


# Schedule of Accreditation

issued by

## United Kingdom Accreditation Service

21 - 47 High Street, Feltham, Middlesex, TW13 4UN, UK

 <p><b>0001</b></p> <p>Accredited to <b>ISO/IEC 17025:2005</b></p>	<p><b>Environmental Scientifics Group Limited</b> trading as <b>ESG</b></p> <p><b>Issue No: 067    Issue date: 14 May 2012</b></p>	
	<p><b>Acrewood Way</b> <b>Hatfield Road</b> <b>St Albans</b> <b>Hertfordshire</b> <b>AL4 0JY</b></p>	<p><b>Contact: Mr K J Brooks</b> <b>Tel: +44 (0)1622 632172</b> <b>Fax: +44 (0)1622 631358</b> <b>E-Mail: kevn.brooks@esg.co.uk</b> <b>Website: www.esg.co.uk</b></p>
<p><b>Testing performed by the Organisation at the locations specified below</b></p>		

Environmental Scientifics Group Limited, trading as ESG, is accredited for flexible scopes that enable it to:

- 1) Establish site laboratories to conduct the construction materials testing and sampling activities that are indicated in the table below with the location code X. These site laboratories are set up in accordance with the Documented In-House Procedure AP28.
- 2) Update currently accredited test methods to the latest versions of those test methods using the procedures in Documented In-House Procedure AP29.
- 3) Transfer currently accredited test methods between the accredited locations listed on this schedule using the procedures in Documented In-House Procedure AP29.

### Locations covered by the Organisation and their relevant activities

#### Laboratory locations:

Location details	Local contact	Activity
<p>Castleford:</p> <p>Lumley Street Castleford West Yorkshire WF10 5LB</p>	<p>Mr D Swindells</p> <p>Tel: +44 (0)1977 518908 Fax: +44 (0)1977 553612 E-Mail: darren.swindells@esg.co.uk</p>	<p>Construction materials and analytical chemistry laboratory testing and construction materials site testing</p>
<p>Daventry:</p> <p>2 Newton Close Drayton Fields Industrial Estate Daventry Northamptonshire NN11 8RR</p>	<p>Mr D Berrill</p> <p>Tel: +44 (0)1327 703828 Fax: +44 (0)1327 300154 E-Mail: darren.berrill@esg.co.uk</p>	<p>Construction materials laboratory and site testing</p>
<p>Dorset:</p> <p>The River Laboratory Farmhouse Church Lane East Stoke Wareham Dorset BH20 6BB</p>	<p>Mr J F Booth</p> <p>Tel: +44 (0)1929 463091 Fax: +44 (0)1929 463719 E-Mail: john.booth@esg.co.uk</p>	<p>Construction materials laboratory and site testing</p>



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Location details	Local contact	Activity
Glasgow:  Queenslie Court 139 Summerlee Street Glasgow G33 4DB	Mr K McIntosh  Tel: +44 (0)141 774 6271 Fax: +44 (0)141 774 9280 E-Mail: kenny.mcintosh@esg.co.uk	Construction materials laboratory and site testing
Maidstone:  The Oasts Newnham Court Bearsted Road Maidstone ME14 5LH	Mr M Weaver  Tel: +44 (0)1622 632172 Fax: +44 (0)1622 631358 E-Mail: mark.weaver@esg.co.uk	Construction materials laboratory testing
Newcastle:  Crawcrook Quarry Clara Vale Road Crawcrook Tyne & Wear NE40 3UL	Mr M Taylor  Tel: +44 (0)191 413 6389 Fax: +44 (0)191 413 6437 E-Mail: mark.taylor@esg.co.uk	Construction materials laboratory testing
Oldbury:  Unit 1 Littlefields Way Oldbury West Midlands B69 2BT	Mr D Partridge  Tel: +44 (0)121 552 0653 E-mail: dave.partridge@esg.co.uk	Site testing only of concrete structures and paved surfaces
St Albans:  Acrewood Way Hatfield Road St Albans Hertfordshire AL4 0JY	Mr T Norman  Tel: + 44 (0)1727 816702 Fax: +44 (0)1727 816700 E-Mail: tim.norman@esg.co.uk	Metallurgical, slate and analytical chemistry laboratory testing
Stockton-on-Tees:  Wass Way Durham Lane Industrial Park Eaglescliffe Stockton-on-Tees TS16 0RG	Mr M Ellis  Tel: +44 (0)1642 790800 Fax: +44 (0)1642 790848 E-Mail: martyn.ellis@esg.co.uk	Site testing only of concrete and steel piles and foundations



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<b>Location details</b>	<b>Local contact</b>	<b>Activity</b>
Uxbridge:  Unit 11 Cowley Mill Trading Estate Longbridge Way Uxbridge Middlesex UB8 2YG	Mr N Oliver  Tel: +44 (0)1895 235235 Fax: +44 (0)1895 274265 E-Mail: nick.oliver@esg.co.uk	Construction materials laboratory and site testing
Warrington:  29 Rufford Court Woolston Warrington WA1 4RF	Mr P Haddock  Tel: +44 (0)1925 286220 Fax: +44 (0)1925 838135 E-Mail: paul.haddock@esg.co.uk	Construction materials laboratory and site testing
Wolverhampton:  i54 Site Laboratory % BAM Nuttall Ltd i54 Advance Earthworks Package i54 Development Site Wobaston Road Wolverhampton WV9 5GB	Mr I Hummerston  Tel: +44 (0)7967 713470 E-Mail: ian.hummerston@esg.co.uk	Construction materials laboratory and site testing

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DETAIL OF ACCREDITATION

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
<b>Castleford Laboratory</b>			
AGGREGATES	Particle density and water absorption for aggregate between 40 mm and 5 mm	BS 812-2:1995	Lab
	Bulk density and calculation of voids and bulking of aggregate	BS 812-2:1995	Lab
	Aggregate crushing value - particle size 10 mm and greater <i>(loads from 10 to 2500 kN)</i>	BS 812-110:1990	Lab
	Ten per cent fines value - dry - particle size 10 mm and greater <i>(loads from 10 to 3000 kN)</i>	BS 812-111:1990	Lab
	Ten per cent fines value - soaked - particle size 10 mm and greater <i>(loads from 10 to 3000 kN)</i>	BS 812-111:1990	Lab
	Ten per cent fines value - dry - particle size smaller than 10 mm <i>(loads from 50 to 2500 kN)</i>	BS 812-111:1990	Lab
	Ten per cent fines value - soaked - particle size smaller than 10 mm <i>(loads from 50 to 2500 kN)</i>	BS 812-111:1990	Lab
	Aggregate impact value - dry	BS 812-112:1990	Lab
	Uniformity coefficient (221 2217)	BS 6100-2.2.1:1992	Lab
Sampling stockpiles of fine aggregates by hand	BS EN 932-1:1997	Site	



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
AGGREGATES	Sampling stockpiles of coarse aggregates by hand	BS EN 932-1:1997	Site
	Particle size distribution - sieving method	BS EN 933-1:1997	Lab
	Flakiness index	BS EN 933-3:1997	Lab
	Constituents of coarse recycled aggregate	BS EN 933-11:2009	Lab
	Resistance to fragmentation by the Los Angeles test method	BS EN 1097-2:2010	Lab
	Loose bulk density and voids	BS EN 1097-3:1998	Lab
	Compacted dry bulk density	BS EN 1097-3:1998	Lab
	Loose bulk density with damp aggregates	BS EN 1097-3:1998	Lab
	Water content	BS EN 1097-5:2008	Lab
	Particle density and water absorption - pyknometer method for aggregate particles between 4 mm and 31,5 mm	BS EN 1097-6:2000	Lab
	Magnesium sulfate test - aggregate particles between 0,30 mm and 28 mm	BS EN 1367-2:2009	Lab
	Water-soluble chloride salts using the Volhard method (Reference method)	BS EN 1744-1:2009	Lab
	Water soluble sulfates in natural and manufactured aggregates	BS EN 1744-1:2009	Lab
Total sulfur content by high temperature combustion (Alternative method)	BS EN 1744-1:2009 using ELTRA CS-800 analyser	Lab	



