



Scope of Accreditation for Testing

As per ISO/IEC 17025:2017

CAB Name: GEO M & M Analytics – A Division of Geo Designs and
Research Pvt. Ltd
Address: B/h Makarpura Railway Station, Near Darshnam Garden
City, Maneja, (T.P No. 33 & F.P No. 55 B/s Rajanagar)
Vadodara – 390013, Gujarat
Certificate No.: T-0035

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Issue date : 30.09.2025

Validity : 29.09.2029

Amendment date: N/A

| Sr. No | Product/ Material to be tested | Parameter/ Type of test/ Properties Measured | Range of measurement/ detection limit | Method/ Technique | Facility |
|---|--|--|---------------------------------------|--|-----------|
| Discipline - Chemical, Group - Metal & alloys | | | | | |
| 1 | Carbon Steel (low carbon, medium carbon & high carbon steel) | Carbon | 0.02 % to 1.5 % | ASTM E415 / IS 8811 JIS G 1253 Amendment 1 | Permanent |
| 2 | | Silicon | 0.06 % to 1.6 % | ASTM E415 / IS 8811 JIS G 1253 Amendment 1 | Permanent |
| 3 | | manganese | 0.09 % to 2.2 % | ASTM E415 / IS 8811 JIS G 1253 Amendment 1 | Permanent |
| 4 | | Phosphorus | 0.01 % to 0.15 % | ASTM E415 / IS 8811 JIS G 1253 Amendment 1 | Permanent |
| 5 | | Sulphur | 0.003 % to 0.06 % | ASTM E415 / IS 8811 JIS G 1253 Amendment 1 | Permanent |
| 6 | | Chromium | 0.02 % to 5.00 % | ASTM E415 / IS 8811 JIS G 1253 Amendment 1 | Permanent |
| 7 | | Molybdenum | 0.02 % to 1.5 % | ASTM E415 / IS 8811 JIS G 1253 Amendment 1 | Permanent |
| 8 | | Nickel | 0.018 % to 5 % | ASTM E415 / IS 8811 JIS G 1253 Amendment 1 | Permanent |

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Issue date : 30.09.2025

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| Sr. No | Product/ Material to be tested | Parameter/ Type of test/ Properties Measured | Range of measurement/ detection limit | Method/ Technique | Facility |
|--------|--|--|---------------------------------------|--|-----------|
| 9 | Carbon Steel (low carbon, medium carbon & high carbon steel) | Aluminum | 0.01 % to 0.095 % | ASTM E415 / IS 8811 JIS G 1253 Amendment 1 | Permanent |
| 10 | | Cobalt | 0.005 % to 0.25 % | ASTM E415 / IS 8811 JIS G 1253 Amendment 1 | Permanent |
| 11 | | Copper | 0.01 % to 0.8 % | ASTM E415 / IS 8811 JIS G 1253 Amendment 1 | Permanent |
| 12 | | Niobium | 0.009 % to 0.15 % | ASTM E415 / IS 8811 JIS G 1253 Amendment 1 | Permanent |
| 13 | | Titanium | 0.02 % to 0.2 % | ASTM E415 / IS 8811 JIS G 1253 Amendment 1 | Permanent |
| 14 | | vanadium | 0.003 % to 0.3 % | ASTM E415 / IS 8811 JIS G 1253 Amendment 1 | Permanent |
| 15 | Carbon Steel (low carbon, medium carbon & high carbon steel) | Tungsten | 0.113% to 0.15% | ASTM E415 / IS 8811 | Permanent |
| 16 | | Lead | 0.001% to 0.36% | ASTM E415 / IS 8811 | Permanent |
| 17 | | Tin | 0.015% to 0.076% | ASTM E415 / IS 8811 | Permanent |
| 18 | | Boron | 0.0004% to 0.008% | ASTM E415 / IS 8811 | Permanent |

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| Sr. No | Product/ Material to be tested | Parameter/ Type of test/ Properties Measured | Range of measurement/ detection limit | Method/ Technique | Facility |
|--------|--------------------------------|--|---------------------------------------|----------------------|-----------|
| 19 | Stainless Steel | Carbon | 0.005 % to 0.3 % | ASTM E1086 / IS 9879 | Permanent |
| 20 | | Silicon | 0.03 % to 2 % | ASTM E1086 / IS 9879 | Permanent |
| 21 | | Manganese | 0.03 % to 8 % | ASTM E1086 / IS 9879 | Permanent |
| 22 | | Phosphorus | 0.002 % to 0.1 % | ASTM E1086 / IS 9879 | Permanent |
| 23 | | Sulphur | 0.002 % to 0.2 % | ASTM E1086 / IS 9879 | Permanent |
| 24 | | Chromium | 2 % to 28 % | ASTM E1086 / IS 9879 | Permanent |
| 25 | | Molybdenum | 0.01 % to 3 % | ASTM E1086 / IS 9879 | Permanent |
| 26 | | Nickel | 0.01 % to 22 % | ASTM E1086 / IS 9879 | Permanent |
| 27 | | Aluminum | 0.0018% to 0.11% | ASTM E1086 / IS 9879 | Permanent |
| 28 | | Cobalt | 0.014% to 8.7% | ASTM E1086 / IS 9879 | Permanent |
| 29 | | Copper | 0.05 % to 3 % | ASTM E1086 / IS 9879 | Permanent |
| 30 | | Niobium | 0.0017% to 0.28% | ASTM E1086 / IS 9879 | Permanent |
| 31 | | Titanium | 0.00117% to 0.5% | ASTM E1086 / IS 9879 | Permanent |
| 32 | Vanadium | 0.005% to 0.1% | ASTM E1086 / IS 9879 | Permanent | |
| 33 | Stainless Steel | Tungsten | 0.02% to 0.15% | ASTM E1086 / IS 9879 | Permanent |

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|--------|--------------------------------|--|---------------------------------------|------------------------|-----------|
| 34 | | Lead | 0.002% to 0.2% | ASTM E1086 / IS 9879 | Permanent |
| 35 | | Tin | 0.0002% to 0.02% | ASTM E1086 / IS 9879 | Permanent |
| 36 | | Nitrogen | 0.0002% to 0.35% | ASTM E1086 / IS 9879 | Permanent |
| 37 | Alloy Steel (Tool Steel) | Carbon | 0.691% to 1.875% | JIS G 1253 Amendment 1 | Permanent |
| 38 | | Silicon | 0.211% to 0.369% | JIS G 1253 Amendment 1 | Permanent |
| 39 | | Manganese | 0.242% to 0.408% | JIS G 1253 Amendment 1 | Permanent |
| 40 | | Phosphorus | 0.001% to 0.033% | JIS G 1253 Amendment 1 | Permanent |
| 41 | | Sulphur | 0.001% to 0.15% | JIS G 1253 Amendment 1 | Permanent |
| 42 | | Chromium | 3.426% to 14.157% | JIS G 1253 Amendment 1 | Permanent |
| 43 | | Molybdenum | 0.635% to 5.953% | JIS G 1253 Amendment 1 | Permanent |
| 44 | | Nickel | 0.1% to 0.431% | JIS G 1253 Amendment 1 | Permanent |
| 45 | | Aluminum | 0.0004% to 0.017% | JIS G 1253 Amendment 1 | Permanent |
| 46 | | Cobalt | 0.0002% to 0.33% | JIS G 1253 Amendment 1 | Permanent |
| 47 | | Copper | 0.001% to 0.251% | JIS G 1253 Amendment 1 | Permanent |
| 48 | Niobium | 0.001% to 0.025% | JIS G 1253 Amendment 1 | Permanent | |

