National Accreditation Board for Testing and Calibration Laboratories

SCOPE OF ACCREDITATION

Laboratory Name : PLANT LABORATORY, BHARAT HEAVY ELECTRICALS LIMITED, BUILDING NO.3, HIGH PRESSURE BOILER PLANT, THIRUCHIRAPALLI, TAMIL NADU, INDIA

Accreditation Standard ISO/IEC 17025:2017

Certificate Number TC-8375 **Page No** 1 of 7

Validity 01/03/2022 to 29/02/2024 **Last Amended on** 29/04/2022

S.No	Discipline / Group	Materials or Products tested	Component, parameter or characteristic tested / Specific Test Performed / Tests or type of tests performed	Test Method Specification against which tests are performed and / or the techniques / equipment used
Permanent Facility				
1	CHEMICAL- METALS & ALLOYS	Carbon and Low alloy steels	Aluminium	ASTM E415
2	CHEMICAL- METALS & ALLOYS	Carbon and Low alloy steels	Carbon	ASTM E415
3	CHEMICAL- METALS & ALLOYS	Carbon and Low alloy steels	Chromium	ASTM E415
4	CHEMICAL- METALS & ALLOYS	Carbon and Low alloy steels	Cobalt	ASTM E415
5	CHEMICAL- METALS & ALLOYS	Carbon and Low alloy steels	Copper	ASTM E415
6	CHEMICAL- METALS & ALLOYS	Carbon and Low alloy steels	Manganese	ASTM E415
7	CHEMICAL- METALS & ALLOYS	Carbon and Low alloy steels	Molybdenum	ASTM E415
8	CHEMICAL- METALS & ALLOYS	Carbon and Low alloy steels	Nickel	ASTM E415
9	CHEMICAL- METALS & ALLOYS	Carbon and Low alloy steels	Phosphorous	ASTM E415
10	CHEMICAL- METALS & ALLOYS	Carbon and Low alloy steels	Silicon	ASTM E415
11	CHEMICAL- METALS & ALLOYS	Carbon and Low alloy steels	Sulphur	ASTM E415
12	CHEMICAL- METALS & ALLOYS	Carbon and Low alloy steels	Vanadium	ASTM E415
13	CHEMICAL- METALS & ALLOYS	Carbon in iron and steel	Carbon	ASTM E1019
14	CHEMICAL- METALS & ALLOYS	Nickel base alloys (Tubes & Pipes, Sheets, Claddings and Weld joints)	Carbon	ASTM E1019
15	CHEMICAL- METALS & ALLOYS	Nickel base alloys (Tubes & Pipes, Sheets, Claddings and Weld joints)	Carbon	ASTM E3047
16	CHEMICAL- METALS & ALLOYS	Nickel base alloys (Tubes & Pipes, Sheets, Claddings and Weld joints)	Chromium	ASTM E3047
17	CHEMICAL- METALS & ALLOYS	Nickel base alloys (Tubes & Pipes, Sheets, Claddings and Weld joints)	Iron	ASTM E3047
18	CHEMICAL- METALS & ALLOYS	Nickel base alloys (Tubes & Pipes, Sheets, Claddings and Weld joints)	Manganese	ASTM E3047

SCOPE OF ACCREDITATION

Laboratory Name : PLANT LABORATORY, BHARAT HEAVY ELECTRICALS LIMITED, BUILDING NO.3, HIGH PRESSURE BOILER PLANT, THIRUCHIRAPALLI, TAMIL NADU, INDIA

