



Accreditation Scope

Corrosion Control Services NDT (NAL 121) Testing Laboratory, (ISO/IEC 17025:2017)

Industrial Mussafah, Abu Dhabi, UAE

Issue Date: 07-12-2022

Expiry Date: 05-12-2023

Issue No: 06

| Testing Field | Materials/ Products tested | Type of test/ Test parameter/ Properties measured/Range of measurement | Test Method (Standard, Internal Procedure, Technique) | Permanent lab (P) / Client-site (S) |
|-----------------------|--------------------------------|--|---|-------------------------------------|
| Mechanical & Physical | Ferrous & non-ferrous products | Tension testing (0-1000 kN) | ASTM E8/E8M:2021, ASTM A370:2021 BS EN ISO 6892-1 : 2019 ASME Sec IX-2021 AWS D1.1-2020 AWS D1.2-2014 AWS D1.4/D1.4M:2018 AWS D1.6/D1.6M:2017 API 1104-2021 BS EN ISO 15614 : 2017 +A1:2019 BS EN ISO 4136:2022 ASME Section VIII (DIV 1, DIV 2, DIV3)-2021 AWS B4:2016 AWS D17.1/D17.1M:2017 API 5L 46th Ed: 2018 BS EN 10164:2018 ASTM A770/A770M :03 (2018) ISO 898-1:2013 | P |
| | | Guided Bend Test for ductility of welds (90° & 180° Angle) | ASTM E190-2021 ASTM A370-2021 ASTM E290-2022 AWS D1.1-2020 AWS D1.2-2014 AWS D1.4/D1.4M: 2018 AWS D1.6/D1.6M:2017 ASME Sec IX-2021 BS EN ISO 15614-1-2017 + A1:2019 BS EN ISO 5173-2010+A1-2011 API 1104-2021 AWS B4:2016 AWS D17.1/D17.1M:2017 BS EN ISO 9606-1:2017 BS EN ISO 9606-2:2004 API 5L 46th Ed:2018 | |



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| Mechanical & Physical | Ferrous & non-ferrous products | Charpy Impact Test (0-406J) | ASTM E23:2018 ASTM A370:2021 BS EN ISO 148-1:2016 ASME Sec IX:2021 AWS D1.1:2020 AWS D1.2:2014 AWS D1.6/D1.6M:2017 ASME Section II Part C:2021 ASME Section VIII (DIV 1, DIV 2, DIV3):2021 API 1104:2021 BS EN ISO 9016:2012 AWS B4:2016 API 5L 46 th Ed:2018 ASTM A923:2022 | P |
| | | Micro Vickers Hardness Test (HV1) | ASTM E384:2017 | |
| | | Vickers Hardness test (HV10, HV30) | ASTM E 92:2017 ASTM A370:2021 ASME Sec IX : 2021 AWS D1.1:2020 AWS D1.2:2014 AWS D1.6/D1.6M:2017 API 1104 : 2021 BS EN ISO 15614-1:2017+ A1:2019 BS EN ISO 6507-1:2018 AWS B4:2016 API 5L 46th Ed: 2018 BS EN ISO 9015-1 : 2011 | |



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| Mechanical & Physical | Ferrous & non-ferrous products | Rockwell Hardness Test (0-80 HRA, 20-70 HRC) | ASTM E18:2020 ASTM A370:2021 BS EN ISO 6508-1:2016 ASME Sec IX:2021 AWS D1.1:2020 AWS D1.2:2014 AWS D1.6/D1.6M:2017 API 1104-2021 BS EN ISO 15614-1:2017 +A1:2019 API 5L 46th Ed:2018 ISO 898-1:2013 ISO 898-2:2012 ASTM F606/F606M:2021 ANSI / NACE MR0175 / ISO 15156-1&2:2015 | P |
| | | Brinell Hardness Test (100-400 HBW 2.5/31.25, 62.5, 187.5) | ASTM E10:2018 ASTM A370:2021 BS EN ISO 6506-1:2014 | |
| | | Soundness Check Test | ISO 898-1:2013 ASTM F606/F606M:2021 | |
| | | Tensile test under wedge loading | ISO 898-1:2013 ASTM F606/F606M:2021 | |
| | | Proof load test (0-1000 kN) | ISO 898-1:2013 ISO 898-2:2012 ASTM F606/F606M:2021 | |
| | | Fillet Weld Test/ Fracture Test | ASME Sec IX:2021 AWS D1.1:2020 AWS D1.2:2014 AWS D1.6/D1.6M:2017 | |
| | | Nick Break | API 1104:2021 | |