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|--------|--------------------------------|--|---------------------------------------|---------------------------|-----------|
| 49 | (Alloy Steel Tool Steel) | Titanium | 0.001% to 0.50% | JIS G 1253 Amendment 1 | Permanent |
| 50 | | Vanadium | 0.486% to 2.299% | JIS G 1253 Amendment 1 | Permanent |
| 51 | | Tungsten | 0.022% to 7.03% | JIS G 1253 Amendment 1 | Permanent |
| 52 | | Lead | 0.0004% to 0.01% | JIS G 1253 Amendment 1 | Permanent |
| 53 | | Tin | 0.001% to 0.01% | JIS G 1253 Amendment 1 | Permanent |
| 54 | | Bismuth | 0.001% to 0.01% | JIS G 1253 Amendment 1 | Permanent |
| 55 | Alloy Steel (Cast Iron) | Carbon | 0.02 % to 4.5 % | ASTM E1999 / IS 15338 | Permanent |
| 56 | | Silicon | 0.001 % to 5 % | ASTM E1999 / IS 15338 | Permanent |
| 57 | | Mn | 0.02 % to 5 % | ASTM E1999 / IS 15338 | Permanent |
| 58 | | Phosphorus | 0.001 % to 0.5 % | ASTM E1999 / IS 15338 | Permanent |
| 59 | | Sulphur | 0.006 % to 0.2 % | ASTM E1999 / IS 15338 | Permanent |
| 60 | | Chromium | 0.009 % to 1.5 % | ASTM E1999 / IS 15338 | Permanent |
| 61 | | Molybdenum | 0.1 % to 1 % | ASTM E1999 / IS 15338 | Permanent |
| 62 | | Nickel | 0.2 % to 4 % | ASTM E1999 / IS 15338 | Permanent |
| 63 | | Aluminum | 0.003 % to 0.1 % | ASTM E1999 / IS 15338 | Permanent |

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|--------|--------------------------------|--|---------------------------------------|-----------------------|-----------|
| 64 | | Cobalt | 0.019% to 0.15% | ASTM E1999 / IS 15338 | Permanent |
| 65 | | Copper | 0.009% to 3% | ASTM E1999 / IS 15338 | Permanent |
| 66 | Alloy Steel (Cast Iron) | Niobium | 0.001% to 0.21% | ASTM E1999 / IS15338 | Permanent |
| 67 | | Titanium | 0.006 to 0.4% | ASTM E1999 / IS15338 | Permanent |
| 68 | | Vanadium | 0.03 % to 1 % | ASTM E1999 / IS15338 | Permanent |
| 69 | | Tungsten | 0.005% to 0.007% | ASTM E1999 / IS15338 | Permanent |
| 70 | | Lead | 0.021% to 0.029% | ASTM E1999 / IS15338 | Permanent |
| 71 | | Tin | 0.001% to 0.038% | ASTM E1999 / IS15338 | Permanent |
| 72 | | Magnesium | 0.001% to 0.15% | ASTM E1999 / IS15338 | Permanent |
| 73 | Arsenic | 0.001% to 0.1% | ASTM E1999 / IS15338 | Permanent | |
| 74 | Aluminum & Its Alloys | Silicon | 0.02 % to 16 % | IS 11035 / ASTM E1251 | Permanent |
| 75 | | Iron | 0.01 % to 0.50 % | IS 11035 / ASTM E1251 | Permanent |
| 76 | | Copper | 0.9 % to 10 % | IS 11035 / ASTM E1251 | Permanent |
| 77 | | Manganese | 0.002 % to 1.2 % | IS 11035 / ASTM E1251 | Permanent |
| 78 | Aluminum & Its Alloys | Magnesium | 0.001 % to 2 % | IS 11035 / ASTM E1251 | Permanent |



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|--------|--------------------------------|--|---------------------------------------|-----------------------|-----------|
| 79 | | Chromium | 0.001 % to 0.23 % | IS 11035 / ASTM E1251 | Permanent |
| 80 | | Nickel | 0.007 % to 3.5 % | IS 11035 / ASTM E1251 | Permanent |
| 81 | | Zinc | 0.006 % to 5.7 % | IS 11035 / ASTM E1251 | Permanent |
| 82 | | Titanium | 0.01 %to 0.2 % | IS 11035 / ASTM E1251 | Permanent |
| 83 | | Lead | 0.05 % to 0.5 % | IS 11035 / ASTM E1251 | Permanent |
| 84 | | Tin | 0.001 % to 0.5 % | IS 11035 / ASTM E1251 | Permanent |
| 85 | | Vanadium | 0.004 % to 0.02 % | IS 11035 / ASTM E1251 | Permanent |
| 86 | | Silver | 0.001% to 0.2% | IS 11035 / ASTM E1251 | Permanent |
| 87 | | Bismuth | 0.014% to 0.2% | IS 11035 / ASTM E1251 | Permanent |
| 88 | | Cobalt | 0.0005% to 0.2% | IS 11035 / ASTM E1251 | Permanent |
| 89 | | Zirconium | 0.003 %to 0.1 % | IS 11035 / ASTM E1251 | Permanent |
| 90 | Copper & Copper Alloys | Zinc | 0.001% to 43.054% | BS EN 15079 | Permanent |
| 91 | | Lead | 0.001% to 12.43% | BS EN 15079 | Permanent |
| 92 | | Tin | 0.00045% to 11.077% | BS EN 15079 | Permanent |
| 93 | Copper & Copper Alloys | Phosphorus | 0.001% to 1.1% | BS EN 15079 | Permanent |
| 94 | | Manganese | 0.001% to 5.1% | BS EN 15079 | Permanent |
| 95 | | Iron | 0.001% to 7.2% | BS EN 15079 | Permanent |
| 96 | | Nickel | 0.001% to 15% | BS EN 15079 | Permanent |

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| Sr. No | Product/ Material to be tested | Parameter/ Type of test/ Properties Measured | Range of measurement/ detection limit | Method/ Technique | Facility |
|--------|--------------------------------|--|---------------------------------------|--|--|
| 97 | | Silicon | 0.001% to 5% | BS EN 15079 | Permanent |
| 98 | | Magnesium | 0.001% to 0.3% | BS EN 15079 | Permanent |
| 99 | | Chromium | 0.001% to 0.15% | BS EN 15079 | Permanent |
| 100 | | Arsenic | 0.001% to 0.5% | BS EN 15079 | Permanent |
| 101 | | Antimony | 0.003% to 0.2332% | BS EN 15079 | Permanent |
| 102 | | Bismuth | 0.001% to 2% | BS EN 15079 | Permanent |
| 103 | | Silver | 0.00036% to 0.11% | BS EN 15079 | Permanent |
| 104 | | Beryllium | 0.001% to 0.1771% | BS EN 15079 | Permanent |
| 105 | | Cobalt | 0.013% to 0.2% | BS EN 15079 | Permanent |
| 106 | | Aluminum | 0.01% to 0.17% | BS EN 15079 | Permanent |
| 107 | | Sulphur | 0.01% to 0.1% | BS EN 15079 | Permanent |
| 108 | | Nickel & Nickel Alloys | Carbon | 0.003% to 0.1529% | By optical emission Spectro user manual of Artus 8 |
| 109 | Silicon | | 0.015% to 0.21% | By optical emission Spectro user manual of Artus 8 | Permanent |
| 110 | Manganese | | 0.085% to 1.133% | By optical emission Spectro user manual of Artus 8 | Permanent |
| 111 | Sulphur | | 0.00036% to 0.025% | By optical emission Spectro user manual of Artus 8 | Permanent |
| 112 | Chromium | | 0.005% to 24.64% | By optical emission Spectro user manual of Artus 8 | Permanent |