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AGGREGATES	Acid soluble sulfates	BS EN 1744-1:2009	Lab
ASH and ASSOCIATED MATERIALS	Total carbon	Documented In-House Method No CAS CHEM 80 using ELTRA CS-800 analyser	Lab
BITUMINOUS MIXTURES for roads and other paved areas	Temperature of bituminous mixtures in the hopper of a paver	BS 598-109:1990	Site
	Temperature of bituminous mixtures in laid-but-not-rolled material	BS 598-109:1990	Site
	Sampling from the material around the augers of the paver	BS EN 12697-27:2001	Site
	Sampling coated chippings from stockpiles	BS EN 12697-27:2001	Site
	Determination of the thickness of a bituminous pavement - destructive measurement	BS EN 12697-36:2003	Lab
BITUMINOUS ROAD SURFACING	In-situ density - nuclear method	Documented In-House Method No IH/BNDM based upon TRRL SR 754:1982	Site
CAST STONE	Capillary absorption	BS 1217:2008	Lab
CONCRETE - fresh	Sampling fresh concrete on site - composite sample - spot sample	BS EN 12350-1:2009	Site
	Slump	BS EN 12350-2:2009	Site
	Making cubic specimens for strength tests	BS EN 12390-2:2009	Site
	Curing cubic specimens for strength tests	BS EN 12390-2:2009	Site



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CONCRETE - hardened	Curing	BS 1881-111:1983 (withdrawn)	Lab
	Density	BS 1881-114:1983 (withdrawn)	Lab
	Compressive strength of cores (loads from 10 to 3000 kN)	BS 1881-120:1983 (withdrawn)	Lab
	Cement and aggregate content	BS 1881-124:1988	Lab
	Chloride content	BS 1881-124:1988	Lab
	Curing cubic specimens for strength tests	BS EN 12390-2:2009	Lab
	Density	BS EN 12390-7:2009	Lab
	Taking cores	BS EN 12504-1:2009	Site
	Cored specimens - examining and testing in compression (loads from 10 to 3000 kN)	BS EN 12504-1:2009	Lab
	Drilling for dust samples	BRE IP 21/86	Site
	Chloride content using ion selective electrode and standard addition	Documented In-House Method No 79	Lab
CONCRETE - reinforced	Location of reinforcement	BS 1881-204:1988	Site
	Half-cell potential of uncoated reinforcing steel in concrete	ASTM C 876-09	Site
FLOORING	Dampness	BS 8203:2001	Site
	Soundness	BS 8204-1:2003+A1:2009 BRE IP 11/84	Site
HOT BINDER DISTRIBUTORS for road surface dressing	Uniformity of transverse distribution of binder (depot tray test)	BS 1707:1989	Site



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
MORTARS, SCREEDS and PLASTERS	Insoluble residue and soluble silica	BS 4551:2005+A1:2010	Lab
	Calcium oxide	BS 4551:2005+A1:2010	Lab
	Calculation of mix proportions	BS 4551:2005+A1:2010	Lab
PAVED SURFACES	Drilling of concrete and bituminous cores	Documented In-House Method No IH.034	Site
	Inspection of the reinstatement of openings in highways	Documented In-House Method No C1TP:040 based on the New Roads and Street Works Act (1991) (Specification for the Reinstatement of Openings in Highways) 3rd edition: April 2010	Site
ROAD PAVEMENT SURFACES	Texture depth by the sand-patch method	BS 598-105:2000	Site
	Pavement surface macrotexture depth using a volumetric patch technique	BS EN 13036-1:2010	Site
	Surface regularity using a rolling straight-edge	Specification for Highway Works, HMSO November 2004 Clause 702	Site
SOILS for civil engineering purposes	Moisture content - oven drying method	BS 1377-2:1990	Lab
	Liquid limit - cone penetrometer	BS 1377-2:1990	Lab
	Liquid limit - cone penetrometer - one point	BS 1377-2:1990	Lab
	Plastic limit	BS 1377-2:1990	Lab
	Plasticity index and liquidity index	BS 1377-2:1990	Lab
	Linear shrinkage	BS 1377-2:1990	Lab



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SOILS for civil engineering purposes	Density - linear measurement	BS 1377-2:1990	Lab
	Particle density - gas jar	BS 1377-2:1990	Lab
	Particle density - small pyknometer	BS 1377-2:1990	Lab
	Particle size distribution - wet sieving	BS 1377-2:1990	Lab
	Particle size distribution - dry sieving	BS 1377-2:1990	Lab
	Particle size distribution - sedimentation by the hydrometer method	BS 1377-2:1990	Lab
	Organic matter content	BS 1377-3:1990	Lab
	Carbonate content - rapid titration method	BS 1377-3:1990	Lab
	Water-soluble chloride content	BS 1377-3:1990	Lab
	pH value	BS 1377-3:1990	Lab
	Dry density/moisture content relationship (2.5 kg rammer)	BS 1377-4:1990	Lab
	Dry density/moisture content relationship (4.5 kg rammer)	BS 1377-4:1990	Lab
	Dry density/moisture content relationship (vibrating hammer)	BS 1377-4:1990	Lab
	Moisture condition value (MCV)	BS 1377-4:1990	Lab
	MCV - natural moisture content	BS 1377-4:1990	Lab / Site
MCV/moisture content relation	BS 1377-4:1990	Lab	



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
SOILS for civil engineering purposes	California Bearing Ratio (CBR) <i>(loads from 0 to 50 kN)</i>	BS 1377-4:1990	Lab
	Swelling of soaked CBR specimen	BS 1377-4:1990	Lab
	Permeability by the constant-head method	BS 1377-5:1990	Lab
	Undrained shear strength - triaxial compression without measurement of pore pressure <i>(loads from 0.05 to 25 kN)</i>	BS 1377-7:1990	Lab
	Undrained shear strength - triaxial compression with multistage loading and without measurement of pore pressure <i>(loads from 0.05 to 25 kN)</i>	BS 1377-7:1990	Lab
	In-situ density - sand replacement method (small pouring cylinder)	BS 1377-9:1990	Site
	In-situ density - sand replacement method (large pouring cylinder)	BS 1377-9:1990	Site
	In-situ density - core cutter method	BS 1377-9:1990	Site
	In-situ bulk density - nuclear method - comparative tests	BS 1377-9:1990	Site
	In-situ bulk density - nuclear method - compliance tests	BS 1377-9:1990	Site
	Vertical deformation and strength characteristics by the incremental plate loading test <i>(loads from 1 to 500 kN)</i>	BS 1377-9:1990	Site



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SOILS for civil engineering purposes	In-situ California Bearing Ratio (CBR) <i>(loads from 0.25 to 28 kN)</i>	BS 1377-9:1990	Site
	Total sulphur	ISO 15178:2000 using ELTRA CS-800 analyser with extraction in accordance with BRE publication BR279	Lab
	Determination of equivalent CBR value using the plate bearing test <i>(loads from 1 to 500 kN)</i>	Design Manual for Roads and Bridges. Volume 7:Pavement Design and Maintenance. IAN 73/06 Rev 1 (2009):Foundations	Site
	Water-soluble sulfur (WSS)	TRL Report 447:2005 Test 1	Lab
	Acid-soluble sulfur (ASS)	TRL Report 447:2005 Test 2	Lab
	Total sulfur (TS)	TRL Report 447:2005 Test 4A using microwave digestion	Lab
	Total sulfur (TS)	TRL Report 447:2005 Test 4B using ELTRA CS-800 analyser	Lab
	Sulphate content of soil and ground water - spectrometric method	Documented In-House Method No 42	Lab
	Total sulphate content of soil	Documented In-House Method No 48	Lab
	Dynamic cone penetrometer	Documented In-House Method No IH.HD25 Clause 893	Site
TOPSOIL	Extractable phosphorus	BS 3882:2007 Annex A using spectrophotometry	Lab
	Exchangeable cations - sodium, potassium, calcium and magnesium	BS 3882:2007 Annex B using ICP-OES	Lab
	Phytotoxic contaminants - copper, nickel and zinc	BS 3882:2007 Annex D using ICP-OES	Lab
	Laboratory density	BS 3882:2007 Annex F	Lab



