024-05-21     |
|   |             |                |                      | Automated full peripheral ultrasonic testing of seamless and welded (except submerged arc-welded) steel tubes for the detection of longitudinal and/or transverse imperfections GB/T 5777-2019 |                                 | 2023-06-20     |
|   |             |                |                      | Method of ultrasonic inspection for titanium and titanium alloy tubes GB/T 12969.1-2007  |                                 | 2023-06-20     |
|   |             | 2              | Radiographic testing | Melt weld technical conditions for structure and stainless steel QJ 1842A-2011   | Accredited only for section 5~7 | 2023-06-20     |
|   |             |                |                      | Melt weld technical conditions for titanium and titanium alloy QJ 1666A-2011   | Accredited only for section 5~7 | 2023-06-20     |



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|   |             | №              | Item/ Parameter |  |      |                |
|   |             |                |                 | Non-destructive testing — Test methods for radiographic testing of circumferential fusion-welded butt joints in metallic pipes and tubes GB/T 12605-2008 |      | 2023-06-20     |
|   |             |                |                 | Method of X-ray testing for melt butt joints of stainless thin wall plate QJ 1175A-96  |      | 2023-06-20     |
|   |             |                |                 | Method for X-ray radiographic inspection of fusion welded butt joints for aluminum and aluminum alloy GJB 1486A-2021                                     |      | 2023-06-20     |
|   |             |                |                 | Castings -Radiographic testing GB/T 5677-2018  |      | 2023-06-20     |
|   |             |                |                 | Standard Practice for Radiographic Examination ASTM E1742/E1742M-2018  |      | 2023-06-20     |
|   |             |                |                 | Standard Reference Radiographs of Investment Steel HB 6573-1992  |      | 2023-06-20     |
|   |             |                |                 | Castings for Aerospace Applications ASTM E192-20   |      | 2023-06-20     |
|   |             |                |                 | Reference Radiographs for Titanium Castings ASTM E1320-20  |      | 2023-06-20     |
|   |             |                |                 | Reference Radiographs for Examnation of Alumnum Fusion Welds ASTM E1648-20   |      | 2023-06-20     |
|   |             |                |                 | Reference Radiographs for Steel Castings ASTM E446-20  |      | 2023-06-20     |
|   |             |                |                 | Standard Reference Radiographs for Heavy-Walled ASTM E186 - 20   |      | 2023-06-20     |
|   |             |                |                 | Standard Reference Radiographs of aluminium magnesium alloy casting HB 6578-1992   |      | 2023-06-20     |
|   |             |                |                 | Long pole holes grade standard of aluminium alloy casting for X-ray radiographic testing HB 5395-1988  |      | 2023-06-20     |
|   |             |                |                 | Sponge shrinkage grade standard of aluminium alloy casting for X-ray radiographic testing HB 5396-1988   |      | 2023-06-20     |
|   |             |                |                 | Dendritic shrinkage grade standard of aluminium alloy casting  |      | 2023-06-20     |

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|   |             |                |                      | for X-ray radiographic testing HB 5397-1988   |                                 |                |
|   |             |                |                      | Radiographic testing for aluminum alloy castings-Defect levels GB/T 11346-2018  |                                 | 2023-06-20     |
|   |             |                |                      | X-ray radiographic testing HB 20160-2014  |                                 | 2023-06-20     |
|   |             |                |                      | Radiography testing GJB 1187A-2019  |                                 | 2023-06-20     |
|   |             |                |                      | Nondestructive testing of pressure equipments. Part 2: Radiographic testing (XG1-2018) NB/T 47013.2-2015 (XG1-2018)                           | Special equipment is not tested | 2023-06-20     |
|   |             |                |                      | Non-destructive of welds-Radiographic testing-Part 1: X-and gamma-ray techniques with film GB/T 3323.1-2019                                   |                                 | 2023-06-20     |
|   |             | 3              | Penetrate testing    | Penetrate testing HB/Z 61-1998  |                                 | 2023-06-20     |
|   |             |                |                      | Liquid penetrant inspection GJB 2367A-2005  |                                 | 2023-06-20     |
|   |             |                |                      | Nondestructive testing of pressure equipments. Part 5: Penetrate testing NB/T 47013.5-2015  | Special equipment is not tested | 2023-06-20     |
|   |             |                |                      | Non-destructive Testing - Test Method for Penetrant Testing JB/T 9218-2015  |                                 | 2023-06-20     |
|   |             |                |                      | Standard Practice for Liquid Penetrant Testing ASTM E1417/E1417M-21 <sup>e1</sup>   |                                 | 2023-06-20     |
|   |             | 4              | Eddy current testing | Nondestructive testing of pressure equipments. Part 5: Eddy current testing NB/T 47013.6-2015   | Special equipment is not tested | 2023-06-20     |
|   |             |                |                      | Automated eddy current testing of seamless and welded (except submerged arc-welded) steel tubes for detection of imperfections GB/T 7735-2016 |                                 | 2023-06-20     |