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| Sr. No | Product/ Material to be tested | Parameter/ Type of test/ Properties Measured | Range of measurement/ detection limit | Method/ Technique | Facility |
|--------|--------------------------------|--|---------------------------------------|--|-----------|
| 113 | Nickel & Nickel Alloys | Iron | 0.076% to 32.45% | By optical emission Spectro user manual of Artus 8 | Permanent |
| 114 | | Molybdenum | 0.017% to 16.94% | By optical emission Spectro user manual of Artus 8 | Permanent |
| 115 | | Vanadium | 0.001% to 0.0517% | By optical emission Spectro user manual of Artus 8 | Permanent |
| 116 | | Copper | 0.025% to 35.86% | By optical emission Spectro user manual of Artus 8 | Permanent |
| 117 | | Tungsten | 0.002% to 3.553% | By optical emission Spectro user manual of Artus 8 | Permanent |
| 118 | Nickel & Nickel Alloys | Cobalt | 0.01% to 0.605% | By optical emission Spectro user manual of Artus 8 | Permanent |
| 119 | | Niobium | 0.002% to 3.883% | By optical emission Spectro user manual of Artus 8 | Permanent |
| 120 | | Aluminum | 0.004% to 0.1617% | By optical emission Spectro user manual of Artus 8 | Permanent |
| 121 | | Titanium | 0.006% to 1.056% | By optical emission Spectro user manual of Artus 8 | Permanent |
| 122 | | Zirconium | 0.001% to 0.05% | By optical emission Spectro user manual of Artus 8 | Permanent |

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|--------|--------------------------------|--|---------------------------------------|--|-----------------|
| 123 | Nickel & Nickel Alloys | Tin | 0.000144% to 0.00253% | By optical emission Spectro user manual of Artus 8 | Permanent |
| 124 | | Boron | 0.002% to 0.00297% | By optical emission Spectro user manual of Artus 8 | Permanent |
| 125 | | Magnesium | 0.0002% to 0.0176% | By optical emission Spectro user manual of Artus 8 | Permanent |
| 126 | | Tantalum | 0.001% to 0.00121% | By optical emission Spectro user manual of Artus 8 | Permanent |
| 127 | | Nitrogen | 0.0005% to 0.0187% | By optical emission Spectro user manual of Artus 8 | Permanent |
| 128 | Ferrous metal & its alloys | Iron | 30.00% to 99.00% | ASTM E1476 by Portable Laser Spectrometer | Permanent/ Site |
| 129 | Aluminum & Its Alloys | Aluminum | 70.00% to 100.00% | ASTM E1476 by Portable Laser Spectrometer | Permanent/ Site |
| 130 | Copper & Its Alloys | Copper | 50.00% to 100.00% | ASTM E1476 by Portable Laser Spectrometer | Permanent/ Site |
| 131 | Nickel & Its Alloys | Nickel | 30.00% to 100.00% | ASTM E1476 by Portable Laser Spectrometer | Permanent/ Site |
| 132 | Titanium & Its Alloys | Titanium | 50.00% to 100.00% | ASTM E1476 by Portable Laser Spectrometer | Permanent/ Site |

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|---|---|--|--|---|-----------------|
| 133 | Zinc & Its Alloys | Zinc | 70.00% to 100.00% | ASTM E1476 by Portable Laser Spectrometer | Permanent/ Site |
| Discipline - Chemical , Group- Corrosion Test | | | | | |
| 134 | Galvanizing, Coating, Paining etc. product | Salt Spray Test | Qualitative | ASTM B117 IS 9844 ISO 9227 | Permanent |
| 135 | Austenitic Stainless Steels | Resistance to Intergranular corrosion Test practice C | Qualitative: Qualitative Test, 5 Cycles Test (240 Hours). Corrosion Rate given in Mils/Year (MPY). | ASTM A 262 | Permanent |
| 136 | | Resistance to Intergranular corrosion Test practice A | Qualitative :250X to 500 | ASTM A 262 | Permanent |
| 137 | | Resistance to Intergranular corrosion Test practice B | Qualitative :(1 Cycle = 24 Hours), 1 - 5 Cycles test (Customer Specific). Corrosion Rate given in Mils/Year (MPY). | ASTM A 262 | Permanent |
| 138 | | Resistance to Intergranular corrosion Test practice E | Qualitative: Bend, Former: 1T, Bend angle: 180 Deg | ASTM A 262 | Permanent |
| 139 | | Resistance to Intergranular corrosion Test practice F | Qualitative | ASTM A 262 | Permanent |
| 140 | Duplex (Austenite-Ferrite) Stainless steels | Charpy impact test for classification of structures of | 5 J to 250 J | ASTM A923 | Permanent |

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|--------|--|---|--|-------------------|-----------|
| 141 | | duplex stainless steel-Method B | | | |
| | | Ferric Chloride Corrosion test for classification of duplex stainless steel-Method C | Loss in weight, Acceptance criteria:10 mdd Max | ASTM A923 | Permanent |
| 142 | | Sodium hydroxide etch test for classification of etch structure of duplex stainless steel- Method A | Qualitative :50X to 1000X | ASTM A923 | Permanent |
| 143 | Ferritic, austenitic and ferritic-austenitic (duplex) stainless steels | Determination of Resistance to intergranular corrosion of stainless steels | Qualitative: Bend angle: 90 Deg. | ISO 3651-2 | Permanent |
| 144 | Stainless Steels & related alloys | ASTM G 48 Method A Ferric Chloride Pitting Test | Qualitative :0.001 g/m ² to 50 g/m ² | ASTM G48 | Permanent |
| 145 | | ASTM G 48 Method B Ferric Chloride Crevice Test | Qualitative | ASTM G48 | Permanent |
| 146 | | ASTM G 48 Method C Critical Pitting Temperature test for nickel base | Qualitative | ASTM G48 | Permanent |



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|--------|--|--|---------------------------------------|-------------------|-----------|
| | | and chromium bearing alloys | | | |
| 147 | Stainless Steels & related alloys | ASTM G 48 Method D Critical Crevice Temperature test for nickel base and chromium bearing alloys | Qualitative | ASTM G48 | Permanent |
| 148 | | ASTM G 48 Method E Critical Pitting Temperature test for stainless steel | Qualitative | ASTM G48 | Permanent |
| 149 | | ASTM G 48 Method F Critical Crevice Temperature test for stainless steel | Qualitative | ASTM G48 | Permanent |
| 150 | Stainless Steels & related alloys | Chloride Stress Corrosion Cracking | Qualitative | ASTM G36 | Permanent |
| 151 | | Hydrogen Induced Cracking Test | Qualitative | NACE TM0284 | Permanent |
| 152 | | Sulphide Stress Corrosion Cracking | Qualitative | NACE TM0177 | Permanent |
| 153 | Wrought Nickel, rich Chromium Bearing alloys | Detecting Susceptibility to Inter Granular Corrosion (Method A) | Qualitative 60mpy | ASTM G28 | Permanent |