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| Mechanical & Physical | Ferrous & non-ferrous products | Macro Hardness survey of Weld | ASME Sec IX:2021 AWS D1.1:2020 AWS D1.2:2014 AWS D1.6/D1.6M:2017 API 1104:2021 BS EN ISO 15614-1:2017 +A1:2019 ANSI / NACE MR0175 / ISO 15156-1&2:2015 AWS B4:2016 AWS D17.1/D17.1M:2017 API 5L 46th Ed:2018 | P |
| | | Macro / micro examination of weld (Destructive Testing of Weld) | ASME Sec IX:2021 AWS D1.1:2020 AWS D1.2:2014 AWS D1.6/D1.6M:2017 API 1104:2021 BS EN ISO 17639:2022 ASTM E340:2015 | |
| | | Macroetch Testing of Consumable Electrode Remelted Steel Bars and Billets | ASTM A604/A604M:2007 (2022) | |
| | | Macroetch Testing of Steel Bars, Billets, Blooms and Forgings | ASTM E381:2022 | |
| | | Preparation of Metallographic Specimens | ASTM E3:2011(2017) | |
| | | Micro Examination Micro etching | ASTM E407:2007 (2015)e1 ISO 17639:2022 ASM Handbook-9:2004 | |



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| Mechanical & Physical | Ferrous & non-ferrous products | Micro Examination - Volume Fraction by Systematic Manual Point Count | ASTM E562:2019e1 | P |
| | | Micro Examination Determining Average Grain Size | ASTM E112:2021 | |
| | | Micro Examination-Determining the Inclusion Content of Steel | ASTM E45:2018a | |
| | | Assessing the Degree of Banding or Orientation of Microstructures | ASTM E1268:2019 | |
| | | Coating Thickness | ASTM B487:2020 | |
| | | Field Metallographic Replicas Examination | ASTM E 1351:2020 | |
| | | Inter Granular corrosion (IGC) test samples Method A, B, C, E | ASTM A262:2015 (2021) | |
| | | Inter Granular corrosion (IGC) test samples Method B | ASTM G28:2002 (2015) | |
| | | Inter Granular corrosion (IGC) test Method A | ASTM G28:2002 (2015) | |
| | | Pitting corrosion, method B & D | ASTM G48:2011(2020) e1 | |
| | | Pitting corrosion, method A & C | | |



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| Mechanical & Physical | Ferrous & non-ferrous products | Pitting corrosion, method C | ASTM A923:2022 | P | |
| | | Pitting corrosion, method A | | | |
| | | Hydrogen Induced Cracking test (HIC) | NACE TM 0284:2016 | | |
| | | Sulfide stress cracking and stress corrosion cracking test (SSCC)-Method A | NACE TM 0177:2016 NACE TM 0316-2016 | | |
| | | Sulfide stress cracking and stress corrosion cracking test (SSCC)-Method B -4 Point bend test | NACE TM 0177:2016 ASTM G39 :1999 (2021) | | |
| | | Stress oriented hydrogen induced cracking (SOHIC) | NACE TM 0284:2016 NACE MR 0175 / ISO15156-1&2:2015 | | |
| Chemical | Ferrous and non-ferrous products | Elemental Analysis of Metal by OES | ASTM E415-2021 NDTCCS/MLAB/SOP18 | P | |
| | | 1. Low Alloy Steels- C, Si, S, P, Mn, Ni, Cr, Mo, Cu, Co, Al, V, As, N | | | |
| | | 2. Stainless Steel C, Si, Mo, P, S, Cr, Ni, Cu, N, Mn | | | ASTM E1086-2014 NDTCCS/MLAB/SOP18 |
| | | 3. Nickel & its Alloy C, Si, S, P, Mn, Cu, Fe, Nb, Cr, Mo, Co, Ti, Al, B, Ni, Ta | | | ASTM E3047-2016 NDTCCS/MLAB/SOP18 |
| | | 4. Cast Iron C, Si, S, P, Mn, Ni, Cr, Cu, Mo, Al, Ti, V, Co, W, Sn, As, Sb, Pb, Bi, Se, B, N | | | ASTM E1999-18 NDTCCS/MLAB/SOP18 |



