Schedule of Accreditation

Organisation Name	BHP Laboratories Ltd
Trading As	
INAB Reg No	5T
Contact Name	Niall Purcell
Address	New Road Thomondgate, Limerick, V94 P9X4
Contact Phone No	061-455399
Email	niallpurcell@bhp.ie
Website	
Accreditation Standard	EN ISO/IEC 17025 T
Standard Version	2017
Date of award of accreditation	04/11/2002

Scope Classification	Construction Materials Testing
Scope Classification	Mechanical Testing
Scope Classification	Biological and Veterinary Testing
Scope Classification	Chemical Testing
Services available to the public[1]	Yes

[1] Refer to document on interpreting INAB Scopes of Accreditation

Sites from which accredited services are delivered		
(the detail of the accredited services delivered at each site are on the Scope of Accreditation)		
	Name	**Address**
1	Head Office	Enterprise Centre, New Road Thomondgate, Limerick, V94 P9X4

Scope of Accreditation

Head Office

Biological and Veterinary Testing

Category: A

Biology/veterinary field - Tests	Test name	Technique	Matrix	Equipment	Std. reference	
803 Culture of organisms in liquid or agar based culture media with visual or instrument monitoring for growth - .01 Culture of bacteria	Enumeration of Coliforms	Defined Substrate Technology (DST)	Potable waters Industrial waters (treated, recirculating) Trade wastes, Swimming pools and spas, Environmental waters - Surface, River, Bore, Ground waters	Standard microbiology equipment IDEXX Colilert-18	IDEXX Colilert-18 based on ISO 9308-2:2012 BHP AC 222	
	Enumeration of E. coli		Potable waters Industrial waters (treated, recirculating) Trade wastes, Swimming pools and spas, Environmental waters	Standard microbiology equipment IDEXX Colilert-18	IDEXX Colilert-18 based on ISO 9308-2:2012 BHP AC 222	

			- Surface, River, Bore, Ground waters			
	Enumeration of Enterococci		Industrial waters (treated, recirculating) Trade wastes Environmental waters - Surface, River, Bore, Ground waters	Standard microbiology equipment IDEXX Enterolert E	IDEXX Enterolert E validated by IDEXX using ISO 13843:2017 comparable to ISO 7899-1:1998. AFNOR Cert # IDX 33/04-02/15. BHP AC 222	
			Potable waters	Standard microbiology equipment IDEXX Enterolert DW	IDEXX Enterolert DW validated by IDEXX using ISO 13843:2017 comparable to ISO 7899-2:2000. AFNOR Cert # IDX 33/03-10/13 BHP AC 222	
	TVC at 22 °C for 68 hours	TVC at 22 °C for 68 hours Pour Plate	Potable waters Environmental waters - Ground waters	Standard microbiology equipment	ISO 6222:1999 BHP AC 075	
	TVC at 36 °C for 44 hours	TVC at 36 °C for 44 hours Pour Plate	Potable waters Environmental waters - Ground waters	Standard microbiology equipment	ISO 6222:1999 BHP AC 075	

Head Office

Chemical Testing

Category: A

Chemistry Field - Tests	Test name	Analyte	Range of measurement	Matrix	Equipment/technique	Standard reference/SOP
766 Environmental testing (inc waters) - .01 Metal analysis	ICPMS Metals Trace	Aluminium	0.05 - 80.0 mg/L	Potable water	ICP-MS	Inhouse Method BHP AC 132
		Arsenic	0.0025 - 4.0 mg/L	Potable water	ICP-MS	Inhouse Method BHP AC 132
		Iron	0.05 - 80.0 mg/L	Potable water	ICP-MS	Inhouse Method BHP AC 132
		Lead	0.0025-4.0 mg/L	Potable water	ICP-MS	Inhouse Method BHP AC 132
		Manganese	0.0125-20.0 mg/L	Potable water	ICP-MS	Inhouse Method BHP AC 132
		Mercury	0.00025 - 0.4 mg/L	Potable water	ICP-MS	Inhouse Method BHP AC 132
	Metals Analysis	Aluminium	0.05 - 10 mg/L	Surface water	ICP-OES	Inhouse Method BHP AC 224
		Barium	0.01 - 10 mg/L	Surface water	ICP-OES	Inhouse Method BHP AC 224
		Boron	0.025 - 10 mg/L	Surface water	ICP-OES	Inhouse Method BHP AC 224
		Cadmium	0.005 - 1.0 mg/L	Surface water	ICP-OES	Inhouse Method BHP AC 224
		Calcium	10 - 500 mg/L	Surface water	ICP-OES	Inhouse Method BHP AC 224