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| Sr. No | Product/ Material to be tested | Parameter/ Type of test/ Properties Measured | Range of measurement/ detection limit | Method/ Technique | Facility |
|---|--|---|---------------------------------------|--|-----------|
| 154 | | Detecting Susceptibility to Inter Granular Corrosion (Method B) | Qualitative | ASTM G28 | Permanent |
| Discipline - Mechanical , Group- Mechanical Properties of Metal | | | | | |
| 155 | Ferrous materials, alloys & Products Ferrous materials, alloys & Products | Tensile Test - Ultimate Tensile Strength | 100 to 1500 Mpa | ASTM A370 ASTM E8/8M IS1608 (Part 1) ISO 6892-1 | Permanent |
| 156 | | Tensile Test - Yield Stress | 50 to 1000 Mpa | ASTM A370 ASTM E8/8M IS1608 (Part 1) ISO 6892-1 | Permanent |
| 157 | | Tensile test - 0.2% Proof Stress | 50 to 1000 Mpa | ASTM A370 ASTM E8/8M IS1608 (Part 1) ISO 6892-1 | Permanent |
| 158 | | Tensile test - 0.5% Proof Stress | 50 to 1000 Mpa | ASTM A370 ASTM E8/8M IS1608 (Part 1) ISO 6892-1 | Permanent |
| 159 | | UTS Elevated temperature tensile test 40°C to 1150°C | 50 to 1000 Mpa | ASTM E21, ISO 6892 (Part 2) | Permanent |
| 160 | | Yield Strength Elevated temperature tensile test 40°C to 1150°C | 50 to 800 Mpa | ASTM E21, ISO 6892 (Part 2) | Permanent |
| 161 | | % Elongation Elevated | 1% to 95% | ASTM E21, ISO 6892 (Part 2) | Permanent |

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| Sr. No | Product/ Material to be tested | Parameter/ Type of test/ Properties Measured | Range of measurement/ detection limit | Method/ Technique | Facility |
|--------|--|--|---------------------------------------|---|-----------------|
| | | temperature tensile test 40°C to 1150°C | | | |
| 162 | Ferrous materials, alloys & Products Ferrous materials, alloys & Products | % Reduction in Area Elevated temperature tensile test 40°C to 1150°C | 1% to 95% | ASTM E21, ISO 6892 (Part 2) | Permanent |
| 163 | | 0.2% Proof Stress Elevated temperature tensile test 40°C to 1150°C | 50 to 800 Mpa | ASTM E21, ISO 6892 (Part 2) | Permanent |
| 164 | | 0.5% Proof Stress Elevated temperature tensile test 40°C to 1150°C | 50 to 800 Mpa | ASTM E21, ISO 6892 (Part 2) | Permanent |
| 165 | | Elongation | 1 to 95% | ASTM A370 ASTM E8/8M IS 1608 (Part 1) ISO 6892-1 | Permanent |
| 166 | | Tensile test - Reduction in Area | 1 to 95% | | Permanent |
| 167 | Ferrous materials, alloys & Products | Bend Test | Qualitative | ASTM A370 IS1599 IS1786 | Permanent |
| 168 | Ferrous materials, alloys & Products | Dynamic Hardness (Leeb) | 300 to 900 HL | ASTM A956 | Permanent/ Site |
| 169 | | Leeb Hardness Test (Portable Hardness Test) Brinell Hardness Test (2.5mm/ 187.5kgf) | 100 to 650 HBW | ASTM A956/ A956M | Permanent/ Site |



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| Sr. No | Product/ Material to be tested | Parameter/ Type of test/ Properties Measured | Range of measurement/ detection limit | Method/ Technique | Facility |
|--------|--|---|---------------------------------------|---|--------------------|
| 170 | Ferrous materials, alloys & Products Ferrous materials, alloys & Products | Leeb Hardness Test (Portable Hardness Test) Rockwell Hardness Test (HRC) | 20 to 65 HRC | ASTM A956/ A956M | Permanent/ Site |
| 171 | | Proof Load test | 2kN to 1000kN | ASTM A370 ASTM A194 ASTM A193 IS 1367 (Part 3) IS 1367 (Part 6) ISO 898-1 ISO 898-2 | Permanent |
| 172 | | Wedge Tension test | 2kN to 1000kN | ASTM A370 ASTM F606 | Permanent |
| 173 | | Rockwell Hardness Test (HRA) | 20 to 88 HRA | ASTM A370 ASTM E18 IS 1586 (Part 1) ISO 6508-1 | Permanent/ Site |
| 174 | | Rockwell Hardness Test (HRC) | 20 to 70 HRC | ASTM A 370 ASTM E 18 IS 1586 (Part 1) ISO 6508-1 ASTM F 606 | Permanent/ Site |
| 175 | | Rockwell Hardness Test (HR15N) | 70 to 91 HR15N | ASTM A370 ASTM E18 IS 1586 (Part 1) ISO 6508-1 | Permanent |
| 176 | | Rockwell Hardness Test (HR30N) | 42 to 80 HR30N | ASTM A370 ASTM E18 IS 1586 (Part 1) ISO 6508-1 | Permanent |
| 177 | Rockwell Hardness Test (HR45N) | 20 to 70 HR45N | ASTM A370 ASTM E18 | Permanent | |

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| Sr. No | Product/ Material to be tested | Parameter/ Type of test/ Properties Measured | Range of measurement/ detection limit | Method/ Technique | Facility |
|--------|--|--|---------------------------------------|---|-----------|
| 178 | | Rockwell Hardness Test (HR15T) | 73 to 93 HR15T | ASTM A370 ASTM E18 IS 1586 (Part 1) ISO 6508-1 | Permanent |
| 179 | Ferrous materials, alloys & Products Ferrous materials, alloys & Products | Rockwell Hardness Test (HR30T) | 43 to 82 HR30T | ASTM A370 ASTM E18 IS 1586 (Part 1) ISO 6508-1 | Permanent |
| 180 | | Rockwell Hardness Test (HR45T) | 12 to 72 HR45T | ASTM A370 ASTM E18 IS 1586 (Part 1) ISO 6508-1 | Permanent |
| 181 | | Vickers Hardness Test (HV0.1) | 40 to 1500HV0.1 | ASTM E384 IS 1501 (Part 1) ISO 6507-1 ASTM F606 | Permanent |
| 182 | | Vickers Hardness Test (HV0.2) | 40 to 1500HV0.2 | ASTM E384 IS 1501 (Part 1) ISO 6507-1 ASTM F606 | Permanent |
| 183 | | Vickers Hardness Test (HV0.3) | 40 to 1500HV0.3 | ASTM E 384 IS 1501 (Part 1) ISO 6507-1 ASTM F606 | Permanent |
| 184 | | Vickers Hardness Test (HV0.5) | 40 to 1500HV0.5 | ASTM E384 IS 1501 (Part 1) ISO 6507-1 ASTM F606 | Permanent |
| 185 | Ferrous materials, alloys & Products | Vickers Hardness Test (HV1) | 40 to 1500HV1 | ASTM E384 ASTM E92 IS 1501 (Part 1) | Permanent |