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TOPSOIL	Electrical conductivity	BS 3882:1994 Annex L using calcium sulphate extract	Lab
	Dry matter and water content	BS 7755-3.1:1994 ISO 11465:1993	Lab
	Total nitrogen - modified Kjeldahl method	BS 7755-3.7:1995 ISO 11261:1995	Lab
	Carbonate content - volumetric method	BS 7755-3.10:1995 ISO 10693:1995	Lab
	Particle size distribution by sieving and sedimentation	BS 7755-5.4:1998 ISO 11277:1998	Lab
	pH value on water extract	BS ISO 10390:2005	Lab
	Physical contaminants	PAS 100:2005 Annex E.6.2.A	Lab
UNBOUND and HYDRAULICALLY BOUND MIXTURES	Proctor test for mixtures compacted with a 2,5 kg rammer (A) in the Proctor mould (A) using alternative apparatus	BS EN 13286-2:2004	Lab
	Proctor test for mixtures compacted with a 2,5 kg rammer (A) in the large Proctor mould (B) using alternative apparatus	BS EN 13286-2:2004	Lab
	Modified Proctor test for mixtures compacted with a 4,5 kg rammer (B) in the Proctor mould (A) using alternative apparatus	BS EN 13286-2:2004	Lab
	Modified Proctor test for mixtures compacted with a 4,5 kg rammer (B) in the large Proctor mould (B) using alternative apparatus	BS EN 13286-2:2004	Lab



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UNBOUND and HYDRAULICALLY BOUND MIXTURES	Laboratory reference density and water content - vibrating hammer	BS EN 13286-4:2003	Lab
	Moisture condition value	BS EN 13286-46:2003	Lab / Site
	Vertical expansion of California bearing ratio specimens during curing	BS EN 13286-47:2004	Lab
	California bearing ratio / immediate bearing index	BS EN 13286-47:2004	Lab
	Degree of pulverization	BS EN 13286-48:2005	Lab / Site

**End of Castleford Laboratory**



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
<b>Daventry Laboratory</b>			
AGGREGATES	Bulk density and calculation of voids and bulking of aggregate	BS 812-2:1995	Lab
	Particle size distribution - washing and sieving	BS 812-103.1:1985	Lab
	Particle size distribution - dry sieving	BS 812-103.1:1985	Lab
	Elongation index	BS 812-105.2:1990	Lab
	Moisture content - oven drying method	BS 812-109:1990	Lab
	Ten per cent fines value - dry - particle size 10 mm and greater <i>(loads from 10 to 3000 kN)</i>	BS 812-111:1990	Lab
	Ten per cent fines value - soaked - particle size 10 mm and greater <i>(loads from 10 to 3000 kN)</i>	BS 812-111:1990	Lab
	Aggregate impact value - dry	BS 812-112:1990	Lab
	Aggregate impact value - soaked	BS 812-112:1990	Lab
	Drying shrinkage	BS 812-120:1989	Lab
	Frost-heave	BS 812-124:2009	Lab
	Uniformity coefficient (221 2217)	BS 6100-2.2.1:1992	Lab
	Sampling stockpiles of fine aggregates by hand	BS EN 932-1:1997	Site
	Sampling stockpiles of coarse aggregates by hand	BS EN 932-1:1997	Site



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AGGREGATES	Particle size distribution - sieving method	BS EN 933-1:1997	Lab
	Flakiness index	BS EN 933-3:1997	Lab
	Percentage of crushed and broken surfaces in coarse aggregate particles	BS EN 933-5:1998	Lab
	Shell content	BS EN 933-7:1998	Lab
	Constituents of coarse recycled aggregate	BS EN 933-11:2009	Lab
	Micro-Deval coefficient	BS EN 1097-1:1996	Lab
	Resistance to fragmentation by the Los Angeles test method	BS EN 1097-2:2010	Lab
	Resistance to fragmentation of aggregates for railway ballast by the Los Angeles test method	BS EN 1097-2:2010 Annex A	Lab
	Loose bulk density and voids	BS EN 1097-3:1998	Lab
	Compacted dry bulk density	BS EN 1097-3:1998	Lab
	Loose bulk density with damp aggregates	BS EN 1097-3:1998	Lab
	Water content	BS EN 1097-5:2008	Lab
	Particle density and water absorption - pyknometer method for aggregate particles between 4 mm and 31,5 mm	BS EN 1097-6:2000	Lab
Particle density and water absorption - pyknometer method for aggregate particles between 0,063 mm and 4 mm	BS EN 1097-6:2000	Lab	



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AGGREGATES	Magnesium sulfate test - aggregate particles between 0,30 mm and 28 mm	BS EN 1367-2:2009	Lab
	Drying shrinkage	BS EN 1367-4:2008	Lab
	Uniformity coefficient	BS EN ISO 14688-2:2004	Lab
	Frost heave	Specification for Highway Works, HMSO November 2009 Clause 801	Lab
BITUMINOUS MIXTURES for roads and other paved areas	Binder content and grading of mineral aggregate - extraction bottle method: binder directly determined, filler by difference	BS 598-102:2003	Lab
	Percentage refusal density (PRD)	BS 598-104:2005	Lab
	Density of cores	BS 598-104:2005	Lab
	Temperature of bituminous mixtures in the hopper of a paver	BS 598-109:1990	Site
	Soluble binder content by recovery, using bottle rotation machine, bucket centrifuge type 1 and volume calculation	BS EN 12697-1:2005	Lab
	Particle size distribution	BS EN 12697-2:2002	Lab
	Maximum density - volumetric procedure	BS EN 12697-5:2009	Lab
	Bulk density - saturated surface dry (SSD) - sealed specimen	BS EN 12697-6:2003	Lab
	Air voids content	BS EN 12697-8:2003	Lab
	Percentage of the voids in the mineral aggregate filled with binder (VFB)	BS EN 12697-8:2003	Lab



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
BITUMINOUS MIXTURES for roads and other paved areas	Conventional refusal density - vibratory compaction	BS EN 12697-9:2002	Lab
	Percentage refusal density (PRD) - vibratory compaction	BS EN 12697-9:2002	Lab
	Measurements of temperature - in a lorry - of laid materials - in a heap	BS EN 12697-13:2000	Site
	Sampling from the material around the augers of the paver	BS EN 12697-27:2001	Site
	Sampling of workable material in heaps	BS EN 12697-27:2001	Site
	Sampling coated chippings from stockpiles	BS EN 12697-27:2001	Site
	Preparation of samples for determining binder content, water content and grading	BS EN 12697-28:2001	Lab / Site
	Laboratory compaction of bituminous mixtures by vibratory compaction	BS EN 12697-32:2003	Lab
	Determination of the thickness of a bituminous pavement - destructive measurement	BS EN 12697-36:2003	Lab
BITUMINOUS ROAD SURFACING	In-situ density - nuclear method	Documented In-House Method No IH/BNDM based upon TRRL SR 754:1982	Site
	In-situ density - non-nuclear method	Documented In-House Method No TP IH/NNG	Site
CONCRETE - fresh	Sampling fresh concrete on site - composite sample - spot sample	BS EN 12350-1:2009	Site



