

Schedule of Accreditation



Organisation Name	BHP Laboratories Ltd
Trading As	
INAB Reg No	5T
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Accreditation Standard	ISO 17025 T
Date Initially Awarded	04/11/2002
Scope Classification	Construction materials testing
Scope Classification	Mechanical 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

Chemical Testing

Category: A

Chemistry Field - Tests	Test name	Analyte	Range of measurement	Matrix	Equipment/technique	Standard reference/SOP
756 Drugs and pharmaceuticals - .02 Quantification of pharmaceutical samples	Elemental Impurities in Drug Products - Calcium Carbonate	Arsenic, Cadmium, Mercury, Lead	N/A	Raw Materials	ICP-MS/In-house method based on USP<233>	
766 Environmental testing (inc waters) - .01 Metal analysis	Metals Analysis	Aluminium, Boron, Barium, Calcium, Cadmium, Cobalt, Chromium, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Platinum, Potassium, Silver, Sodium, Tin, Titanium, Vanadium, Zinc.	N/A	Surface water	ICP-OES/In-house method based on APHA 3120 B	
766 Environmental testing (inc waters) - .02 Biochemical oxygen demand	BOD	BOD	N/A	Surface, Bore, Trade Waste	In-house method based on APHA 5210 B	
766 Environmental testing (inc waters) - .03 Chemical oxygen demand	Chemical Oxygen Demand	Chemical Oxygen Demand	15 - 150 mg/L	Other waters - Surface waters	Wet chemistry using standard methods	SOP BHP/AC/006 Based on APHA Methods 23rd ed 2017
	Chemical Oxygen Demend		15-1500 mg/L	Trade Wastes	Wet chemistry using standard methods	SOP BHP/AC/006 Based on APHA Methods 23rd ed 2017
766 Environmental testing (inc waters) - .04 Organic	Detergents (MBAS)	Detergents (MBAS)	N/A	Trade Waste	in-house method based on APHA 5540 C	
766 Environmental testing (inc waters) - .05 Inorganic	Alkalinity	Alkalinity as CaCO3	5-500 mg/L	Waters for potable and domestic puposes Trade Wastes Bore Waters Other waters - Surface waters	Colorimetric Ref: 3000 using discrete analyser	SOP BHP/AC/095 Based on APHA Methods 23rd ed 2017
	Ammonia	Ammonia as N	0.1-50 mg/L	Waters for potable and domestic puposes	Colorimetric Ref: 3000 using discrete analyser	SOP BHP/AC/095 Based on APHA Methods

			Trade Wastes Bore Waters Other waters - Surface waters		23rd ed 2017
	Ammonia as NH ₄	0.013-64.5 mg/L	Waters for potable and domestic puposes Trade Wastes Bore Waters Other waters - Surface waters	Colorimetric Ref: 3000 using discrete analyser	SOP BHP/AC/095 Based on APHA Methods 23rd ed 2017
Anions (dissolved)	Bromide	0.05-1 ppm	Waters for potable and domestic puposes Trade Wastes Bore Waters Other waters - Surface waters	Ion Chromatography using Metrohm 882 Compact IC Plus	SOP BHP/AC/019 Based on APHA Methods 23rd ed 2017
	Chloride	1-100 ppm	Waters for potable and domestic puposes Trade Wastes Bore Waters Other waters - Surface waters	Ion Chromatography using Metrohm 882 Compact IC Plus	SOP BHP/AC/019 Based on APHA Methods 23rd ed 2017
	Fluoride	0.05-1 ppm	Waters for potable and domestic puposes Trade Wastes Bore Waters Other waters - Surface waters	Ion Chromatography using Metrohm 882 Compact IC Plus	SOP BHP/AC/019 Based on APHA Methods 23rd ed 2017
	Nitrate (as NO ₃)	0.5-50 ppm	Waters for potable and domestic puposes Trade Wastes Bore Waters Other waters - Surface waters	Ion Chromatography using Metrohm 882 Compact IC Plus	SOP BHP/AC/019 Based on APHA Methods 23rd ed 2017
	Phosphate as PO ₄	0.2-10 ppm	Waters for potable and domestic puposes Trade Wastes Bore Waters Other waters - Surface waters	Ion Chromatography using Metrohm 882 Compact IC Plus	SOP BHP/AC/019 Based on APHA Methods 23rd ed 2017
	Sulphate	1-100 ppm	Waters for potable and domestic puposes Trade Wastes Bore Waters Other waters - Surface waters	Ion Chromatography using Metrohm 882 Compact IC Plus	SOP BHP/AC/019 Based on APHA Methods 23rd ed 2017
Chloride	Chloride	10-500 mg/L	Trade Wastes Bore Waters Other waters - Surface waters	Colorimetric Ref: 3000 using discrete analyser	SOP BHP/AC/095 Based on APHA Methods 23rd ed 2017