Chromium	0.005 - 1.0 mg/L	Surface water	ICP-OES	Inhouse Method BHP AC 224
Cobalt	0.01 - 1.0 mg/L	Surface water	ICP-OES	Inhouse Method BHP AC 224
Copper	0.025 - 10 mg/L	Surface water	ICP-OES	Inhouse Method BHP AC 224
Iron	0.05 - 10 mg/L	Surface water	ICP-OES	Inhouse Method BHP AC 224
Lead	0.025 - 1.0 mg/L	Surface water	ICP-OES	Inhouse Method BHP AC 224
Magnesium	2.5 - 500 mg/L	Surface water	ICP-OES	Inhouse Method BHP AC 224
Manganese	0.01 - 10 mg/L	Surface water	ICP-OES	Inhouse Method BHP AC 224
Molybdenum	0.025 - 1.0 mg/L	Surface water	ICP-OES	Inhouse Method BHP AC 224
Nickel	0.01 - 5.0 mg/L	Surface water	ICP-OES	Inhouse Method BHP AC 224
Platinum	0.05 - 1.0 mg/L	Surface water	ICP-OES	Inhouse Method BHP AC 224
Potassium	5.0 - 500 mg/L	Surface water	ICP-OES	Inhouse Method BHP AC 224
Sodium	10 - 500 mg/L	Potable water	ICP-OES	Inhouse Method BHP AC 224
	10 - 500 mg/L	Surface water	ICP-OES	Inhouse Method BHP AC 224
Tin	0.05 - 1.0 mg/L	Surface water	ICP-OES	Inhouse Method BHP AC 224
Titanium	0.005 - 1.0 mg/L	Surface water	ICP-OES	Inhouse Method BHP AC 224
Vanadium	0.01 - 1.0 mg/L	Surface water	ICP-OES	Inhouse Method BHP AC 224

		Zinc	0.025 - 5.0 mg/L	Surface water	ICP-OES	Inhouse Method BHP AC 224
766 Environmental testing (inc waters) - .02 Biochemical oxygen demand	BOD	BOD	1.0 - 3500 mgO2/L	Surface, Bore, Trade Waste	DO Meter	APHA 5210 B Methods 24th Ed
766 Environmental testing (inc waters) - .03 Chemical oxygen demand	Chemical Oxygen Demand	Chemical Oxygen Demand	15 - 150 mg/L	Other waters - Surface waters	Spectrophotometer	Inhouse Method BHP AC 006
	Chemical Oxygen Demend		15 - 8200 mg/L	Trade Waste	Spectrophotometer	Inhouse Method BHP AC 006
	Dissolved Organic Carbon (DOC) by Combustion Method	Dissolved Organic Carbon (DOC)	2.0 - 80.0 mg/L	Potable and Trade Water	IL 550 TOC-TN Analyser	APHA 5310 B Methods 24th Ed
	Total Organic Carbon (TOC) by Combustion Method	Total Organic Carbon	2.0 - 80.0 mg/L	Potable and Trade Water	IL 550 TOC-TN Analyser	APHA 5310 B Methods 24th Ed
766 Environmental testing (inc waters) - .04 Organic	Detergents (MBAS)	Detergents (MBAS)	0.3 – 2 mg/L	Trade Waste	Spectrophotometer	APHA 5540 C Methods 24th Ed
766 Environmental testing (inc waters) - .05 Inorganic	Alkalinity	Alkalinity as CaCO3	5 - 500 mg/l	Potable, surface, bore (ground) waters & waste waters	Spectrophotometric analysis using discrete analyser	In house test method BHP/AC/095
	Ammonia	Total Ammonia as N	0.05 - 250 mg/l	Potable, surface, bore (ground) waters & waste waters	Spectrophotometric analysis using discrete analyser	In house test method BHP/AC/095
		Total Ammoniacal Nitrogen (as N)	0.05 - 250 mg/l	Potable, surface, bore (ground) waters & waste waters	Spectrophotometric analysis using discrete analyser	In house test method BHP/AC/095
	Ammonia (Calculated)	Ionised Ammonium (as N)	0.05 - 250 mg/l	Potable, surface, bore (ground) waters & waste waters	Spectrophotometric analysis using discrete analyser	In house test method BHP/AC/095