Accreditation Standard ISO/IEC 17025:2017

Certificate Number TC-8375 **Page No** 2 of 7

Validity 01/03/2022 to 29/02/2024 **Last Amended on** 29/04/2022

S.No	Discipline / Group	Materials or Products tested	Component, parameter or characteristic tested / Specific Test Performed / Tests or type of tests performed	Test Method Specification against which tests are performed and / or the techniques / equipment used
19	CHEMICAL- METALS & ALLOYS	Nickel base alloys (Tubes & Pipes, Sheets, Claddings and Weld joints)	Phosphorous	ASTM E3047
20	CHEMICAL- METALS & ALLOYS	Nickel base alloys (Tubes & Pipes, Sheets, Claddings and Weld joints)	Silicon	ASTM E3047
21	CHEMICAL- METALS & ALLOYS	Nickel base alloys (Tubes & Pipes, Sheets, Claddings and Weld joints)	Sulphur	ASTM E1019
22	CHEMICAL- METALS & ALLOYS	Nickel base alloys (Tubes & Pipes, Sheets, Claddings and Weld joints)	Sulphur	ASTM E3047
23	CHEMICAL- METALS & ALLOYS	Stainless steels	Carbon	ASTM E1086
24	CHEMICAL- METALS & ALLOYS	Stainless steels	Chromium	ASTM E1086
25	CHEMICAL- METALS & ALLOYS	Stainless steels	Copper	ASTM E1086
26	CHEMICAL- METALS & ALLOYS	Stainless steels	Manganese	ASTM E1086
27	CHEMICAL- METALS & ALLOYS	Stainless steels	Molybdenum	ASTM E1086
28	CHEMICAL- METALS & ALLOYS	Stainless steels	Nickel	ASTM E1086
29	CHEMICAL- METALS & ALLOYS	Stainless steels	Phosphorous	ASTM E1086
30	CHEMICAL- METALS & ALLOYS	Stainless steels	Silicon	ASTM E1086
31	CHEMICAL- METALS & ALLOYS	Stainless steels	Sulphur	ASTM E1086
32	CHEMICAL- METALS & ALLOYS	Sulphur in iron and steel	Sulphur	ASTM E1019
33	CHEMICAL- PAINTS & SURFACE COATING	Paints	Consistency (Flow Cup method)	IS 101 (Part 1 sec 5)
34	CHEMICAL- PAINTS & SURFACE COATING	Paints	Dry film thickness (on brushed paint coating)	IS 101 (Part 3 sec 2)
35	CHEMICAL- PAINTS & SURFACE COATING	Paints	Drying time	IS 101 (Part 3 sec 1)
36	CHEMICAL- PAINTS & SURFACE COATING	Paints	Iron oxide in pigment, % by mass	IS 6947 (Part 2)
37	CHEMICAL- PAINTS & SURFACE COATING	Paints	Mass per ten litres	IS 101 (Part 1 Sec 7)

SCOPE OF ACCREDITATION

Laboratory Name : PLANT LABORATORY, BHARAT HEAVY ELECTRICALS LIMITED, BUILDING NO.3, HIGH PRESSURE BOILER PLANT, THIRUCHIRAPALLI, TAMIL NADU, INDIA

Accreditation Standard ISO/IEC 17025:2017

Certificate Number TC-8375 **Page No** 3 of 7

Validity 01/03/2022 to 29/02/2024 **Last Amended on** 29/04/2022

S.No	Discipline / Group	Materials or Products tested	Component, parameter or characteristic tested / Specific Test Performed / Tests or type of tests performed	Test Method Specification against which tests are performed and / or the techniques / equipment used
38	CHEMICAL- PAINTS & SURFACE COATING	Paints	Pigment	IS 101 (Part 8 sec 2)
39	CHEMICAL- PAINTS & SURFACE COATING	Paints	Volatile matter	IS 101 (Part 2 sec 2)
40	CHEMICAL- PAINTS & SURFACE COATING	Paints	Volume solids	IS 101 (Part 8 sec 6)
41	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Austenitic stainless steel Casting and weld metals	Delta ferrite by magnetic method	AWS A4.2
42	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Ferrous and Non ferrous metals and its alloys	Bend test	ASTM E290
43	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Ferrous and non ferrous metals and its weld joints	Tensile test: % Elongation	ASME SEC IX
44	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Ferrous and Non ferrous metals and its weld joints	Tensile test: % Elongation	IBR
45	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Ferrous and Non ferrous metals and its weld joints	Tensile test: % Reduction in Area	ASME SEC IX
46	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Ferrous and non ferrous metals and its weld joints	Tensile test: % Reduction in area	IBR
47	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Ferrous and non ferrous metals and its weld joints	Tensile test: Ultimate tensile strength	ASME SEC IX
48	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Ferrous and non ferrous metals and its weld joints	Tensile test: Ultimate tensile strength	IBR
49	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Ferrous and non ferrous metals and its weld joints	Tensile test: Yield strength	ASME SEC IX
50	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Ferrous and Non ferrous weld joints	Bend test	ASME Sec IX
51	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Ferrous and Non ferrous weld joints	Bend test	AWS B4.0