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
CONCRETE - fresh	Slump	BS EN 12350-2:2009	Site
	Flow	BS EN 12350-5:2009	Site
	Air content - water column method	BS EN 12350-7:2009	Site
	Making cubic specimens for strength tests	BS EN 12390-2:2009	Lab / Site
	Curing cubic specimens for strength tests	BS EN 12390-2:2009	Lab / Site
CONCRETE - hardened	Density	BS 1881-114:1983 (withdrawn)	Lab
	Compressive strength of cubes - including curing (loads from 10 to 3000 kN)	BS 1881-116:1983 (withdrawn) BS 1881-111:1983 (withdrawn)	Lab
	Compressive strength of cores (loads from 10 to 3000 kN)	BS 1881-120:1983 (withdrawn)	Lab
	Depth of carbonation	BS 1881-201:1986	Site
	Compressive strength of cubes - including curing (loads from 10 to 3000 kN)	BS EN 12390-3:2009 BS EN 12390-2:2009	Lab
	Density	BS EN 12390-7:2009	Lab
	Taking cores	BS EN 12504-1:2009	Site
	Cored specimens - examining and testing in compression (loads from 10 to 3000 kN)	BS EN 12504-1:2009	Lab
	Carbonation	BRE Digest 405:May 1995	Site
	Drilling for dust samples	BRE IP 21/86	Site
CONCRETE - reinforced	Location of reinforcement	BS 1881-204:1988	Site
	Half-cell potential of uncoated reinforcing steel in concrete	ASTM C 876-09	Site



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
CONCRETE - reinforced	Visual and hammer survey of concrete structures	Documented In-House Method No IH.025	Site
FLOORING	Dampness	BS 8203:2001	Site
	Soundness	BS 8204-1:2003 + A1:2009 BRE IP 11/84	Site
MORTARS, SCREEDS and PLASTERS	Sampling from - conveyors, pumps, etc. - small hoppers, bins or heaps	BS 4551-1:1998 (withdrawn)	Site
	Making test cubes	BS 4551-1:1998 (withdrawn)	Site
	Compressive strength - including curing (loads from 10 to 3000 kN)	BS 4551-1:1998 (withdrawn)	Lab
ROAD PAVEMENT SURFACES	Texture depth by the sand-patch method	BS 598-105:2000	Site
	Pavement surface macrotexture depth using a volumetric patch technique	BS EN 13036-1:2010	Site
	Surface regularity using a rolling straight-edge	Specification for Highway Works, HMSO November 2004 Clause 702	Site
SOILS for civil engineering purposes	Moisture content - oven drying method	BS 1377-2:1990	Lab
	Liquid limit - cone penetrometer	BS 1377-2:1990	Lab
	Liquid limit - cone penetrometer - one point	BS 1377-2:1990	Lab
	Plastic limit	BS 1377-2:1990	Lab
	Plasticity index and liquidity index	BS 1377-2:1990	Lab
	Density - linear measurement	BS 1377-2:1990	Lab



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
SOILS for civil engineering purposes	Particle density - gas jar	BS 1377-2:1990	Lab
	Particle density - small pyknometer	BS 1377-2:1990	Lab
	Particle size distribution - wet sieving	BS 1377-2:1990	Lab
	Particle size distribution - dry sieving	BS 1377-2:1990	Lab
	Particle size distribution - sedimentation by the hydrometer method	BS 1377-2:1990	Lab
	Dry density/moisture content relationship (2.5 kg rammer)	BS 1377-4:1990	Lab
	Dry density/moisture content relationship (4.5 kg rammer)	BS 1377-4:1990	Lab
	Dry density/moisture content relationship (vibrating hammer)	BS 1377-4:1990	Lab
	Moisture condition value (MCV)	BS 1377-4:1990	Lab
	MCV - natural moisture content	BS 1377-4:1990	Lab / Site
	MCV/moisture content relation	BS 1377-4:1990	Lab
	California Bearing Ratio (CBR) (loads from 0 to 50 kN)	BS 1377-4:1990	Lab
	Swelling of soaked CBR specimen	BS 1377-4:1990	Lab
	One-dimensional consolidation properties	BS 1377-5:1990	Lab
Permeability in a triaxial cell	BS 1377-6:1990	Lab	



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
SOILS for civil engineering purposes	Shear strength by direct shear (small shearbox apparatus) (loads from 0.05 to 5 kN)	BS 1377-7:1990	Lab
	Shear strength by direct shear (large shearbox apparatus) (loads from 2 to 50 kN)	BS 1377-7:1990	Lab
	Undrained shear strength - triaxial compression without measurement of pore pressure (loads from 0.05 to 25 kN)	BS 1377-7:1990	Lab
	Undrained shear strength - triaxial compression with multistage loading and without measurement of pore pressure (loads from 0.05 to 25 kN)	BS 1377-7:1990	Lab
	Unconfined compressive strength - load frame method (loads from 0.12 to 20 kN)	BS 1377-7:1990	Lab
	In-situ density - sand replacement method (large pouring cylinder)	BS 1377-9:1990	Site
	In-situ density - core cutter method	BS 1377-9:1990	Site
	In-situ bulk density - nuclear method - comparative tests	BS 1377-9:1990	Site
	In-situ bulk density - nuclear method - absolute tests	BS 1377-9:1990	Site
	In-situ bulk density - nuclear method - compliance tests	BS 1377-9:1990	Site



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
SOILS for civil engineering purposes	Vertical deformation and strength characteristics by the incremental plate loading test <i>(loads from 1 to 500 kN)</i>	BS 1377-9:1990	Site
	In-situ California Bearing Ratio (CBR) <i>(loads from 0.25 to 28 kN)</i>	BS 1377-9:1990	Site
	Determination of equivalent CBR value using the plate bearing test <i>(loads from 1 to 500 kN)</i>	Design Manual for Roads and Bridges. Volume 7:Pavement Design and Maintenance. IAN 73/06 Rev 1 (2009):Foundations	Site
	Undrained shear strength of remoulded cohesive material <i>(loads from 0.05 to 25 kN)</i>	Specification for Highway Works, HMSO March 1998 Clause 633	Lab
	Effective angle of internal friction and effective cohesion of earthworks materials <i>(loads from 0.5 to 50 kN)</i>	Specification for Highway Works, HMSO March 1998 Clause 636	Lab
	Coefficient of friction and adhesion between fill and reinforcing elements or anchor elements for reinforced soil and anchored earth structures <i>(loads from 0.5 to 50 kN)</i>	Specification for Highway Works, HMSO March 1998 Clause 639	Lab
	Determination of the permeability of clayey soils in a triaxial cell using the accelerated permeability test	Environment Agency R & D Technical Report P1-398/TR/2: January 2003	Lab
	Soil suction (filter paper method)	Documented In-House Method No TP.BRE IP4/93	Lab
	One dimensional swell/strain	Documented In-House Method No TP.IH1377.1-5	Lab
Dynamic cone penetrometer	Documented In-House Method No IH.HD25 Clause 893	Site	



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
STABILIZED MATERIALS for civil engineering purposes - cement-stabilized and lime-stabilized materials	California Bearing Ratio (CBR) (loads from 0.05 to 25 kN)	BS 1924-2:1990	Lab
	Swelling of soaked CBR specimen	BS 1924-2:1990	Lab
UNBOUND and HYDRAULICALLY BOUND MIXTURES	Proctor test for mixtures compacted with a 2,5 kg rammer (A) in the Proctor mould (A) using alternative apparatus	BS EN 13286-2:2004	Lab
	Proctor test for mixtures compacted with a 2,5 kg rammer (A) in the large Proctor mould (B) using alternative apparatus	BS EN 13286-2:2004	Lab
	Modified Proctor test for mixtures compacted with a 4,5 kg rammer (B) in the Proctor mould (A) using alternative apparatus	BS EN 13286-2:2004	Lab
	Modified Proctor test for mixtures compacted with a 4,5 kg rammer (B) in the large Proctor mould (B) using alternative apparatus	BS EN 13286-2:2004	Lab
	Laboratory reference density and water content - vibrating hammer	BS EN 13286-4:2003	Lab
	Moisture condition value	BS EN 13286-46:2003	Lab / Site
	Degree of pulverization	BS EN 13286-48:2005	Lab / Site