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| Sr. No | Product/ Material to be tested | Parameter/ Type of test/ Properties Measured | Range of measurement/ detection limit | Method/ Technique | Facility |
|--------|--------------------------------------|--|---------------------------------------|---|--------------------|
| | Ferrous materials, alloys & Products | | | ISO 6507-1 ASTM F606 | |
| 186 | | Hardness Test on Weld (HV5) | 40 to 1500HV5 | ASTM E92 IS 1501 (Part 1) ISO 6507-1 ASTM F606 | Permanent |
| 187 | | Vickers Hardness Test (HV10) | 40 to 1500HV10 | ASTM E92 IS 1501(Part 1) ISO 6507-1 ASTM F606 | Permanent |
| 188 | | Vickers Hardness Test (HV30) | 40 to 1500HV30 | ASTM E92 IS 1501 (Part 1) ISO 6507-1 | Permanent |
| 189 | | Hardness Test on Weld (HV50) | 40 to 1500HV50 | ASTM E92 IS 1501 (Part 1) ISO 6507-1 | Permanent |
| 190 | | Brinell Hardness Test HBW | 50 to 700 HBW 2.5mm/187.5kgf | ASTM A370 IS 1500 (Part 1) ISO 6506-1 ASTM E10 | Permanent/ Site |
| 191 | Ferrous materials, alloys & Products | Brinell Hardness Test (HBW 5mm/750kg) | 50 to 700 HBW 5/750 | ASTM A370 IS 1500 (Part 1) ISO 6506-1 ASTM E10 | Permanent/ Site |
| 192 | | Brinell Hardness Test (HBW 10mm/3000kgf) | 50 to 700 HBW 10/3000 | ASTM A370 IS 1500 (Part 1) ISO 6506-1 ASTM E10 | Permanent |
| 193 | | Charpy V notch Impact Test Temp. Room to-196 degree centigrade) | 5 to 240 J | ASTM A370 ASTM E23 BS EN ISO 148-1 IS 1757-1 | Permanent |

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| Sr. No | Product/ Material to be tested | Parameter/ Type of test/ Properties Measured | Range of measurement/ detection limit | Method/ Technique | Facility |
|--------|---|--|---------------------------------------|---|-----------|
| 194 | | Bend Test | Qualitative Bend Dia.:0 to 150mm | ASTM E290 ISO 8491 ISO 7438 | Permanent |
| 195 | | Bend Test | Qualitative Bend Dia.: 0 to 150mm | ASTM A370 IS 1599 IS 1786 | Permanent |
| 196 | | Flattening Test | Qualitative | ISO 8492 ASTM A1016 ASTM A370 ASTM A450 ASTM A530 ASTM A999 IS 2328 | Permanent |
| 197 | | Crushing test | Qualitative | IS 3601 ASTM A370 | Permanent |
| 198 | Ferrous materials, alloys & Products | Drift Expansion Test | Qualitative | IS 2335 ISO 8493 | Permanent |
| 199 | | Flaring Test | Qualitative | ASTM A370 ASTM A1016 | Permanent |
| 200 | | Bend Test | Qualitative Bend Dia.: 0 to 150mm | ASTM E290 IS 1599 ISO 7438 | Permanent |
| 201 | Other Non-Ferrous Metals, Alloys & Products | Tensile Test - Ultimate Tensile Strength | 50 to 1000 Mpa | ASTM E8/8M IS 1608 (Part 1) ISO 6892-1 | Permanent |
| 202 | | Tensile Test - Yield Stress | 50 to 800 Mpa | ASTM E8/8M IS 1608 (Part 1) ISO 6892-1 | Permanent |
| 203 | | Tensile test - 0.2% Proof Stress | 50 to 800 Mpa | ASTM E8/8M IS 1608 (Part 1) ISO 6892-1 | Permanent |



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| Sr. No | Product/ Material to be tested | Parameter/ Type of test/ Properties Measured | Range of measurement/ detection limit | Method/ Technique | Facility |
|--------|---|--|---------------------------------------|--|--|
| 204 | | Tensile test - 0.5% Proof Stress | 50 to 800 Mpa | ASTM E8/8M IS 1608 (Part 1) ISO 6892-1 | Permanent |
| 205 | | Elongation | 1 to 95% | ASTM E8/8M IS 1608(Part 1) ISO 6892-1 | Permanent |
| 206 | Other Non-Ferrous Metals, Alloys & Products | Tensile test - Reduction in area | 1 to 95% | ASTM E8/8M IS 1608 (Part 1) ISO 6892-1 | Permanent |
| 207 | | Bend Test | Qualitative Bend Dia: 0 to 150mm | ASTM E290 IS 1599 | Permanent |
| 208 | | Rockwell Hardness Test (HRA) | 20 to 88 HRA | ASTM A370 ASTM E18 IS1586 (Part 1) ISO 6508-1 | Permanent/ Site |
| 209 | | Rockwell Hardness Test (HRC) | 20 to 70 HRC | ASTM A370 ASTM E18 IS 1586 (Part 1) ISO 6508-1 | Permanent/ Site |
| 210 | | Rockwell Hardness Test (HR15N) | 70 to 91 HR15N | ASTM A370 ASTM E18 IS 1586 (Part 1) ISO 6508-1 | Permanent |
| 211 | | Rockwell Hardness Test (HR30N) | 42 to 80 HR30N | ASTM A370 ASTM E18 IS 1586 (Part 1) ISO 6508-1 | Permanent |
| 212 | | Other Non-Ferrous Metals, Alloys & Products | Rockwell Hardness Test (HR45N) | 20 to 70 HR45N | ASTM A370 ASTM E18 IS 1586 (Part 1) ISO 6508-1 |



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| Sr. No | Product/ Material to be tested | Parameter/ Type of test/ Properties Measured | Range of measurement/ detection limit | Method/ Technique | Facility |
|--------|---|--|---|--|-----------|
| 213 | | Rockwell Hardness Test (HR15T) | 73 to 93 HR15T | ASTM A370 ASTM E18 IS 1586 (Part 1) ISO 6508-1 | Permanent |
| 214 | Other Non-Ferrous Metals, Alloys & Products | Rockwell Hardness Test (HR30T) | 43 to 82 HR30T | ASTM A370 ASTM E18 IS 1586 (Part 1) ISO 6508-1 | Permanent |
| 215 | | Rockwell Hardness Test (HR45T) | 12 to 72 HR45T | ASTM A370 ASTM E18 IS1586 (Part 1) ISO 6508-1 | Permanent |
| 216 | | Vickers Hardness Test (HV0.1) | 40 to 1500HV0.1 | ASTM E384 IS 1501(Part 1) ISO 6507-1 | Permanent |
| 217 | | Vickers Hardness Test (HV0.2) | 40 to 1500HV0.2 | ASTM E384 IS 1501(Part 1) ISO 6507-1 | Permanent |
| 218 | | Vickers Hardness Test (HV0.3) | 40 to 1500HV0.3 | ASTM E384 IS 1501(Part 1) ISO 6507-1 | Permanent |
| 219 | | Vickers Hardness Test (HV0.5) | 40 to 1500HV0.5 | ASTM E384 IS 1501 (Part 1) ISO 6507-1 | Permanent |
| 220 | | Vickers Hardness Test (HV1) | 40 to 1500HV1 | ASTM E384 ASTM E92 IS 1501 (Part 1) ISO 6507-1 | Permanent |
| 221 | Hardness Test on Weld (HV5) | 40 to 1500HV5 | ASTM E92 IS 1501(Part 1) ISO 6507-1 | Permanent | |