SCOPE OF ACCREDITATION

Laboratory Name : PLANT LABORATORY, BHARAT HEAVY ELECTRICALS LIMITED, BUILDING NO.3, HIGH PRESSURE BOILER PLANT, THIRUCHIRAPALLI, TAMIL NADU, INDIA

Accreditation Standard ISO/IEC 17025:2017

Certificate Number TC-8375 **Page No** 4 of 7

Validity 01/03/2022 to 29/02/2024 **Last Amended on** 29/04/2022

S.No	Discipline / Group	Materials or Products tested	Component, parameter or characteristic tested / Specific Test Performed / Tests or type of tests performed	Test Method Specification against which tests are performed and / or the techniques / equipment used
52	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Ferrous materials alloys and ferrous welds	Drop weight test	ASTM E208
53	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Ferrous welds	Bend test	ASTM E190
54	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Steel plates, sections, tubes, pipes and weld joints	Tensile test: % Elongation	ASTM A370
55	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Steel plates, sections, tubes, pipes and weld joints	Brinell Hardness test (Load: 187.5 Kgs & Diameter: 2.5mm)	IS 1500 (Part 1)
56	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Steel plates, sections, tubes, pipes and weld joints	Brinell Hardness test (Load: 3000 Kgs Diameter: 10mm)	ASTM E10
57	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Steel plates, sections, tubes, pipes and weld joints	Bend test	ASTM A370
58	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Steel plates, sections, tubes, pipes and weld joints	Bend test	IBR
59	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Steel plates, sections, tubes, pipes and weld joints	Bend test	IS 1599
60	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Steel plates, sections, tubes, pipes and weld joints	Brinell Hardness test (Load: 3000 Kgs Diameter: 10mm)	IS 1500 (Part 1)
61	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Steel plates, sections, tubes, pipes and weld joints	Brinell Hardness test (Load: 187.5 Kgs & Diameter: 2.5mm)	ASTM E10
62	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Steel plates, sections, tubes, pipes and weld joints	Charpy Impact test	ASTM A370
63	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Steel plates, sections, tubes, pipes and weld joints	Micro Vickers Hardness Test (Load: 1000gf)	ASTM E384
64	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Steel plates, sections, tubes, pipes and weld joints	Micro Vickers Hardness Test (Load: 300gf)	ASTM E384
65	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Steel plates, sections, tubes, pipes and weld joints	Rockwell Hardness test (HRBW)	ASTM E18

SCOPE OF ACCREDITATION

Laboratory Name : PLANT LABORATORY, BHARAT HEAVY ELECTRICALS LIMITED, BUILDING NO.3, HIGH PRESSURE BOILER PLANT, THIRUCHIRAPALLI, TAMIL NADU, INDIA

Accreditation Standard ISO/IEC 17025:2017

Certificate Number TC-8375 **Page No** 5 of 7

Validity 01/03/2022 to 29/02/2024 **Last Amended on** 29/04/2022

S.No	Discipline / Group	Materials or Products tested	Component, parameter or characteristic tested / Specific Test Performed / Tests or type of tests performed	Test Method Specification against which tests are performed and / or the techniques / equipment used
66	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Steel plates, sections, tubes, pipes and weld joints	Rockwell Hardness test (HRBW)	IS 1586 (Part 1)
67	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Steel plates, sections, tubes, pipes and weld joints	Rockwell Hardness test (HRC)	ASTM E18
68	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Steel plates, sections, tubes, pipes and weld joints	Rockwell Hardness test (HRC)	IS 1586 (Part 1)
69	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Steel plates, sections, tubes, pipes and weld joints	Tensile test: % Elongation	ASTM E8
70	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Steel plates, sections, tubes, pipes and weld joints	Tensile test: % Elongation	IS 1608 (Part 1)
71	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Steel plates, sections, tubes, pipes and weld joints	Tensile test: % Reduction in area	ASTM A370
72	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Steel plates, sections, tubes, pipes and weld joints	Tensile test: % Reduction in area	ASTM E8
73	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Steel plates, sections, tubes, pipes and weld joints	Tensile test: % Reduction in area	AWS B4.0
74	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Steel plates, sections, tubes, pipes and weld joints	Tensile test: % Reduction in area	IS 1608 (Part 1)
75	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Steel plates, sections, tubes, pipes and weld joints	Tensile test: 0.2% Proof stress	ASTM A370
76	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Steel plates, sections, tubes, pipes and weld joints	Tensile test: 0.2% Proof stress	ASTM E8
77	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Steel plates, sections, tubes, pipes and weld joints	Tensile test: 0.2% Proof stress	AWS B4.0
78	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Steel plates, sections, tubes, pipes and weld joints	Tensile test: 0.2% Proof stress	IS 1608 (Part 1)
79	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Steel plates, sections, tubes, pipes and weld joints	Tensile test: Ultimate tensile strength	ASTM A370