**End of Daventry Laboratory**



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
<b>Dorset Laboratory</b>			
AGGREGATES	Uniformity coefficient (221 2217)	BS 6100-2.2.1:1992	Lab
	Particle size distribution - sieving method	BS EN 933-1:1997	Lab
	Flakiness index	BS EN 933-3:1997	Lab
	Water content	BS EN 1097-5:2008	Lab
BITUMINOUS MIXTURES for roads and other paved areas	Soluble binder content by recovery, using bottle rotation machine, bucket centrifuge type 1 and volume calculation	BS EN 12697-1:2005	Lab
	Particle size distribution	BS EN 12697-2:2002	Lab
	Maximum density - volumetric procedure	BS EN 12697-5:2009	Lab
	Bulk density - dry - saturated surface dry (SSD) - sealed specimen	BS EN 12697-6:2003	Lab
	Air voids content	BS EN 12697-8:2003	Lab
	Percentage of the voids in the mineral aggregate filled with binder (VFB)	BS EN 12697-8:2003	Lab
	Measurements of temperature - in a lorry - of laid materials - in a heap	BS EN 12697-13:2000	Site
	Preparation of samples for determining binder content, water content and grading	BS EN 12697-28:2001	Lab / Site



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
BITUMINOUS MIXTURES for roads and other paved areas	Determination of the thickness of a bituminous pavement - destructive measurement	BS EN 12697-36:2003	Lab
BITUMINOUS ROAD SURFACING	Rate of spread of chippings for mechanical chipping spreaders	BS 598-108:1990	Site
	Rate of spread of binder	BS EN 12272-1:2002	Site
CONCRETE - fresh	Curing	BS 1881-111:1983 (withdrawn)	Site
	Curing cubic specimens for strength tests	BS EN 12390-2:2009	Site
CONCRETE - hardened	Density	BS 1881-114:1983 (withdrawn)	Lab
	Compressive strength of cubes - including curing (loads from 10 to 3000 kN)	BS 1881-116:1983 (withdrawn) BS 1881-111:1983 (withdrawn)	Lab
	Compressive strength of cubes - including curing (loads from 10 to 3000 kN)	BS EN 12390-3:2009 BS EN 12390-2:2009	Lab
	Density	BS EN 12390-7:2009	Lab
ROAD PAVEMENT SURFACES	Logging of road pavement cores	Documented In-House Method No TP 19	Lab
SOILS for civil engineering purposes	Moisture content - oven drying method	BS 1377-2:1990	Lab
	Particle size distribution - wet sieving	BS 1377-2:1990	Lab
	Particle size distribution - dry sieving	BS 1377-2:1990	Lab
	Particle size distribution - sedimentation by the pipette method	BS 1377-2:1990	Lab
	pH value	BS 1377-3:1990	Lab



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
SOILS for civil engineering purposes	Resistivity: Wenner probe method	BS 1377-3:1990	Lab
	Redox potential	BS 1377-3:1990	Lab
	Dry density/moisture content relationship (2.5 kg rammer)	BS 1377-4:1990	Lab
	Dry density/moisture content relationship (4.5 kg rammer)	BS 1377-4:1990	Lab
	Dry density/moisture content relationship (vibrating hammer)	BS 1377-4:1990	Lab
	Uniformity coefficient (221 2217)	BS 6100-2.2.1:1992	Lab

**End of Dorset Laboratory**



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
<b>Glasgow Laboratory</b>			
AGGREGATES	Particle size distribution - washing and sieving	BS 812-103.1:1985	Lab
	Particle size distribution - dry sieving	BS 812-103.1:1985	Lab
	Aggregate crushing value - particle size 10 mm and greater (loads from 10 to 2500 kN)	BS 812-110:1990	Lab
	Ten per cent fines value - dry - particle size 10 mm and greater (loads from 10 to 3000 kN)	BS 812-111:1990	Lab
	Ten per cent fines value - soaked - particle size 10 mm and greater (loads from 10 to 3000 kN)	BS 812-111:1990	Lab
	Aggregate impact value - dry	BS 812-112:1990	Lab
	Aggregate impact value - soaked	BS 812-112:1990	Lab
	Frost-heave	BS 812-124:2009	Lab
	Uniformity coefficient (221 2217)	BS 6100-2.2.1:1992	Lab
	Sampling stockpiles of fine aggregates by hand	BS EN 932-1:1997	Site
	Sampling stockpiles of coarse aggregates by hand	BS EN 932-1:1997	Site
	Particle size distribution - sieving method	BS EN 933-1:1997	Lab
	Flakiness index	BS EN 933-3:1997	Lab



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
AGGREGATES	Percentage of crushed and broken surfaces in coarse aggregate particles	BS EN 933-5:1998	Lab
	Micro-Deval coefficient	BS EN 1097-1:1996	Lab
	Resistance to fragmentation by the Los Angeles test method	BS EN 1097-2:2010	Lab
	Resistance to fragmentation of aggregates for railway ballast by the Los Angeles test method	BS EN 1097-2:2010 Annex A	Lab
	Loose bulk density and voids	BS EN 1097-3:1998	Lab
	Compacted dry bulk density	BS EN 1097-3:1998	Lab
	Loose bulk density with damp aggregates	BS EN 1097-3:1998	Lab
	Water content	BS EN 1097-5:2008	Lab
	Particle density and water absorption - pyknometer method for aggregate particles between 4 mm and 31,5 mm	BS EN 1097-6:2000	Lab
	Particle density and water absorption - pyknometer method for aggregate particles between 0,063 mm and 4 mm	BS EN 1097-6:2000	Lab
	Polished stone value	BS EN 1097-8:2009	Lab
	Aggregate abrasion value	BS EN 1097-8:2009	Lab
	Magnesium sulfate test - aggregate particles between 0,30 mm and 28 mm	BS EN 1367-2:2009	Lab
	Drying shrinkage	BS EN 1367-4:2008	Lab



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
AGGREGATES	Frost heave	Specification for Highway Works, HMSO November 2009 Clause 801	Lab
BITUMINOUS MATERIALS	Needle penetration - 25°C	BS EN 1426:2007	Lab
	Bitumen recovery: rotary evaporator	BS EN 12697-3:2005	Lab
BITUMINOUS MIXTURES for roads and other paved areas	Binder content and grading of mineral aggregate - extraction bottle method: binder determination by difference	BS 598-102:2003	Lab
	Binder content and grading of mineral aggregate - extraction bottle method: binder directly determined, filler by difference	BS 598-102:2003	Lab
	Temperature of bituminous mixtures in the hopper of a paver	BS 598-109:1990	Site
	Temperature of bituminous mixtures in laid-but-not-rolled material	BS 598-109:1990	Site
	Protocol for determining the design binder content of designed HRA surface course mixtures (loads from 1 to 25 kN)	BS 594987:2007 Annex H	Lab
	Soluble binder content by difference, using bottle rotation machine and pressure filter	BS EN 12697-1:2005	Lab
	Soluble binder content by recovery, using bottle rotation machine, bucket centrifuge type 1 and volume calculation	BS EN 12697-1:2005	Lab
	Particle size distribution	BS EN 12697-2:2002	Lab