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| Sr. No | Product/ Material to be tested | Parameter/ Type of test/ Properties Measured | Range of measurement/ detection limit | Method/ Technique | Facility |
|--------|---|--|---------------------------------------|---|--------------------|
| 222 | Other Non-Ferrous Metals, Alloys & Products | Vickers Hardness Test (HV10) | 40 to 1500HV10 | ASTM E92 IS 1501 (Part 1) ISO 6507-1 | Permanent |
| 223 | | Vickers Hardness Test (HV30) | 40 to 1500HV30 | ASTM E92 IS 1501 (Part 1) ISO 6507-1 | Permanent |
| 224 | | Hardness Test on Weld (HV50) | 40 to 1500HV50 | ASTM E92 IS 1501(Part 1) ISO 6507-1 | Permanent |
| 225 | | Brinell Hardness Test HBW 2.5mm/187.5kgf | 50 to 700 HBW 2.5/187.5 | ASTM A370 IS 1500 (Part 1) ISO 6506-1 ASTM E10 | Permanent/ Site |
| 226 | Other Non-Ferrous Metals, Alloys & Products | Brinell Hardness Test (HBW 5mm/750kg) | 50 to 700 HBW 5/750 | ASTM A370 IS 1500 (Part 1) ISO 6506-1 ASTM E10 | Permanent/ Site |
| 227 | | Brinell Hardness Test (HBW 10mm/3000kgf) | 50 to 700 HBW 10/3000 | ASTM A370 IS 1500 (Part 1) ISO 6 506-1 ASTM E10 | Permanent |
| 228 | | Charpy V notch Impact Test Temp. Room to -196 degree centigrade) | 5 to 240 J | ASTM A370 ASTM E23 BS EN ISO 148-1 IS 1757-1 | Permanent |
| 229 | Other Non-Ferrous Metals, Alloys & Products | Bend Test | Qualitative Bend Dia: 0 to 150mm | ASTM E290 ISO 8491 ISO 7438 | Permanent |
| 230 | | Drift Expansion test | Qualitative | IS 2335 | Permanent |
| 231 | | Bend Test | Qualitative Bend Dia.: 0 to 150mm | ASTM E290 ISO 8491 - Tube | Permanent |

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| Sr. No | Product/ Material to be tested | Parameter/ Type of test/ Properties Measured | Range of measurement/ detection limit | Method/ Technique | Facility |
|--------|--|---|---------------------------------------|-------------------------------|-----------|
| | | | | bend full section ISO 7438 | |
| 232 | | UTS Elevated temperature tensile test 40°C to 1150°C | 50 to 1000 Mpa | ASTM E21 ISO 6892-2 | Permanent |
| 233 | Other Non-Ferrous Metals, Alloys & Products | Yield Strength Elevated temperature tensile test 40°C to 1150°C | 50 to 800 Mpa | ASTM E21 ISO 6892-2 | Permanent |
| 234 | | 0.2% Proof Stress Elevated temperature tensile test 40°C to 1150°C | 50 to 800 Mpa | ASTM E21 ISO 6892-2 | Permanent |
| 235 | | 0.5% Proof Stress Elevated temperature tensile test 40°C to 1150°C | 50 to 800 Mpa | ASTM E21 ISO 6892-2 | Permanent |
| 236 | Other Non-Ferrous Metals, Alloys & Products | % Elongation Elevated temperature tensile test 40°C to 1150°C | 1 to 95% | ASTM E21 ISO 6892-2 | Permanent |
| 237 | | Reduction in area Elevated temperature | 1 to 95% | ASTM E21 ISO 6892-2 | Permanent |

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| Sr. No | Product/ Material to be tested | Parameter/ Type of test/ Properties Measured | Range of measurement/ detection limit | Method/ Technique | Facility |
|--------|---|---|---------------------------------------|--|-----------|
| | | tensile test 40°C to 1150°C | | | |
| 238 | Other Non-Ferrous Metals, Alloys & Products | Tensile Test - Ultimate Tensile Strength | 100 to 1500 Mpa | IS 3600 (Part 4) IS 3600:(Part 1) IS 3600:(Part 3) IS 7307:(Part 1) IS 7310:(Part 1) IS 2825 ISO 4136 API Standard 1104 ASME Section IX IBR | Permanent |
| 239 | | Tensile Test - Yield Stress | 50 to 1000 Mpa | IS 3600 (Part 4) IS 3600: (Part 1) IS 3600:(Part 3) IS 7307 (Part 1) IS 7310: (Part 1) IS 2825 ISO 4136 API Standard 1104 ASME Section IX IBR | Permanent |
| 240 | Welds & Welded test specimens | Charpy V notch Impact Test Temp. Room to -196 degree centigrade) | 5 to 240 J | IS 3600:(Part 2) AWS D1.1 BS EN ISO 9016 IBR | Permanent |
| 241 | | Bend Test | Qualitative Bend Dia.:0 to 150mm | IS 3600 (Part 7) IS 3600: (Part 5) IS 7307 (Part 1) IS 7310:(Part 1) ASME Section IX BS EN ISO 5173+A1API Standard 1104 AWS D1.1 ASTM E190 IBR | Permanent |

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| Sr. No | Product/ Material to be tested | Parameter/ Type of test/ Properties Measured | Range of measurement/ detection limit | Method/ Technique | Facility |
|--------|--------------------------------|--|---------------------------------------|--|--|
| 242 | | Rockwell Hardness Test (HRA) | 20 to 88 HRA | ASTM A370 ASTM E18 IS 1586 (Part 1) ISO 6508-1 | Permanent/ Site |
| 243 | Welds & Welded test specimens | Rockwell Hardness Test (HRC) | 20 to 70 HRC | ASTM A370 ASTM E18 IS 1586 (Part 1) ISO 6508-1 | Permanent/ Site |
| 244 | | Rockwell Hardness Test (HR15N) | 70 to 91 HR15N | ASTM A370 ASTM E18 IS 1586 (Part 1) ISO 6508-1 | Permanent |
| 245 | | Rockwell Hardness Test (HR30N) | 42 to 80 HR30N | ASTM A370 ASTM E18 IS 1586 (Part 1) ISO 6508-1 | Permanent |
| 246 | | Rockwell Hardness Test (HR45N) | 20 to 70 HR45N | ASTM A370 ASTM E18 IS 1586 (Part 1) ISO 6508-1 | Permanent |
| 247 | | Welds & Welded test specimens | Rockwell Hardness Test (HR15T) | 73 to 93 HR15T | ASTM A370 ASTM E18 IS 1586 (Part 1) ISO 6508-1 |
| 248 | Rockwell Hardness Test (HR30T) | | 43 to 82 HR30T | ASTM A370 ASTM E18 IS 1586 (Part 1) ISO 6508-1 | Permanent |
| 249 | Rockwell Hardness Test (HR45T) | | 12 to 72 HR45T | ASTM A370 ASTM E18 IS 1586 (Part 1) ISO 6508-1 | Permanent |
| 250 | Vickers Hardness Test (HV0.1) | | 40 to 1500HV0.1 | ASTM E384 IS 1501 (Part 1) ISO 6507-1 | Permanent |
| 251 | Vickers Hardness Test (HV0.2) | | 40 to 1500HV0.2 | ASTM E384 IS 1501 (Part 1) ISO 6507-1 | Permanent |