	Hardness	Hardness as CaCO ₃	20-400 mg/L	Waters for potable and domestic purposes Trade Wastes Bore Waters Other waters - Surface waters	Colorimetric Ref: 3000 using discrete analyser	SOP BHP/AC/095 Based on APHA Methods 23rd ed 2017
	Orthophosphate	Orthophosphate as P	0.01-2 mg/L	Waters for potable and domestic purposes Trade Wastes Bore Waters Other waters - Surface waters	Colorimetric Ref: 3000 using discrete analyser	SOP BHP/AC/095 Based on APHA Methods 23rd ed 2017
	Silica	Silica	5-20 mg/L	Waters for potable and domestic purposes Trade Wastes Bore Waters Other waters - Surface waters	Colorimetric Ref: 3000 using discrete analyser	SOP BHP/AC/095 Based on APHA Methods 23rd ed 2017
	Sulphate	Sulphate	10-1000 mg/L	Trade Wastes Bore Waters Other waters - Surface waters	Colorimetric Ref: 3000 using discrete analyser	SOP BHP/AC/095 Based on APHA Methods 23rd ed 2017
	Total Dissolved Solids	Total Dissolved Solids	N/A	Potable & Bore	In-house method based on APHA 2540 C	
	Total Nitrogen	Total Nitrogen	0.75-15 mg/L	Trade Wastes	Colorimetric Ref: 3000 using discrete analyser	SOP BHP/AC/095 Based on APHA Methods 23rd ed 2017
	Total Phosphorus	Total Phosphorus	0.075-10 mg/L	Trade Wastes	Colorimetric Ref: 3000 using discrete analyser	SOP BHP/AC/095 Based on APHA Methods 23rd ed 2017
767 Physical test/measurement - .01 pH	pH	pH	4-10	Waters for potable and domestic purposes Trade Wastes Bore Waters Other waters - Surface waters	Electrochemistry using standard methods	SOP BHP/AC/009 Based on APHA Methods 23rd ed 2017
767 Physical test/measurement - .02 Conductivity	Conductivity	Conductivity at 20 °C	45-13560 µS/cm	Waters for potable and domestic purposes	Electrochemistry using standard methods	SOP BHP/AC/008 Based on APHA Methods 23rd ed 2017
		Conductivity at 25 °C	50-15000 µS/cm	Trade Wastes Bore Waters Other waters - Surface waters	Electrochemistry using standard methods	SOP BHP/AC/008 Based on APHA Methods 23rd ed 2017
767 Physical test/measurement - .03 Suspended Solids	Total Suspended Solids	Total suspended solids	5-1000 mg/L	Trade Wastes Other waters - Surface waters	Gravimetry using standard methods	SOP BHP/AC/012 Based on APHA Methods