		Ionised Ammonium (as NH_4)	0.064 - 325 mg/l	Potable, surface, bore (ground) waters & waste waters	Spectrophotometric analysis using discrete analyser	In house test method BHP/AC/095
		Total Ammonia as NH4	0.065 – 325 mg/l	Potable, surface, bore (ground) waters & waste waters	Spectrophotometric analysis using discrete analyser	In house test method BHP/AC/095
		Total Ammonia as NH3	0.061 – 305 mg/l	Potable, surface, bore (ground) waters & waste waters	Spectrophotometric analysis using discrete analyser	In house test method BHP/AC/095
		Unionised Ammonia (as N)	0.0002 – 1 mg/l	Potable, surface, bore (ground) waters & waste waters	Spectrophotometric analysis using discrete analyser	In house test method BHP/AC/095
		Unionised Ammonia (as NH_3)	0.0002 – 1.2 mg/l	Potable, surface, bore (ground) waters & waste waters	Spectrophotometric analysis using discrete analyser	In house test method BHP/AC/095
		Unionised Ammoniacal Nitrogen (as N)	0.0002 – 1 mg/l	potable, surface, bore (ground) waters & waste waters	Spectrophotometric analysis using discrete analyser	In house test method BHP/AC/095
		Unionised Ammoniacal Nitrogen (as NH_3)	0.0002 – 1.2 mg/l	Potable, surface, bore (ground) waters & waste waters	Spectrophotometric analysis using discrete analyser	In house test method BHP/AC/095
	Anions (Dissolved)	Bromate (as BrO3) (Non Regulated)	0.1-10.0 mg/L	potable, surface, bore (ground) waters & waste waters	Ion Chromatography using using Dionex Inuvion Core IC.	APHA 4110 B Methods 24th Ed
		Bromide (as Br^-)	0.1-50.0 mg/L	potable, surface, bore (ground) waters & waste waters	Ion Chromatography using using Dionex Inuvion Core IC.	APHA 4110 B Methods 24th Ed

Chlorate (as ClO3)	0.1-10.0 mg/L	potable, surface, bore (ground) waters & waste waters	Ion Chromatography using using Dionex Inuvion Core IC.	APHA 4110 B Methods 24th Ed
Chloride (as Cl^-)	1.0-250.0 mg/L	potable, surface, bore (ground) waters & waste waters	Ion Chromatography using using Dionex Inuvion Core IC.	APHA 4110 B Methods 24th Ed
Fluoride (as F^-)	0.05-10.0 mg/L	potable, surface, bore (ground) waters & waste waters	Ion Chromatography using using Dionex Inuvion Core IC.	APHA 4110 B Methods 24th Ed
Nitrate (as NO_3)	0.5-200.0 mg/L	potable, surface, bore (ground) waters & waste waters	Ion Chromatography using using Dionex Inuvion Core IC.	APHA 4110 B Methods 24th Ed
Nitrate (as NO_3-N)	0.11-45 mg/L	potable, surface, bore (ground) waters & waste waters	Ion Chromatography using using Dionex Inuvion Core IC.	APHA 4110 B Methods 24th Ed
Nitrite (as NO_2)	0.1-50.0 mg/L	potable, surface, bore (ground) waters & waste waters	Ion Chromatography using using Dionex Inuvion Core IC.	APHA 4110 B Methods 24th Ed
Nitrite (as NO_2-N)	0.03-15.2 mg/L	potable, surface, bore (ground) waters & waste waters	Ion Chromatography using using Dionex Inuvion Core IC.	APHA 4110 B Methods 24th Ed
OrthoPhosphate (as P)	0.13-65 mg/L	potable, surface, bore (ground) waters & waste waters	Ion Chromatography using using Dionex Inuvion Core IC.	APHA 4110 B Methods 24th Ed
OrthoPhosphate (as PO_4)	0.4-200.0 mg/L	potable, surface, bore (ground) waters & waste waters	Ion Chromatography using using Dionex Inuvion Core IC.	APHA 4110 B Methods 24th Ed