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| Sr. No | Product/ Material to be tested | Parameter/ Type of test/ Properties Measured | Range of measurement/ detection limit | Method/ Technique | Facility |
|--------|--------------------------------|--|---------------------------------------|--|-----------------|
| 252 | | Vickers Hardness Test (HV0.3) | 40 to 1500HV0.3 | ASTM E384 IS 1501(Part 1) ISO 6507-1 | Permanent |
| 253 | | Vickers Hardness Test (HV0.5) | 40 to 1500HV0.5 | ASTM E384 IS 1501 (Part 1) ISO 6507-1 | Permanent |
| 254 | | Vickers Hardness Test (HV1) | 40 to 1500HV1 | ASTM E384 ASTM E92 IS 1501 (Part 1) ISO 6507-1 | Permanent |
| 255 | Welds & Welded test specimens | Hardness Test on Weld (HV5) | 40 to 1500HV5 | ASTM E92 IS 1501 (Part 1) ISO 6507-1 | Permanent |
| 256 | | Vickers Hardness Test (HV10) | 40 to 1500HV10 | ASTM E92 IS 1501 (Part 1) ISO 6507-1 | Permanent |
| 257 | | Vickers Hardness Test (HV30) | 40 to 1500HV30 | ASTM E92 IS 1501 (Part 1) ISO 6507-1 | Permanent |
| 258 | | Hardness Test on Weld (HV50) | 40 to 1500HV50 | ASTM E92 IS 1501 (Part 1) ISO 6507-1 | Permanent |
| 259 | | Brinell Hardness Test HBW 2.5mm/187.5kgf | 50 to 700 HBW 2.5/187.5 | ASTM A370 IS 1500 (Part 1) ISO 6506-1 ASTM E10 | Permanent/ Site |
| 260 | | Brinell Hardness Test (HBW 5mm/750kg) | 50 to 700 HBW 5/750 | ASTM A370 IS 1500 (Part 1) ISO 6506-1 ASTM E10 | Permanent/ Site |
| 261 | | Brinell Hardness Test (HBW 10mm/3000kgf) | 50 to 700 HBW 10/3000 | ASTM A370 IS 1500 (Part 1) | Permanent |

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Address: B/h Makarpura Railway Station, Near Darshnam Garden City, Maneja, (T.P No. 33 & F.P No. 55 B/s Rajanagar) Vadodara – 390013, Gujarat
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Amendment date: N/A

| Sr. No | Product/ Material to be tested | Parameter/ Type of test/ Properties Measured | Range of measurement/ detection limit | Method/ Technique | Facility |
|--------|--------------------------------|---|---------------------------------------|---|-----------|
| | | | | ISO 6506-1 ASTM E10 | |
| 262 | | Charpy V notch Impact Test Temp. Room to -196 degree centigrade) | 5 to 240 J | ASTM A370 ASTM E23 BS EN ISO 148-1 IS 1757-1 | Permanent |
| 263 | Welds & Welded test specimens | Bend Test | Qualitative Bend Dia: 0 to 150mm | ASTM E290 ISO 8491 ISO 7438 | Permanent |
| 264 | | Reverse Flattening test | Qualitative | ASTM A1016 ASTM A370 | Permanent |
| 265 | | Tensile Test - Ultimate Tensile Strength | 100 to 1500 Mpa | IS 3600 (Part 4) IS 3600:(Part 1) IS 3600:(Part 3) IS 7307 (Part 1) IS 7310: (Part 1) IS 2825 ISO 4136 API Standard 1104 ASME Section IX IBR | Permanent |
| 266 | Welds & Welded test specimens | Tensile Test - Yield Stress | 50 to 1000 Mpa | IS 3600 (Part 4) IS 3600:(Part 3) IS 7307 (Part 1) IS 7310:(Part 1) IS 2825 ISO 4136 API Standard 1104 ASME Section IX IBR | Permanent |
| 267 | | Charpy V notch Impact Test Temp. Room to -196 degree centigrade) | 5 to 240 J | IS 3600: (Part 2) AWS D1.1 BS EN ISO 9016 IBR | Permanent |
| 268 | | Bend Test | Qualitative Bend Dia: 0 to 150mm | IS 3600 (Part 7) IS 3600: (Part 5) | Permanent |



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| Sr. No | Product/ Material to be tested | Parameter/ Type of test/ Properties Measured | Range of measurement/ detection limit | Method/ Technique | Facility |
|--------|--|--|---------------------------------------|--|-----------|
| | | | | IS 7307 (Part 1) IS 7310: (Part 1) ASME Section IX BS EN ISO 5173+A1 API Standard 1104 AWS D1.1 ASTM E19 IBR ISO 5177 Side bend | |
| 269 | Welds & Welded test specimens | Fracture Test | Qualitative | IS 3600 (Part 8) IS 7307 (Part 1) ASME Section IX BS EN ISO 9017 IBR ISO 9017 | Permanent |
| 270 | | Nick Break Test | Qualitative | IS 3600 (Part 8) IBR IS 2825 ASME Section IX API Standard 1104 IBR | Permanent |
| 271 | Ferrous materials, alloys & Products (TMT Bar) | Mass per Meter | 0.9 to 9.9 kg | IS 1786 | Permanent |
| 272 | Metallic Coatings | Bend Test | Qualitative | ASTM B571 | Permanent |
| 273 | | Chisel Knife Test | Qualitative | | Permanent |
| 274 | | File Test | Qualitative | | Permanent |
| 275 | | Peel Test | Qualitative | | Permanent |
| 276 | | Impact Test | Qualitative | | Permanent |
| 277 | Wire Strand | 0.2% Proof Load | 80 KN to 300 KN | IS 1608 (Part 1) | Permanent |
| 278 | | Breaking Strength of Strand | 80 KN to 300 KN | IS 1608 (Part 1) | Permanent |
| 279 | | Elongation | 1 % to 10 % | IS 1608 (Part 1) | Permanent |

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| Sr. No | Product/ Material to be tested | Parameter/ Type of test/ Properties Measured | Range of measurement/ detection limit | Method/ Technique | Facility |
|---|--------------------------------------|--|---|---|-----------------|
| 280 | Reinforcement Steel - Rebar | Mass per Meter, Kg/m | 0.2 Kg/m to 10 Kg/m | IS 1786 | Permanent |
| 281 | | Re-bend Test | Qualitative | IS 1786 | Permanent |
| 282 | | Tensile Strength | 50 N/mm ² to 900 N/mm ² | IS 1608 (Part 1) | Permanent |
| 283 | | Yield Stress, N/mm ² | 50 N/mm ² to 800 N/mm ² | IS 1608 (Part 1) | Permanent |
| 284 | Reinforcement Steel – Coupler Test | Elongation at Maxi. Force | 1 % to 15 % | IS 16172 | Permanent |
| 285 | | Tensile Strength | 300 N/mm ² to 800 N/mm ² | IS 16172 | Permanent |
| 286 | Structural Steel | Bend Test | Qualitative: mandrel dia. 16,20,32,24, 30,36,40,175,225,240,320mm | IS 1599 | Permanent |
| Discipline: Mechanical, Group: Building, Infrastructure & Construction Material | | | | | |
| 287 | Structural Steel | Elongation, % | 1 % to 50 % | IS 1608 (Part 1) | Permanent |
| 288 | | Mass per Meter, Kg/m | 0.2 Kg/m to 100 Kg/m | IS 1786 | Permanent |
| 289 | | Tensile Strength | 0 N/mm ² to 999 N/mm ² | IS 1608 (Part 1) | Permanent |
| 290 | | Yield Stress, N/mm ² | 50 N/mm ² to 500 N/mm ² | IS 1608 (Part 1) | Permanent |
| 291 | Thermoplastics pipes & fitting | Wall thickness | Qualitative | IS 12235 | Permanent |
| Discipline: Mechanical, Group: Metallography Test | | | | | |
| 292 | Ferrous materials, alloys & Products | Microstructure Analysis | Qualitative Magnification 50X to 1000X | ASM Handbook Volume 9 ASTM E3 | Permanent/ Site |
| 293 | | Estimation of grain size by microscopic method | 1 to 10 | ASTM E112 ASTM E930 BS EN ISO 643 IS 4748 | Permanent/ Site |