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| 5 |             |                |   | Method of eddy current testing for titanium and titanium alloy bars and wires GB/T 23601-2009            |  | 2023-06-20     |            |
|   |             |                |   | Non-destructive testing of welds-Eddy current testing of welds by complex-plane analysis GB/T 26954-2024 |  | 2024-05-21     |            |
|   |             |                |   | Eddy current testing GJB 2908A-2020  |  | 2023-06-20     |            |
|   |             |                |   | Digital radiography  | Industrial computed tomographic(CT) inspection GJB 5312-2004 |                | 2023-06-20 |
|   |             |                | Standard Practice for Fan Beam Computed Tomographic (CT) Examination ASTM E1570-2019  |  |  | 2023-06-20     |            |
|   |             |                | Standard Practice for Computed Tomographic (CT) Examination of Castings ASTM E1814-14(2022)   |  |  | 2023-06-20     |            |
|   |             |                | Non-destructive testing-Industrial computed tomography (CT) testing-General requirements GB/T 29070—2012  |  |  | 2023-06-20     |            |
|   |             |                | Non-destructive testing—Industrial computed radiography with storage phosphor imaging plates—General principles for testing of metallic Materials using X-rays and gamma rays GB / T 26642-2022 |  |  | 2023-06-20     |            |
|   |             |                | Standard practice for X-ray digital radioscopic examination of cylinder weld GB / T 17925-2011  |  |  | 2023-06-20     |            |
|   |             |                | Method of X-ray radioscopy for butt-weld GB / T 19293-2003  |  |  | 2023-06-20     |            |
|   |             |                | Nondestructive testing of pressure equipments-Part 11:Digital radiography testing NB / T 47013.11-2023  |  | Special equipment is not tested                              | 2024-05-21     |            |
|   |             |                | Nondestructive testing of pressure equipments-Part 14:Computed radiographic testing NB / T 47013.14-2023  |  | Special equipment is not tested                              | 2024-05-21     |            |
|   |             |                | Non-destructive testing of welds — Radiographic testing —Part 2: X- and gamma-ray techniques with digital detectors ISO   |  |  | 2023-06-20     |            |



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|   |             | №              | Item/ Parameter    |   |      |                |
|   |             |                |                    | 17636-2:2022  |      |                |
|   |             |                |                    | Non-destructive testing of steel tubes -- Part 7: Digital radiographic testing of the weld seam of welded steel tubes for the detection of imperfections ISO-10893-7:2019 |      | 2023-06-20     |
|   |             |                |                    | Non-destructive of welds-Radiographic testing-Part 2: X-and gamma-ray techniques with digital detectors GB/T 3323.2-2019  |      | 2023-06-20     |
|   |             | 6              | Fatigue            | Metallic materials—Fatigue testing—Axial-strain-controlled method GB/T 26077-2021   |      | 2023-06-20     |
|   |             |                |                    | Metallic materials—Fatigue testing—Axial force-controlled method GB/T 3075-2021   |      | 2023-06-20     |
|   |             |                |                    | The test method for axial loading constant-amplitude low-cycle fatigue of metallic materials GB/T 15248-2008  |      | 2023-06-20     |
|   |             |                |                    | Metallic materials—Fatigue testing—Fatigue crack growth method GB/T 6398-2017   |      | 2023-06-20     |
|   |             | 7              | Fracture toughness | Metallic materials—Determination of plane-strain fracture toughness GB/T 4161-2007  |      | 2023-06-20     |
|   |             |                |                    | Metallic materials—Unified method of test for determination of quasistatic fracture toughness GB/T 21143-2014   |      | 2023-06-20     |



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