		Phosphate (as P)	0.13-65 mg/L	potable, surface, bore (ground) waters & waste waters	Ion Chromatography using using Dionex Inuvion Core IC.	APHA 4110 B Methods 24th Ed
		Phosphate (as P_2O_5)	0.3-150 mg/L	potable, surface, bore (ground) waters & waste waters	Ion Chromatography using using Dionex Inuvion Core IC.	APHA 4110 B Methods 24th Ed
		Phosphate (as PO_4)	0.4-200.0 mg/L	potable, surface, bore (ground) waters & waste waters	Ion Chromatography using using Dionex Inuvion Core IC.	APHA 4110 B Methods 24th Ed
		Sulphate (as SO_4^{2-})	1.0-250.0 mg/L	potable, surface, bore (ground) waters & waste waters	Ion Chromatography using using Dionex Inuvion Core IC.	APHA 4110 B Methods 24th Ed
		Total Oxidised Nitrogen (as N)	0.15-61 mg/L	potable, surface, bore (ground) waters & waste waters	Ion Chromatography using using Dionex Inuvion Core IC.	APHA 4110 B Methods 24th Ed
	Chloride	Chloride	10 - 500 mg/l	Potable, surface, bore (ground) waters & waste waters	Spectrophotometric analysis using discrete analyser	In house test method BHP/AC/095
	Chromium VI	Chromium VI	0.003 – 0.1 mg/l	Potable, surface, bore (ground) waters & waste waters	Spectrophotometric analysis using discrete analyser	In house test method BHP/AC/095
	Colour (Apparent)	Colour (Apparent)	5 – 200 Pt/Co	Potable, surface, bore (ground) waters & waste waters	Spectrophotometric analysis using discrete analyser	In house test method BHP/AC/095
	Colour (True)	Colour (True)	5 – 200 Pt/Co	Potable, surface, bore (ground) waters & waste waters	Spectrophotometric analysis using discrete analyser	In house test method BHP/AC/095

Determination of dust deposition	Determination of dust deposition	N/A	Atmospheric dust fall	Bergerhoff method VDI 4320 Part 2	Bergerhoff method VDI 4320 Part 2 SOP BHP/AC/017
Hardness	Hardness as CaCO3	20 - 600 mg/l	Potable, surface, bore (ground) waters & waste waters	Spectrophotometric analysis using discrete analyser	In house test method BHP/AC/095
Hexavalent Chromium	Hexavalent Chromium (Cr6+)	0.003 – 0.1 mg/l	Potable, surface, bore (ground) waters & waste waters	Spectrophotometric analysis using discrete analyser	In house test method BHP/AC/095
Molybdate Reactive Phosphorus (as P)	Molybdate Reactive Phosphorus (as P)	0.01 – 50 mg/l	potable, surface, bore (ground) waters & waste waters	Spectrophotometric analysis using discrete analyser	In house test method BHP/AC/095
Molybdate Reactive Phosphorus (as PO_4) (Calculated)	Molybdate Reactive Phosphorus (as PO_4)	0.0306 – 153 mg/l	Potable, surface, bore (ground) waters & waste waters	Spectrophotometric analysis using discrete analyser	In house test method BHP/AC/095
Orthophosphate	Orthophosphate as P	0.01 – 50 mg/l	Potable, surface, bore (ground) waters & waste waters	Spectrophotometric analysis using discrete analyser	In house test method BHP/AC/095
Orthophosphate (Calculated)	Orthophosphate as PO4	0.0306 – 153 mg/l	Potable, surface, bore (ground) waters & waste waters	Spectrophotometric analysis using discrete analyser	In house test method BHP/AC/095
Silica	Silica as SiO2	5 – 50 mg/l	Potable, surface, bore (ground) waters & waste waters	Spectrophotometric analysis using discrete analyser	In house test method BHP/AC/095
Sulphate	Sulphate as SO4	10 – 500 mg/l	Potable, surface, bore (ground) waters & waste waters	Spectrophotometric analysis using discrete analyser	In house test method BHP/AC/095