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
BITUMINOUS MIXTURES for roads and other paved areas	Maximum density - volumetric procedure	BS EN 12697-5:2009	Lab
	Bulk density - dry - saturated surface dry (SSD) - sealed specimen - by dimensions	BS EN 12697-6:2003	Lab
	Air voids content	BS EN 12697-8:2003	Lab
	Percentage of the voids in the mineral aggregate filled with binder (VFB)	BS EN 12697-8:2003	Lab
	Conventional refusal density - vibratory compaction	BS EN 12697-9:2002	Lab
	Percentage refusal density (PRD) - vibratory compaction	BS EN 12697-9:2002	Lab
	Stiffness - test applying indirect tension to cylindrical specimens (IT-CY) (loads from 0 to 10 kN)	BS EN 12697-26:2004 Annex C	Lab
	Sampling from the material around the augers of the paver	BS EN 12697-27:2001	Site
	Sampling of laid and compacted materials by coring	BS EN 12697-27:2001	Site
	Sampling coated chippings from stockpiles	BS EN 12697-27:2001	Site
	Preparation of samples for determining binder content, water content and grading	BS EN 12697-28:2001	Lab / Site
Determination of the dimensions of a bituminous sample	BS EN 12697-29:2002	Lab	



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
BITUMINOUS MIXTURES for roads and other paved areas	Specimen preparation by impact compactor with wooden pedestal	BS EN 12697-30:2004	Lab
	Laboratory compaction of bituminous mixtures by vibratory compaction	BS EN 12697-32:2003	Lab
	Laboratory mixing	BS EN 12697-35:2004	Lab
	Indirect tensile stiffness modulus (loads from 0 to 10 kN)	BS DD 213:1993	Lab
	Resistance to permanent deformation - unconfined dynamic loading (RLAT) (loads from 0 to 10 kN)	BS DD 226:1996	Lab
	Resistance to permanent deformation - unconfined dynamic loading under vacuum (VRLAT) (loads from 0 to 10 kN)	BS DD 226:1996 modified in accordance with TRL PA 3287/97	Lab
BITUMINOUS ROAD SURFACING	In-situ density - nuclear method	Documented In-House Method No IH/BNDM based upon TRRL SR 754:1982	Site
CONCRETE - fresh	Making test cubes	BS 1881-108:1983 (withdrawn)	Lab
	Curing	BS 1881-111:1983 (withdrawn)	Lab / Site
	Sampling fresh concrete on site - composite sample - spot sample	BS EN 12350-1:2009	Site
	Slump	BS EN 12350-2:2009	Site
	Making cubic specimens for strength tests	BS EN 12390-2:2009	Lab / Site
	Curing cubic specimens for strength tests	BS EN 12390-2:2009	Lab / Site



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
CONCRETE - hardened	Density	BS 1881-114:1983 (withdrawn)	Lab
	Compressive strength of cubes - including curing (loads from 10 to 3000 kN)	BS 1881-116:1983 (withdrawn) BS 1881-111:1983 (withdrawn)	Lab
	Depth of carbonation	BS 1881-201:1986	Site
	Compressive strength of cubes - including curing (loads from 10 to 3000 kN)	BS EN 12390-3:2009 BS EN 12390-2:2009	Lab
	Density	BS EN 12390-7:2009	Lab
	Taking cores	BS EN 12504-1:2009	Site
	Cored specimens - examining and testing in compression (loads from 10 to 3000 kN)	BS EN 12504-1:2009	Lab
	Carbonation	BRE Digest 405:May 1995	Site
	Drilling for dust samples	BRE IP 21/86	Site
	CONCRETE - reinforced	Location of reinforcement	BS 1881-204:1988
Half-cell potential of uncoated reinforcing steel in concrete		ASTM C 876-09	Site
MORTARS, SCREEDS and PLASTERS	Sampling from - conveyors, pumps, etc. - small hoppers, bins or heaps	BS 4551-1:1998 (withdrawn)	Site
	Making test cubes	BS 4551-1:1998 (withdrawn)	Site
	Compressive strength - including curing (loads from 10 to 3000 kN)	BS 4551-1:1998 (withdrawn)	Lab



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**Issue No: 067 Issue date: 14 May 2012**

**Testing performed by the Organisation at the locations specified**

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
PAVED SURFACES	Measurement of material depths and sampling by coring	Documented In-House Method No On-site Sampling Procedure 11 based on the New Roads and Street Works Act (1991) (Specification for the Reinstatement of Openings in Highways) 3rd edition: April 2010 and Scottish 2nd edition: Oct 2003	Site
PRECAST CONCRETE MASONRY UNITS	Dimensions	BS 6073-1:1981	Lab
	Compressive strength (loads from 10 to 3000 kN)	BS 6073-1:1981	Lab
	Drying shrinkage	BS 6073-1:1981	Lab
	Routine rapid control test of compressive strength of blocks by manufacturer (fibre board test) (loads from 10 to 3000 kN)	BS 6073-2:1981	Lab
	Block density, concrete density and net area of hollow blocks	BS 6073-2:1981	Lab
ROAD PAVEMENT SURFACES	Texture depth by the sand-patch method	BS 598-105:2000	Site
	Surface regularity using a rolling straight-edge	Specification for Highway Works, HMSO November 2004 Clause 702	Site
SOILS for civil engineering purposes	Moisture content - oven drying method	BS 1377-2:1990	Lab
	Liquid limit - cone penetrometer	BS 1377-2:1990	Lab
	Liquid limit - cone penetrometer - one point	BS 1377-2:1990	Lab
	Plastic limit	BS 1377-2:1990	Lab



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
SOILS for civil engineering purposes	Plasticity index and liquidity index	BS 1377-2:1990	Lab
	Particle density - gas jar	BS 1377-2:1990	Lab
	Particle size distribution - wet sieving	BS 1377-2:1990	Lab
	Particle size distribution - dry sieving	BS 1377-2:1990	Lab
	Particle size distribution - sedimentation by the hydrometer method	BS 1377-2:1990	Lab
	Resistivity: Wenner probe method	BS 1377-3:1990	Lab
	Dry density/moisture content relationship (2.5 kg rammer)	BS 1377-4:1990	Lab
	Dry density/moisture content relationship (4.5 kg rammer)	BS 1377-4:1990	Lab
	Dry density/moisture content relationship (vibrating hammer)	BS 1377-4:1990	Lab
	Moisture condition value (MCV)	BS 1377-4:1990	Lab
	MCV - natural moisture content	BS 1377-4:1990	Lab / Site
	MCV/moisture content relation	BS 1377-4:1990	Lab
	California Bearing Ratio (CBR) (loads from 0 to 50 kN)	BS 1377-4:1990	Lab
	In-situ density - sand replacement method (large pouring cylinder)	BS 1377-9:1990	Site
In-situ density - core cutter method	BS 1377-9:1990	Site	



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SOILS for civil engineering purposes	In-situ bulk density - nuclear method - comparative tests	BS 1377-9:1990	Site
	In-situ bulk density - nuclear method - absolute tests	BS 1377-9:1990	Site
	In-situ bulk density - nuclear method - compliance tests	BS 1377-9:1990	Site
	Vertical deformation and strength characteristics by the incremental plate loading test (loads from 1 to 500 kN)	BS 1377-9:1990	Site
	In-situ California Bearing Ratio (CBR) (loads from 0.25 to 28 kN)	BS 1377-9:1990	Site
	Determination of equivalent CBR value using the plate bearing test (loads from 1 to 500 kN)	Design Manual for Roads and Bridges. Volume 7:Pavement Design and Maintenance. IAN 73/06 Rev 1 (2009):Foundations	Site
	Moisture condition value (MCV)	Specification for Highway Works, HMSO November 2006 Clause 632TS TRL Report 273:1997	Lab
	Natural moisture content MCV	Specification for Highway Works, HMSO November 2006 Clause 632TS TRL Report 273:1997	Site
	Dynamic cone penetrometer	Documented In-House Method No IH.HD25 Clause 893	Site
UNBOUND and HYDRAULICALLY BOUND MIXTURES	Proctor test for mixtures compacted with a 2,5 kg rammer (A) in the Proctor mould (A) using alternative apparatus	BS EN 13286-2:2004	Lab