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| Chemical | Ferrous and non-ferrous products | 5. Aluminium & its Alloy Cu, Mg, Si, Fe, Mn, Ni, Sn, Zn, Pb, Ti, Cr, Be | ASTM E 1251-17a NDTCCS/MLAB/SOP18 | P |
| | | 6. Copper & its Alloy Sn, Pb, Zn, Fe, Ni, Al, Si, Mn, As, Bi, Sb, P, Cr, Ag, Cd, Co, Te, Cu | ASTM E 478-08(2017) NDTCCS/MLAB/SOP18 | |
| | | 7. Zinc and its Alloy Pb, Mg, Al, Cd, Fe, Sn, Cu, Ni, Co, Bi, Sb, As | ASTM E 536-16 NDTCCS/MLAB/SOP18 | |
| Chemical | Water & Wastewater | pH @ 25 °C (0 to 14) | Method 4500 H+ B- APHA 23 rd Edition, 2017 | P |
| | | Electrical conductivity | Method 2510 B- APHA 23 rd Edition, 2017 | |
| | | Total Suspended Solids (up to 200 mg/l) | Method 2540D - APHA 23 rd Edition, 2017 | |
| | | Total Dissolved Solids (500 to 20 000 mg/l) | Method 2540C - APHA 23 rd Edition, 2017 | |
| | | Dissolve Oxygen | Method 4500 O ⁻ C & H APHA 23 rd Edition, 2017 | |
| | | Nitrogen Ammonia | Method 4500 NH ₃ B&C APHA 23 rd Edition, 2017 | |
| | | Total Kjeldal Nitrogen | Method 4500 N org B&C APHA 23 rd Edition, 2017 | |
| | | Fluoride | Method 4500 F- D APHA 23 rd Edition, 2017 | |
| Nitrogen Nitrates | Method 4500 NO ₃ ⁻ B APHA 23 rd Edition, 2017 | | | |



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| Chemical | Water & Wastewater | Biochemical Oxygen Demand (5Days) | Method 5210B - APHA 23 rd Edition, 2017 | P |
| | | Chemical oxygen demand (> 50 mg O ₂ /L) | Method 5220C - APHA 23 rd Edition, 2017 | |
| | | Oil and grease | Method 5520B - APHA 23 rd Edition, 2017 | |
| | | Heavy Metals (Cu, Cd, Pb, Zn, Ni, Cr, Ag, Al, As, Ba, Be, Fe, Mn, Co, Se, B, Sr, Ti) | Method 3030B, 3030F, 3120B - APHA 23 rd Edition, 2017 & EPA 200.7 | |
| Chemical | Water | Chloride | Method 4500 Cl B- APHA 23 rd Edition, 2017 | P |
| | | Sulphate | Method 4500 SO ₄ ²⁻ C- APHA 23 rd Edition, 2017 | |
| | | Carbonate | Method 2320 B- APHA 23 rd Edition, 2017 | |
| | | Bicarbonate | Method 2320 B- APHA 23 rd Edition, 2017 | |
| | | Calcium | Method 3030B, 3120B - APHA 23 rd Edition, 2017 | |
| | | Magnesium | Method 3030B, 3120B - APHA 23 rd Edition, 2017 | |
| | | Potassium | Method 3030B, 3120B - APHA 23 rd Edition, 2017 | |
| | | Sodium | Method 3030B, 3120B - APHA 23 rd Edition, 2017 | |
| END | | | | |