	Total Dissolved Solids	Total Dissolved Solids	100 - 1000mg/L	Potable & Bore	Gravimetry	APHA 2540 C Methods 24th Ed
	Turbidity	Turbidity	0.5-200 NTU	Water for Potable and domestic purposes. Bore Waters, Surface Waters and Waste Waters.	Electrochemistry using Robotics System	APHA 2130 B Methods 24th Ed
767 Physical test/measurement - .01 pH	pH	pH	pH 4 to 10	Water for Potable and domestic purposes. Bore Waters, Surface Waters and Waste Waters.	Electrochemistry using Robotics System	APHA 4500-H+ B Methods 24th Ed
767 Physical test/measurement - .02 Conductivity	Conductivity	Conductivity at 20°C	45-9,000 µS/cm at 20°C	Water for Potable and domestic purposes. Bore Waters, Surface Waters and Waste Waters.	Nephelometer using Robotics and calculation	APHA 2510 B Methods 24th Ed
		Conductivity at 25°C	50-10,000 µS/cm	Water for Potable and domestic purposes. Bore Waters, Surface Waters and Waste Waters.	Nephelometer using Robotics	APHA 2510 B Methods 24th Ed
767 Physical test/measurement - .03 Suspended Solids	Total Suspended Solids	Total suspended solids	5 - 8050 mg/L (Trade Waste) 5 - 1000 mg/L (Surface Water)	Trade Waste Surface Water	Gravimetry using standard methods	APHA 2540 D Methods 24th Ed

Head Office

Construction Materials Testing

Category: A

Construction material/product - Tests	Matrix/methodology (where applicable if not insert n/a)	Equipment/technique	Range of measurement (where applicable)	Standard reference/SOP		
212 Concrete - 212.10 Curing Specimens for Strength Tests	Concrete			EN 12390-2:2019 EN 12390-1:2021		
212 Concrete - 212.11 Compressive Strength Tests (Cubes and Cylinders)	Concrete cubes and cores			BS 1881-116:1983 EN 12390-3:2019 EN 12390-1:2021 EN 12504-1:2019&AC:2020		
212 Concrete - 212.12 Tensile Splitting Test	Concrete cylinders			EN 12390-6:2023		
212 Concrete - 212.13 Density	Concrete			EN 12390-7:2019 & AC:2020		
212 Concrete - 212.16 Flexural Strength	Concrete Beams			EN 12390-5:2019		
214 Soils (Site Tests) - .01 Resitivity	Soils for Civil Engineering Purposes			BS 1377-3: 2018+A1:2021		
214 Soils (Site Tests) - .02 Redox Potential				BS 1377-3: 2018+A1:2021		
215 Aggregates (Chemical Tests) - .01 Water soluble chloride salts	Water Soluble Chloride	Titration	0.001–0.015% w/w as Chloride	EN 1744-1:2009+A1:2012 Volhard method		
	Water Soluble Chloride in Aggregates	Ion Chromatography using using Dionex Inuvion Core IC	0.001-0.015 % w/w	EN 1744-1:2009+A1:2012 Mohr method	In house test method BHP/AC/019	