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
UNBOUND and HYDRAULICALLY BOUND MIXTURES	Proctor test for mixtures compacted with a 2,5 kg rammer (A) in the large Proctor mould (B) using alternative apparatus	BS EN 13286-2:2004	Lab
	Modified Proctor test for mixtures compacted with a 4,5 kg rammer (B) in the Proctor mould (A) using alternative apparatus	BS EN 13286-2:2004	Lab
	Modified Proctor test for mixtures compacted with a 4,5 kg rammer (B) in the large Proctor mould (B) using alternative apparatus	BS EN 13286-2:2004	Lab
	Laboratory reference density and water content - vibrating hammer	BS EN 13286-4:2003	Lab
	Moisture condition value	BS EN 13286-46:2003	Lab / Site
	Vertical expansion of California bearing ratio specimens during curing	BS EN 13286-47:2004	Lab
	California bearing ratio / immediate bearing index	BS EN 13286-47:2004	Lab
	Degree of pulverization	BS EN 13286-48:2005	Lab / Site

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**Testing performed by the Organisation at the locations specified**

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
<b>Maidstone Laboratory</b>			
AGGREGATES	Water content	BS EN 1097-5:2008	Lab
CONCRETE - fresh	Curing	BS 1881-111:1983 (withdrawn)	Lab
	Curing cubic specimens for strength tests	BS EN 12390-2:2009	Lab
SOILS for civil engineering purposes	Moisture content - oven drying method	BS 1377-2:1990	Lab
<b>End of Maidstone Laboratory</b>			



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**Testing performed by the Organisation at the locations specified**

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
<b>Newcastle Laboratory</b>			
AGGREGATES	Moisture content - oven drying method	BS 812-109:1990	Lab
	Water content	BS EN 1097-5:2008	Lab
CONCRETE - fresh	Curing	BS 1881-111:1983 (withdrawn)	Lab
	Curing cubic specimens for strength tests	BS EN 12390-2:2009	Lab
CONCRETE - hardened	Density	BS 1881-114:1983 (withdrawn)	Lab
	Compressive strength of cubes - including curing (loads from 10 to 3000 kN)	BS 1881-116:1983 (withdrawn) BS 1881-111:1983 (withdrawn)	Lab
	Compressive strength of cubes - including curing (loads from 10 to 3000 kN)	BS EN 12390-3:2009 BS EN 12390-2:2009	Lab
	Density	BS EN 12390-7:2009	Lab
MORTARS, SCREEDS and PLASTERS	Compressive strength - including curing (loads from 10 to 3000 kN)	BS 4551-1:1998 (withdrawn)	Lab
SOILS for civil engineering purposes	Moisture content - oven drying method	BS 1377-2:1990	Lab

**End of Newcastle Laboratory**



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Testing performed by the Organisation at the locations specified

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
<b>Oldbury Laboratory</b>			
CONCRETE - hardened	Depth of carbonation	BS 1881-201:1986	Site
	Taking cores	BS EN 12504-1:2009	Site
	Carbonation	BRE Digest 405:May 1995	Site
	Drilling for dust samples	BRE IP 21/86	Site
CONCRETE - reinforced	Location of reinforcement	BS 1881-204:1988	Site
	Half-cell potential of uncoated reinforcing steel in concrete	ASTM C 876-09	Site
	Visual and hammer survey of concrete structures	Documented In-House Method No IH.025	Site
PAVED SURFACES	Drilling of concrete and bituminous cores	Documented In-House Method No IH.034	Site
	Inspection of the reinstatement of openings in highways	Documented In-House Method No C1TP:040 based on the New Roads and Street Works Act (1991) (Specification for the Reinstatement of Openings in Highways) 3rd edition: April 2010	Site

**End of Oldbury Laboratory**



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
<b>St Albans Laboratory</b>			
METALS, ALLOYS and METAL PRODUCTS	Tensile testing (ambient temperature: forces from 5 kN to 600 kN)	BS EN ISO 6892-1:2009 Method B BS 4A4-1:1966	Lab
	Charpy impact (77 K and 123 K to ambient)	BS EN ISO 148-1:2010	Lab
	Izod impact	BS 131-1:1961	Lab
	Vickers hardness (HV10, HV30)	BS EN ISO 6507-1:2005	Lab
	Low force Vickers hardness (HV0.5, HV1)	BS EN ISO 6507-1:2005	Lab
	Bend	BS EN ISO 7438:2005	Lab
	Case depth	BS 6286:1982 BS EN ISO 2639:2002 BS EN 10328:2005	Lab
	Carbon and sulphur	Documented In-House Method No E5TP009.5 using combustion techniques and infra-red absorption	Lab
Manhole covers - cast iron and cast steel	Strength	BS EN 124:1994 BS 497-1:1976 (withdrawn)	Lab
Hot dip galvanised coatings	Zinc coating mass	BS EN 10327:2004 BS EN 10346:2009 BS EN ISO 1460:1995 BS EN ISO 1461:2009	Lab
Carbon and low alloy steels	Elemental analysis: C, Si, Mn, S, P, Al, As, B, Ca, Co, Cr, Cu, Mo, Nb, Ni, Pb, Sn, Ti, V, W	Documented In-House Methods No E5TP009.1, E5TP009.2 and E5TP009.5 using optical emission spectroscopy and combustion techniques	Lab
	Nitrogen	Documented In-House Method No TP15-MET using inert gas fusion technique	Lab



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
Stainless steels	Elemental analysis: C, Si, Mn, S, P, Al, As, B, Ca, Co, Cr, Cu, Mo, Nb, Ni, Pb, Sn, Ti, V, W	Documented In-House Methods No E5TP009.3 and E5TP009.5 using optical emission spectroscopy and combustion techniques	Lab
Austenitic stainless steels and copper alloys	Accelerated corrosion	BS EN 3651-2:1998 ASTM A262-10 Practice 'E'	Lab
	Carbon and sulphur content	Documented In-House Method No TP13A-MET using combustion technique	Lab
Aluminium alloys	Elemental analysis: C, Si, Mn, S, P, Al, As, B, Ca, Co, Cr, Cu, Mo, Nb, Ni, Pb, Sn, Ti, V, W	Documented In-House Methods No E5TP009.4 and E5TP009.5 using optical emission spectroscopy and combustion techniques	Lab
<b>WELDMENTS</b>	Tests designated in specified welding codes:		
Steel and aluminium alloys	Bend, fracture, hardness, impact, tensile, macro-examination, micro-examination	BS EN ISO 5173:2010 BS EN ISO 5817:2007 BS EN ISO 9606-2:2004 BS EN ISO 15614-1:2004+A1:2008 BS EN ISO 15614-2:2005 BS EN ISO 15614-8 :2002 BS EN 287-1:2004 BS EN 875:1995 BS EN 876:1995 BS EN 895:1995 BS EN 1043-1:1996 BS EN 1320:1997 BS EN 1321:1997 BS 709:1983 (withdrawn) BS 4871-3:1985 BS 4872-1:1982(1995) BS 4872-2:1976(1995) BS 7123:1989 (withdrawn)	Lab
Aluminium alloys, magnesium alloys, steels, nickel alloys, copper alloys, titanium alloys	Bend, tensile, micro-examination, visual examination	ABP2-4099 Issue 6 BAe R05-6116 Issue 1 BCAR Subsection A.8 Chapter A8-10	Lab