						23rd ed 2017
797 Miscellaneous materials and products - .02 Physical tests	Colour	Colour	5-500 CU	Waters for potable and domestic puposes Trade Wastes Bore Waters Other waters - Surface waters	Colorimetric Ref: 3000 using discrete analyser	SOP BHP/AC/095 Based on APHA Methods 23rd ed 2017
	Determination of dust deposition	Determination of dust deposition	N/A	Atmospheric dust fall	Bergerhoff method VDI 4320 Part 2	SOP BHP/AC/017
797 Miscellaneous materials and products - .03 Other tests	Enumeration of Coliforms	Total coliforms	N/A	Potable waters Industrial waters (treated, recirculating) Trade wastes Swimming pools and spas Environmental waters - Surface, River, Bore, Ground waters	IDEXX Colilert-18 based on ISO 9308-2:2012	SOP BHP/AC/020
	Enumeration of E. coli	E. coli	N/A	Potable waters Industrial waters (treated, recirculating) Trade wastes Swimming pools and spas Environmental waters - Surface, River, Bore, Ground waters	IDEXX Colilert-18 based on ISO 9308-2:2012	SOP BHP/AC/020
	Enumeration of Enterococci	Enterococci	N/A	Industrial waters (treated, recirculating) Trade wastes Environmental waters - Surface, River, Bore, Ground waters	IDEXX Enterolert E validated by IDEXX using ISO 17944:2004 and ISO 1348:2000	SOP BHP/AC/078
			N/A	Potable waters	IDEXX Enterolert DW validated by IDEXX using ISO 17944:2004 and ISO 1348:2000	SOP BHP/AC/078
	TVC at 22 °C for 68 hours	TVC at 22 °C for 68 hours	N/A	Potable waters Environmental waters - Ground waters	Pour plate based on ISO 6222:1999	SOP BHP/AC/075
	TVC at 36 °C for 44 hours	TVC at 36 °C for 44 hours	N/A	Potable waters Environmental waters - Ground waters	Pour plate based on ISO 6222:1999	SOP BHP/AC/075

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	N/A			BS 1881-116 1983 BS 1881-111 1983 EN 12390-2 :2009 EN 12390-3:2009 EN 12390-1:2012 EN 12504-1:2009 EN 12390-3:2009 EN 12390-7:2009		
212 Concrete - 212.11 Compressive Strength Tests (Cubes and Cylinders)				BS 1881-116 1983 BS 1881-111 1983 EN 12390-2:2009 EN 12390-3:2009 EN 12390-1:2012 EN 12504-1:2009 EN 12390-3:2009 EN 12390-7:2009		
212 Concrete - 212.12 Tensile Splitting Test				EN 12390-6:2009		
212 Concrete - 212.13 Density				BS 1881-114:1983 EN 12390-7:2009 EN 12390-1:2012 EN 12390-3:2009		
212 Concrete - 212.16 Flexural Strength				EN 12390-5:2009		
215 Aggregates (Chemical Tests) - .12 Aggregate crushing value (ACV)	Aggregates	Particle size 10mm and greater Loads from 6 to 600KN		BS 812-111:1990		
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 933-9:2009 + A1:2013		
216 Aggregates - .04 Particle size distribution	Aggregates	Dry sieving		EN 933-1:2012		
		Washing and sieving		EN 933-1:2012 EN 12697-2:2002 + A1 2007		
			EN 933-3:2012			
216 Aggregates - .05 Flakiness index						
216 Aggregates - .13 Resistance to fragmentation		Los Angles Method		EN 1097-2:2010		
216 Aggregates - .18 Particle density and water absorption		Pyknometer 0.063mm - 31.5mm		EN 1097-6:2013		