215 Aggregates (Chemical Tests) - .02 Water soluble sulphates	Water Soluble Sulphate	1:2 water extraction SO4 by ICPOES	0.006-0.06% w/w as SO4 0.03–0.3 g/l as SO4	In House ICP Method		
215 Aggregates (Chemical Tests) - .03 Total sulphur content	Total Sulphur	Combustion Analyser	0.01-2.0% w/w as SO4	EN 1744-1:2009+A1:2012 Combustion Method		
215 Aggregates (Chemical Tests) - .05 Acid soluble sulphides	Acid Soluble Sulphate	Acid Digestion with ICPOES	0.01-3.0% w/w as SO4	In House ICP Method		
215 Aggregates (Chemical Tests) - .12 Aggregate crushing value (ACV)	Aggregates	Particle size 10mm and greater Loads from 6 to 600KN		BS 812-110:1990		
215 Aggregates (Chemical Tests) - .13 Ten percent fines value		Dry and Soaked		BS 812-111:1990		
215 Aggregates (Chemical Tests) - .99 Other tests	Aggregates - Methylene Blue			BS EN 933-9: 2022		
	Humus Content	Comparison by eye	Presence or Absence	EN 1744-1:2009+A1:2012		
216 Aggregates - .04 Particle size distribution	Aggregates	Dry sieving		EN 933-1:2012		
		Washing and sieving		EN 933-1:2012 EN 12697-2:2015 + A1 2019		
216 Aggregates - .05 Flakiness index				EN 933-3:2012		
216 Aggregates - .11 Microdeval co-efficient		Micro Deval		EN 1097-1: 2023		
216 Aggregates - .12 Railway ballast: Micro deval co-efficient		Railyway Ballast (Micro Deval)		EN 1097-1: 2023 Annex A		

216 Aggregates - .13 Resistance to fragmentation		Los Angles Method		EN 1097-2:2020		
216 Aggregates - .14 Railway ballast: Resistance to fragmentation		Railway Ballast (L.A)		EN 1097-2: 2020		
216 Aggregates - .18 Particle density and water absorption		Pyknometer 0.063mm - 31.5mm		EN 1097-6:2022		
216 Aggregates - .20 Polished stone value	Polished Stone Value			EN1097-8: 2020		
216 Aggregates - .21 Aggregate abrasion value	Aggregate Abrasion Value			EN1097-8:2020 Annex A		
216 Aggregates - .23 Magnesium sulphate	Aggregates	Soundness Test		EN 1367-2:2009		
216 Aggregates - .24 Drying shrinkage	Drying Shrinkage			EN1367-4: 2008		
216 Aggregates - .99 Other tests	Aggregates	Moisture content		EN 1097-5:2008		
217 Bituminous materials - .15 Binder content	Bitumen	By ignition		EN 12697-39:2020		
217 Bituminous materials - .19 Maximum density		Volumetric procedure		EN 12697-5:2018		
217 Bituminous materials - .28 Bulk density				EN 12697-6:2020		
217 Bituminous materials - .31 Voids conent				EN 12697-8:2018 Clause 4		
218 Soils for Geotechnical Investigation & Testing:Lab Testing of Soils. Soils (Chemical Tests) - .01 Water content	Soils for Civil Engineering Purposes			BS EN 17892-1:2014+A1:2022		

		Water Content		ASTM D2216-19		
219 Soils for civil engineering purposes - .02 Moisture content				BS 1377-2:2022		
219 Soils for civil engineering purposes - .04 Liquid limit		Cone penetrometer		BS 1377-2:2022 EN 17892-12:2018&A1:2021A2&2022		
219 Soils for civil engineering purposes - .05 Plastic limit				BS 1377-2:2022 EN 17892-12:2018&A1:2021A2&2022		
219 Soils for civil engineering purposes - .06 Plasticity index				BS 1377-2:2022 EN 17892-12:2018&A1:2021A2&2022		
219 Soils for civil engineering purposes - .10 Particle density		Particle Density		BS 1377-2:2022		
219 Soils for civil engineering purposes - .11 Particle size distribution		Wet sieving and dry sieving Sedimentation by pipette	2-63µm	BS 1377-2:2022 EN 17892-4:2016		
219 Soils for civil engineering purposes - .13 Dry density/moisture content relationship		2.5KG&4.5KG Rammer Vibrating Hammer Method		BS 1377-2:2022		
219 Soils for civil engineering purposes - .15 Moisture condition value (MCV)		MCV		BS 1377-2:2022		
219 Soils for civil engineering purposes - .17 California bearing ratio		Loads 0.3 - 50KN 2.5KG Rammer 4.5KG Rammer Vibrating Hammer		BS 1377-2:2022		