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| Sr. No | Product/ Material to be tested | Parameter/ Type of test/ Properties Measured | Range of measurement/ detection limit | Method/ Technique | Facility |
|--------|--------------------------------------|---|--|--|-----------------|
| 294 | | Determination of Volume Fraction of Phases | 1 to 80% | ASTM E562 | Permanent/ Site |
| 295 | | Coating thickness by Microscopic Method | 1 to 2000 um | ASTM B487 IS 3203 | Permanent |
| 296 | | Effective Case depth by Micro hardness Traverse Method | 0.05 to 20.0mm | IS 6416 ISO 18203 | Permanent |
| 297 | Ferrous materials, alloys & Products | Effective Case depth by Microscopic Method | Qualitative Magnification 50X to 1000X | IS 6416 | Permanent |
| 298 | | Depth of Decarburized Layer | 1 to 2500um | ASTME1077 IS 6396 | Permanent |
| 299 | Ferrous materials, alloys & Products | Inclusion rating method A | Qualitative | ASTM E45 IS 4163 | Permanent |
| 300 | | Inclusion rating method D | Qualitative | ASTM E45 IS 4163 | Permanent/ Site |
| 301 | | Inclusion rating method K | Qualitative | DIN EN 10247 | Permanent |
| 302 | | Microstructure analysis of Cast Irons (White/Grey Iron Malleable Iron, Ductile Iron Including Nodular SG) | Qualitative Magnification 50X to 1000X | ASM Handbook Volume 9 ASTM A247 IS 7754 | Permanent |
| 303 | | Replica Microstructure | Qualitative | ASTM E1351 | Permanent/ Site |

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| Sr. No | Product/ Material to be tested | Parameter/ Type of test/ Properties Measured | Range of measurement/ detection limit | Method/ Technique | Facility |
|--------|---|--|---|---|--------------------|
| | | Examination Magnification. 50X to 1000X | | | |
| 304 | | Macro structure analysis | Qualitative Magnification. 7X to 45X | ASTM A604 ASTM E381 IS/ISO 13015 IS 11371 IS12037 ASTM E340 ASME Section IX | Permanent/ Site |
| 305 | Ferrous materials, alloys & Products | Microstructure Examination | Qualitative Magnification. 50X to 1000X | ISO 17781 | Permanent/ Site |
| 306 | | Standard Practice for Microteaching Metals and Alloys | Qualitative | ASTM E407 | Permanent/ Site |
| 307 | Thermal Sprayed Coated Products | Metallographic Preparation of Thermal Sprayed Coatings | Qualitative | ASTM E1920 | Permanent/ Site |
| 308 | Other Non-Ferrous Metals, Alloys & Products | Coating thickness by Microscopic Method | 1 to 2000um | ASTM B487 IS 3203 | Permanent |
| 309 | | Macrostructure analysis | Qualitative Magnification 7X to 45X | ASME Section IX ASTM E340 | Permanent/ Site |
| 310 | | Replica Microstructure Examination Magnification. 50X to 1000X | Qualitative | ASTM E1351 | Permanent/ Site |

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| Sr. No | Product/ Material to be tested | Parameter/ Type of test/ Properties Measured | Range of measurement/ detection limit | Method/ Technique | Facility |
|--------|---|--|---|------------------------------|-----------------|
| 311 | Other Non-Ferrous Metals, Alloys & Products | Microstructure Examination | Qualitative Magnification. 50X to 1000X | ISO 17781 | Permanent/ Site |
| 312 | | Standard Practice for micro etching Metals and Alloys | Qualitative | ASTM E407 | Permanent/ Site |
| 313 | | Microstructure Analysis | Qualitative Magnification. 50X to 1000X | ASM Handbook Vol. 9 | Permanent/ Site |
| 314 | | Determination of Volume Fraction of Phases | 1 to 80% | ASTM E562 | Permanent/ Site |
| 315 | Other Non-Ferrous Metals, Alloys & Products | Estimation of grain size by microscopic method | Grain size No. 1 to 10 | ASTM E112 ASTM E930 | Permanent |
| 316 | | Coating thickness by Microscopic Method | 1 to 2000um | ASTM B487 IS 3203 | Permanent |
| 317 | | Macrostructure analysis | Qualitative Magnification. 7X to 45X | ASME Section IX ASTM E340 | Permanent/ Site |
| 318 | | Replica Microstructure Examination Magnification. 50X to 1000X | Qualitative | ASTM E1351 | Permanent/ Site |
| 319 | Welds & Welded test specimens | Replica Microstructure Examination Magnification. 50X to 1000X | Qualitative | ASTM E1351 | Permanent/ Site |

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| Sr. No | Product/ Material to be tested | Parameter/ Type of test/ Properties Measured | Range of measurement/ detection limit | Method/ Technique | Facility |
|---|---|---|---|--|--------------------|
| 320 | | Macro Examination | Qualitative Magnification. 7X to 45X | BS EN ISO 5817 ASME Section IX ASTM E340 BS EN ISO 17639 IS 3600: (Part 9) IS 7307: (Part 1) IS 7310: (Part 1) | Permanent/ Site |
| 321 | | Microstructure analysis | Qualitative Magnification. 50X to 1000X | BS EN ISO 17639 IS 3600 (Part 9) ASM Handbook Vol 9 | Permanent/ Site |
| Discipline: Non-destructive Testing, Group: Metal | | | | | |
| 322 | Ferrous & Non-Ferrous Metals & Alloys (Casting, Forging, Bars, Plates, Billets, Ingots & Weld Joints) | Magnetic Particle Testing (Yoke, Fluorescent and nonfluorescent wet and dry) | Qualitative | ASME Section V (Article 7 and 25, SE 709), ASTM E709, IS 3073, API Standards | Permanent/ Site |
| 323 | | Magnetic Particle Testing (Bench & Power Source-Head Shot, Coil Shot, Central Conductor, Combination Method, Prod Method, Fluorescent and nonfluorescent wet and dry) | Qualitative | ASME Section V (Article 7 and 25, SE 709), ASTM E709, E1571, A962, IS 3073, API Standards | Permanent/ Site |
| 324 | | Dye penetrant test (Visible method, Fluorescent) | Qualitative | ASME Sec-V (Article 6, 24, SE 165) ASTM E165, IS 3658, | Permanent/ Site |

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| Sr. No | Product/ Material to be tested | Parameter/ Type of test/ Properties Measured | Range of measurement/ detection limit | Method/ Technique | Facility |
|--------|---|---|---------------------------------------|--|--------------------|
| | | | | ISO 3452-(Part 1), API Standards | |
| 325 | Ferrous & Non-Ferrous Metals & Alloys (Casting, Forging, Bars, Plates, Billets, Ingots & Weld Joints) | Ultrasonic Flaw Detection Test – Manual, Contact Method, Pulse Echo Method, | Qualitative | ASME Sec-V (Article 4, Article 5, SA 435, SA745, SA 273) ASTM A388, A578, A577 API Standards, ASME SB 548, IS 3664, A609) | Permanent/ Site |
| 326 | | Ultrasonic Thickness Test | 1 mm to 100 mm | ASTM E 797 M (Vol 3.03), IS 15468, API Standards | Permanent/ Site |
| 327 | | Visual Inspection Test | Qualitative | MSS-SP-55, CDS, API Standards, ASME Sec VIII-Div. 1 UG-76, UG-93 | Permanent/ Site |