216 Aggregates - .23 Magnesium sulphate		Soundness Test		EN 1367-2:2009			
216 Aggregates - .99 Other tests		Moisture content		EN 1097-5:2008			
217 Bituminous materials - .15 Binder content	Bitumen	By ignition		EN 12697-39:2012			
217 Bituminous materials - .19 Maximum density		Volumetric procedure		EN 12697-5:2009			
217 Bituminous materials - .28 Bulk density				EN 12697-6:2012			
217 Bituminous materials - .31 Voids content				EN 12697-8:2003 Clause 4			
219 Soils for civil engineering purposes - .02 Moisture content	Soils for civil engineering purposes			BS 1377-2:1990			
219 Soils for civil engineering purposes - .04 Liquid limit		Cone penetrometer		BS 1377-2:1990			
219 Soils for civil engineering purposes - .05 Plastic limit				BS 1377-2:1990			
219 Soils for civil engineering purposes - .06 Plasticity index				BS 1377-2:1990			
219 Soils for civil engineering purposes - .11 Particle size distribution		Wet sieving and dry sieving Sedimentation by pipette	2-63µm	BS 1377-2:1990 BS 1377-2:1990 clause 9.4			
219 Soils for civil engineering purposes - .13 Dry density/moisture content relationship		2.5KG Rammer Vibrating Hammer Method Nuclear Density		BS 1377-4:1990 section 3 BS 1377-9 Clause 2.5			
219 Soils for civil engineering purposes - .15 Moisture condition value (MCV)				BS 1377-4:1990			
219 Soils for civil engineering purposes - .17 California bearing ratio		Loads 0.3 - 50KN 2.5KG Rammer 4.5KG Rammer Vibrating Hammer		BS 1377-4:1990			
219 Soils for civil engineering purposes - .25 Shear strength		Soils - Undrained Shear Strength Triaxial			BS 1377-7:1990		
222 Rock - .03 Slake Durability and Swelling		N/A			ASTM D4644-16		
222 Rock - .06 Point Load Test				ISRM Point Load Test			
229 Construction Products - .03 Water Absorption					BS 1881-122:2011		

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 12504-2:2012		
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, NRA SHW 600 series		
220 Highways/roads and other paved surfaces including airfields - .05 Texture depth		Sand patch method		BS 598-105:2000 Clause 5		
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 resistance - pendulum test	Pendulum Test		EN 13036-4:2011			

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		EN ISO 6892-1:2016 ASTM A370-16	
1101 Metals and metal products - .23 Vickers hardness tests	Vickers H.V 30 Vickers H.V 10				EN ISO 6507-1:2006	
1101 Metals and metal products - .31 Impact tests	Charpy V-notch impact test (max 300J) Ambient to -60°C		(max 300J) Ambient to -60°C		EN ISO 148-1:2010	
1101 Metals and metal products - .58 Bend tests	Bend tests up to 180° at ambient temperature and examination of fracture		180° at ambient temperature		EN ISO 7438:2016 ASTM A370-16	
1103 Welds and welded test specimens - .11 Tension tests	Tension tests as classification no 1101.01	Welds and welded test specimens			EN ISO 5178:2011 EN ISO 4136:2011 ASME IX 2015 EN ISO 15614-1:2017 EN ISO 15614-2:2005	
1103 Welds and welded test specimens - .21 Hardness tests	Hardness tests as classification no 1101.23				EN ISO 9015-1:2011 EN ISO 15614-1:2017 EN ISO 15614-2:2005	
1103 Welds and welded test specimens - .31 Impact tests	Impact tests as classification no 1101.31				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 as classification no 1101.58				EN ISO 5173:2010 ASME IX-2015 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				EN ISO 9017:2001 ASME IX 2015 EN ISO 15614-1:2017 EN ISO 15614-	

					2:2005	
1103 Welds and welded test specimens - .81 Corrosion tests	Corrosion tests - Intergranular corrosion test				EN ISO 3651- 2:1998 A money penny strauss test	
1103 Welds and welded test specimens - .91 Macroscopic examinations	Macroscopic examinations - Qualitative examination		1-100KN		ISO 17639:2003 EN ISO 15614- 1:2017 EN ISO 15614- 2:2005	
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		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 Decohesion tear test on saddle joints		1-100KN		SOP/MTI/322 based on WIS 4-32-08 2016 clause 6.3 BHP/MTI/335 based on ISO 13594:1997 and WIS 4-32- 08:2016	
1129 Plastic and related products - .20 Compression tests	Crush decohesion of electrofusion welds				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			BHP/MTI/012 based on ISO 17639:2003	