219 Soils for civil engineering purposes - .25 Shear strength	Soils - Undrained Shear Strength Triaxial			BS 1377-2:2022 EN 17892-8:2018		
219 Soils for civil engineering purposes - .26 Shear strength effective stresss	Soils for Civil Engineering Purposes	Large Shear Box		BS1377-2: 2022 EN17892-10 2018		
		Small shearbox		BS 1377-2 2022 EN 17892-10		
219 Soils for civil engineering purposes - .99 Other tests	pH	pH Meter	4.0-10.0	BS 1377-3:2018+A12021		
222 Rock - .03 Slake Durability and Swelling	N/A			ASTM D4644-16		
222 Rock - .06 Point Load Test	Rock	Point Load		ISRM Suggested Method 1985		
222 Rock - .99 Other Tests	Soil and Rock	Thermal Conductivity		ASTM D5334-22		
229 Construction Products - .01 Dimensions	Determination of Dimensions of Masonry Units			EN772-16: 2011		
	Determination of Moisture Movement of Blocks			EN772-14: 2002		
229 Construction Products - .02 Compressive Strength	Compressive Strength of Masonry Unit		100 - 3000KN	EN772-1: 2011 + A1 2015		
			100 - 3000KN	IS 20: 1995 Appendix F		
229 Construction Products - .03 Water Absorption	Determination of water absorption of concrete specimens cored from a structure or a precast component			BS 1881-122:2011 & A1:2020		

	Determination of Water Absorption of Masonry Units			EN772-11: 2011		
229 Construction Products - .10 Dry Bulk Desnity	Determination of Net and Gross Dry Density of Masonry Units			EN772-13: 2000		
229 Construction Products - .58 Mortar	Mortar	Flexural & Compressive Strength		EN 1015-11:2019		
229 Construction Products - .59 Screed	Screed			EN 13892-2:2002		

Head Office

Construction Materials Testing

Category: B

Construction material/product - Tests	Matrix/methodology (where applicable if not insert n/a)	Equipment/technique	Range of measurement (where applicable)	Standard reference/SOP		
213 Reinforced Concrete - 213.22 Visual and Hammer Survey	N/A			EN 12504-2:2021		
214 Soils (Site Tests) - .04 In-situ Density Tests		Nuclear Density		BS 1377-9 Clause 2.5 1990		
		Sand Replacement Density		BS 1377-9 Clause 2.2 1990		
214 Soils (Site Tests) - .06 In-situ Vertical Deformation and Strength Tests (PLT)		Plate Loading Test 0-800 KN		BS 1377-9:1990		
214 Soils (Site Tests) - .07 Equivalent CBR Value determined from PLT & DCP Data				NRA HD 25-26/2010 and HD 25/1994 (withdrawn), NRA SHW 600 series		
220 Highways/roads and other paved surfaces including airfields - .06 Pavement surface macrotexture depth		Volumetric patch		EN 13036-1:2010		
220 Highways/roads and other paved surfaces including airfields - .10 Slid/skid resistence - pendulum test		Pendulum Test		EN 13036-4:2011		