SCOPE OF ACCREDITATION

Laboratory Name :	PLANT LABORATORY, BHARAT HEAVY ELECTRICALS LIMITED, BUILDING NO.3, HIGH PRESSURE BOILER PLANT, THIRUCHIRAPALLI, TAMIL NADU, INDIA		
Accreditation Standard	ISO/IEC 17025:2017		
Certificate Number	TC-8375	**Page No**	6 of 7
Validity	01/03/2022 to 29/02/2024	**Last Amended on**	29/04/2022

S.No	Discipline / Group	Materials or Products tested	Component, parameter or characteristic tested / Specific Test Performed / Tests or type of tests performed	Test Method Specification against which tests are performed and / or the techniques / equipment used
80	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Steel plates, sections, tubes, pipes and weld joints	Tensile test: Ultimate tensile strength	ASTM E8
81	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Steel plates, sections, tubes, pipes and weld joints	Tensile test: Ultimate tensile strength	AWS B4.0
82	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Steel plates, sections, tubes, pipes and weld joints	Tensile test: Ultimate tensile strength	IS 1608 (Part 1)
83	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Steel plates, sections, tubes, pipes and weld joints	Tensile test: Yield strength	ASTM A370
84	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Steel plates, sections, tubes, pipes and weld joints	Tensile test: Yield strength	ASTM E8
85	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Steel plates, sections, tubes, pipes and weld joints	Tensile test: Yield strength	AWS B4.0
86	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Steel plates, sections, tubes, pipes and weld joints	Tensile test: Yield strength	IS 1608 (Part 1)
87	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Steel plates, sections, tubes, pipes and weld joints	Vickers Hardness test (HV10)	ASTM E92
88	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Steel plates, sections, tubes, pipes and weld joints	Vickers Hardness test (HV10)	IS 1501 (Part 1)
89	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Steel plates, sections, tubes, pipes and weld joints	Vickers Hardness test (HV30)	ASTM E92
90	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Steel plates, sections, tubes, pipes and weld joints	Vickers Hardness test (HV30)	IS 1501 (Part 1)
91	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Steel plates, sections, tubes, pipes, weld joints	Charpy Impact test	ASTM E23
92	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Steel tubes and pipes	Flaring test	ASTM A370
93	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Steel tubes and pipes	Flaring test	IS 2335

SCOPE OF ACCREDITATION

Laboratory Name :	PLANT LABORATORY, BHARAT HEAVY ELECTRICALS LIMITED, BUILDING NO.3, HIGH PRESSURE BOILER PLANT, THIRUCHIRAPALLI, TAMIL NADU, INDIA		
Accreditation Standard	ISO/IEC 17025:2017		
Certificate Number	TC-8375	**Page No**	7 of 7
Validity	01/03/2022 to 29/02/2024	**Last Amended on**	29/04/2022

S.No	Discipline / Group	Materials or Products tested	Component, parameter or characteristic tested / Specific Test Performed / Tests or type of tests performed	Test Method Specification against which tests are performed and / or the techniques / equipment used
94	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Steel tubes, pipes and weld joints	Flattening test	ASTM A370
95	MECHANICAL-MECHANICAL PROPERTIES OF METALS	Steel tubes, pipes and weld joints	Flattening test	IS 2328
96	MECHANICAL-METALLOGRAPHY TEST	Steel, Nickel alloys & Titanium alloys: Plates, sections, tubes, pipes and weld joints	Replication metallography	ASTM E1351
97	MECHANICAL-METALLOGRAPHY TEST	Steels, Nickel alloys & Titanium alloys: Plates, sections, tubes, pipes and weld joints	Macro-structural analysis	ASME SEC IX
98	MECHANICAL-METALLOGRAPHY TEST	Steels, Nickel alloys & Titanium alloys: Plates, sections, tubes, pipes and weld joints	Micro-structural analysis	ASTM Handbook Vol 7