

# Schedule of Accreditation



Organisation Name	BHP Laboratories Ltd
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	Biological and veterinary testing
Scope Classification	Chemical testing
Services available to the public <sup>1</sup>	Yes

<sup>1</sup> 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	
820 Miscellaneous	Presence or absence of drugs	Confirmation: Preperation, extraction and analysis by GC-MS	Equine Urine and plasma (flexible scope)	GCMS	BHP/RL/05,07,10,11	
			Equine Urine and plasma (flexible scope)	GC-MS	BHP/RL/05,07,10,11	
			Equine Urine and plasma (flexible scope)	GC-MS	BHP/RL/11	
		Confirmation: Preperation, extraction and analysis by GC-MSMS	Equine Urine and plasma (flexible scope)	GC-MSMS	BHP/RL/05, 46, 10, 11, 47	
		Follow up: Preperation, extraction and anlysis by GC-MS	Equine Urine and plasma (flexible scope)	GC-MS	BHP/RL/F27	
		Screening and confirmation: Preperation, extraction and analysis by LCMS	Equine Urine and plasma (flexible scope)	LCMS	BHP/RL/04, 05, 08, 10, 11, 23	
		Screening: Preperation, extraction and analysis by ELISA	Equine Urine and plasma (flexible scope)	ELISA	BHP/RL/04,09	
		Screening: Preperation, extraction and analysis by GC-MS	Equine Urine and plasma (flexible scope)	GCMS	BHP/RL/04,05,07	
		Screening: Preperation, extraction and analysis by GC-MSMS	Equine Urine and plasma (flexible scope)	GC-MSMS	BHP/RL/04,05,46,47	
	Quantitative analysis for drugs	Quantification: Preperation, extraction and analysis by GCMS	Equine Urine and plasma (flexible scope)	GC-MS	BHP/RL/04, 05, 07, 10, 12, 12.3, 12.4	
			Equine Urine and plasma (flexible scope)	LCMS	BHP/RL/04, 05, 07, 12.4	



Chemical Testing

Category: A

Chemistry Field - Tests	Test name	Analyte	Range of measurement	Matrix	Equipment/technique	Standard reference/SOP	
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	
	Chemical Oxygen Demend		15-1500 mg/L	Trade Wastes	Wet chemistry using standard methods	SOP BHP/AC/006	
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	
	Ammonia	Ammonia as N	0.1-50 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	
		Ammonia as NH <sub>4</sub>	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	
	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
		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
		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
		Nitrate (as NO <sub>3</sub> )		0.5-50 ppm	Waters for	Ion Chromatography	SOP

				potable and domestic purposes Trade Wastes Bore Waters Other waters - Surface waters	using Metrohm 882 Compact IC Plus	BHP/AC/019
	Phosphate as PO <sub>4</sub>	0.2-10 ppm		Waters for potable and domestic purposes Trade Wastes Bore Waters Other waters - Surface waters	Ion Chromatography using Metrohm 882 Compact IC Plus	SOP BHP/AC/019
	Sulphate	1-100 ppm		Waters for potable and domestic purposes Trade Wastes Bore Waters Other waters - Surface waters	Ion Chromatography using Metrohm 882 Compact IC Plus	SOP BHP/AC/019
Chloride	Chloride	10-500 mg/L		Trade Wastes Bore Waters Other waters - Surface waters	Colorimetric Ref: 3000 using discrete analyser	SOP BHP/AC/095
Hardness	Hardness as CaCO <sub>3</sub>	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
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
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
Sulphate	Sulphate	10-1000 mg/L		Trade Wastes Bore Waters Other waters - Surface waters	Colorimetric Ref: 3000 using discrete analyser	SOP BHP/AC/095
Total Nitrogen	Total Nitrogen	0.75-15 mg/L		Trade Wastes	Colorimetric Ref: 3000 using discrete analyser	SOP BHP/AC/095
Total Phosphorus	Total Phosphorus	0.075-10 mg/L		Trade Wastes	Colorimetric Ref: 3000 using discrete analyser	SOP BHP/AC/095
767 Physical test/measurement - .01 pH	pH	pH	4-10	Waters for potable and domestic	Electrochemistry using standard methods	SOP BHP/AC/009

				puposes Trade Wastes Bore Waters Other waters - Surface waters		
767 Physical test/measurement - .02 Conductivity	Conductivity	Conductivity at 20 °C	45-13560 µS/cm	Waters for potable and domestic puposes	Electrochemistry using standard methods	SOP BHP/AC/008
		Conductivity at 25 °C	50-15000 µS/cm	Trade Wastes Bore Waters Other waters - Surface waters	Electrochemistry using standard methods	SOP BHP/AC/008
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
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
	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
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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		
216 Aggregates - .04 Particle size distribution				Dry sieving	EN 933-1 2012		
				Washing and sieving	EN 933-1 2012 EN 12697-2 2002 + A1 2007		
216 Aggregates - .05 Flakiness index					EN 933-3 2012		
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				Moisture content	EN 1097-5 2008		



Other tests							
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			
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 Loadig 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 (cleavage test) 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 SOP/MTI/336 based on ISO 13956:2010	
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	