Head Office

Mechanical Testing

Category: A

Product categories - Tests	Test detail	Product detail	Range of Measurement	Equipment/Technique	Std. Ref & SOP	
1101 Metals and metal products - .11 Tension tests on tests pieces	Tension tests at ambient temperature in the range of 0.5Kn to 600Kn with strain rate control, including yield stress and proof stress tests	Metals and metal products	0.5Kn to 600Kn	Tensile testers MECH EM0241 MECH EM0167 /Load,Extension	EN ISO 6892-1:2019 ASTM A370-2022 24A	
1101 Metals and metal products - .23 Vickers hardness tests	Hardness test Vickers H.V 10 to Vickers H.V 30		Vickers H.V 10 to Vickers H.V 30	Hardness tester MECH EM0158 /Hardness test	EN ISO 6507-1:2023	
1101 Metals and metal products - .31 Impact tests	Charpy V-notch impact test (max 300J) Ambient to -60ºC		Max 300J Ambient to -60ºC	Impact tester MECH EM0036 /Impact test	EN ISO 148-1:2016	
1101 Metals and metal products - .58 Bend tests	Bend tests up to 180º at ambient temperature and examination of fracture		180º at ambient temperature	Tensile tester MECH EM0033 Rollers & formers /Compression test	EN ISO 7438:2020 ASTM A370-2022 24A	
1103 Welds and welded test specimens - .11 Tension tests	Tension tests at ambient temperature in the range of 0.5Kn to 600Kn with strain rate control, including yield stress and proof stress tests	Welds and welded test specimens	0.5Kn to 600Kn	Tensile testers MECH EM0241 MECH EM0167 /Load, Extension	EN ISO 5178:2019 EN ISO 4136:2011 ASME IX 2023 EN ISO 15614-1:2017 EN ISO 15614-2:2005	

1103 Welds and welded test specimens - .21 Hardness tests	Hardness test Vickers H.V 10 to Vickers H.V 30		Vickers H.V 10 to Vickers H.V 30	Hardness tester MECH EM0158 /Hardness test	EN ISO 9015-1:2011 EN ISO 15614-1:2017 EN ISO 15614-2:2005	
1103 Welds and welded test specimens - .31 Impact tests	Charpy V-notch impact test (max 300J) Ambient to -60ºC		Max 300J Ambient to -60ºC	Impact tester MECH EM0036 /Impact test	EN ISO 9016:2011 EN ISO 15614-1:2017 EN ISO 15614-2:2005	
1103 Welds and welded test specimens - .58 Bend tests	Bend tests up to 180º at ambient temperature and examination of fracture		180º at ambient temperature	Tensile tester MECH EM0033 Rollers & formers /Compression test	EN ISO 5173:2023 ASME IX-2023 EN ISO 15614-1:2017 EN ISO 15614-2:2005	
1103 Welds and welded test specimens - .61 Fillet-break tests	Fillet-Break Tests fracture and examination			Tensile tester MECH EM0033 /Compression test	EN ISO 9017:2018 ASME IX 2023 EN ISO 15614-1:2017 EN ISO 15614-2:2005	
1103 Welds and welded test specimens - .91 Macroscopic examinations	Macroscopic examinations - Qualitative examination		1-100KN	Digital Microscope MECH EM0033 /Visual examination	ISO 17639:2003 EN ISO 15614-1:2017 EN ISO 15614-2:2005 ASME IX 2023	
1129 Plastic and related products - .11 Tension tests	Assessment of toughness-butt fusion welds (tensile test) Determination of tensile strength-butt fusion joints	Plastics and related products	1-100KN	Tensile testers MECH EM0033 MECH EM0167 /Load, Extension	SOP/MTI/318 based on WIS 4-32-08 2016 SOP/MTI/318 based on ISO 13953:2001	
1129 Plastic and related products - .12 Tear tests	Assessment of toughness-electrofusion welds Peel testing of electrofusion welds		1-100KN	Tensile tester MECH EM0167 /Visual examination	BHP/MTI/335 based on ISO 13594:1997 and WIS 4-32-08:2016	
	Decohesion tear test on saddle joints		1-100KN	Tensile tester MECH EM0033 /Visual examination	SOP/MTI/336 based on ISO 13956:2010 and WIS 4-32-08 2016	

1129 Plastic and related products - .20 Compression tests	Crush decohesion of electrofusion welds		1-100KN	Tensile tester MECH EM0167 /Visual examination	BHP/MTI/337 based on ISO 13955:1997	
1190 Microstructural tests on ferrous materials - .99 Other tests	Evaluation of microstructure	Microstructural tests on ferrous materials and non ferrous materials		Metallographic Microscope MECH EM0195 /Visual examination	BHP/MTI/012 based on ISO 17639:2003	