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
Aluminium alloys, magnesium alloys, steels, nickel alloys, copper alloys, titanium alloys	Micro-examination, visual examination	RPS 912 Issue 14 - January 2010	Lab
Aluminium alloys, magnesium alloys, steels, nickel alloys, titanium alloys	Bend, tensile, micro-examination, visual examination	WHPS 455 Issue 2 - 1989	Lab
REINFORCING STEEL - bar and wire	Carbon and sulphur	Documented In-House Method No E5TP009.5 using combustion techniques and infra-red absorption	Lab
	Nitrogen	Documented In-House Method No TP15-MET using inert-gas fusion	Lab
	Composition	Documented In-House Method No TP14-MET using optical emission spectroscopy	Lab
REINFORCING STEEL - bar	Tensile and rebend up to and including 32 mm diameter	BS 4449:1997 (withdrawn) BS 4449:2005 + A2:2009 BS EN ISO 15630-1:2010	Lab
	Fatigue up to and including 16 mm diameter	BS 4449:1997 (withdrawn) BS 4449:2005 + A2:2009 BS EN ISO 15630-1:2010	Lab
	Projected rib area Relative rib area	BS 4449:1997 (withdrawn) BS 4449:2005 + A2:2009 BS EN ISO 15630-1:2010	Lab
REINFORCING STEEL - mechanical splices	Tensile Determination of permanent offset up to and including 32 mm diameter	BS 4449:1997 (withdrawn) BS 4449:2005 + A2:2009 Documented In-House Method No TP6-MET	Lab
REINFORCING STEEL - steel fabric	Weld shear test	BS EN ISO 15630-2:2010	Lab
REINFORCING STEEL - wire	Tensile and rebend	BS EN ISO 15630-1:2010	Lab



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
SLATE	Length and width and the deviation from the specified length and width	BS EN 12326-2:2000	Lab
	Amount by which the edges deviate from a straight edge	BS EN 12326-2:2000	Lab
	Rectangularity of slates	BS EN 12326-2:2000	Lab
	Thickness	BS EN 12326-2:2000	Lab
	Deviation from flatness	BS EN 12326-2:2000	Lab
	Water absorption	BS EN 12326-2:2000	Lab
	Sulfur dioxide exposure for slates with a calcium carbonate content less than 20 %	BS EN 12326-2:2000	Lab
	Thermal cycle	BS EN 12326-2:2000	Lab
Determination of carbonate content and non-carbonate carbon content	Documented In-House Method No TP 25-MET based on BS EN 12326-2:2000	Lab	

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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
<b>Stockton-on-Tees Laboratory</b>			
CONCRETE structures, walls and piles	Integrity testing of concrete deep foundations by ultrasonic crosshole testing	ASTM D 6760-08	Site
FOUNDATION PILES	High-strain dynamic testing of deep foundations	ASTM D 4945-08	Site
	Low strain impact integrity testing of deep foundations	ASTM D 5882-07	Site
	Static maintained load test	ICE Specification for Piling Edition 2:2007	Site

**End of Stockon-on-Tees Laboratory**



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
<b>Uxbridge Laboratory</b>			
AGGREGATES	Particle size distribution - washing and sieving	BS 812-103.1:1985	Lab
	Particle size distribution - dry sieving	BS 812-103.1:1985	Lab
	Moisture content - oven drying method	BS 812-109:1990	Lab
	Ten per cent fines value - dry - particle size 10 mm and greater (loads from 10 to 3000 kN)	BS 812-111:1990	Lab
	Ten per cent fines value - soaked - particle size 10 mm and greater (loads from 10 to 3000 kN)	BS 812-111:1990	Lab
	Frost-heave	BS 812-124:2009	Lab
	Uniformity coefficient (221 2217)	BS 6100-2.2.1:1992	Lab
	Sampling stockpiles of fine aggregates by hand	BS EN 932-1:1997	Site
	Sampling stockpiles of coarse aggregates by hand	BS EN 932-1:1997	Site
	Particle size distribution - sieving method	BS EN 933-1:1997	Lab
	Constituents of coarse recycled aggregate	BS EN 933-11:2009	Lab
	Resistance to fragmentation by the Los Angeles test method	BS EN 1097-2:2010	Lab



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
AGGREGATES	Resistance to fragmentation of aggregates for railway ballast by the Los Angeles test method	BS EN 1097-2:2010 Annex A	Lab
	Water content	BS EN 1097-5:2008	Lab
	Uniformity coefficient	BS EN ISO 14688-2:2004	Lab
	Frost heave	Specification for Highway Works, HMSO November 2009 Clause 801	Lab
BITUMINOUS MIXTURES for roads and other paved areas	Percentage refusal density (PRD)	BS 598-104:2005	Lab
	Density of cores	BS 598-104:2005	Lab
	Temperature of bituminous mixtures in the hopper of a paver	BS 598-109:1990	Site
	Temperature of bituminous mixtures in laid-but-not-rolled material	BS 598-109:1990	Site
	Bulk density - saturated surface dry (SSD) - sealed specimen	BS EN 12697-6:2003	Lab
	Conventional refusal density - vibratory compaction	BS EN 12697-9:2002	Lab
	Percentage refusal density (PRD) - vibratory compaction	BS EN 12697-9:2002	Lab
	Sampling from the material around the augers of the paver	BS EN 12697-27:2001	Site
	Sampling of workable material in heaps	BS EN 12697-27:2001	Site
	Sampling coated chippings from stockpiles	BS EN 12697-27:2001	Site



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BITUMINOUS MIXTURES for roads and other paved areas	Laboratory compaction of bituminous mixtures by vibratory compaction	BS EN 12697-32:2003	Lab
BITUMINOUS ROAD SURFACING	In-situ density - nuclear method	Documented In-House Method No IH/BNDM based upon TRRL SR 754:1982	Site
CAST STONE	Capillary absorption	BS 1217:2008	Lab
CLAY BRICKS	Compressive strength (loads from 10 to 3000 kN)	BS 3921:1985	Lab
CONCRETE - fresh	Water absorption	BS 3921:1985	Lab
	Sampling fresh concrete on site	BS 1881-101:1983 (withdrawn)	Site
	Sampling from initial discharge (slump test)	BS 1881-102:1983 (withdrawn)	Site
	Slump	BS 1881-102:1983 (withdrawn)	Site
	Making test cubes	BS 1881-108:1983 (withdrawn)	Lab / Site
	Curing	BS 1881-111:1983 (withdrawn)	Lab / Site
	Sampling fresh concrete on site - composite sample - spot sample	BS EN 12350-1:2009	Site
	Slump	BS EN 12350-2:2009	Site
	Flow	BS EN 12350-5:2009	Site
	Air content - pressure gauge method	BS EN 12350-7:2009	Site
CONCRETE - fresh	Making cubic specimens for strength tests	BS EN 12390-2:2009	Lab / Site
	Curing cubic specimens for strength tests	BS EN 12390-2:2009	Lab / Site



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
CONCRETE - hardened	Density	BS 1881-114:1983 (withdrawn)	Lab
	Compressive strength of cubes - including curing (loads from 10 to 3000 kN)	BS 1881-116:1983 (withdrawn) BS 1881-111:1983 (withdrawn)	Lab
	Flexural strength (loads from 12.5 to 100 kN)	BS 1881-118:1983 (withdrawn)	Lab
	Compressive strength of cores (loads from 10 to 3000 kN)	BS 1881-120:1983 (withdrawn)	Lab
	Depth of carbonation	BS 1881-201:1986	Site
	Compressive strength of cubes - including curing (loads from 10 to 3000 kN)	BS EN 12390-3:2009 BS EN 12390-2:2009	Lab
	Flexural strength	BS EN 12390-5:2009	Lab
	Density	BS EN 12390-7:2009	Lab
	Depth of penetration of water under pressure	BS EN 12390-8:2009	Lab
	Taking cores	BS EN 12504-1:2009	Site
	Cored specimens - examining and testing in compression (loads from 10 to 3000 kN)	BS EN 12504-1:2009	Lab
	Carbonation	BRE Digest 405:May 1995	Site
	Drilling for dust samples	BRE IP 21/86	Site
CONCRETE - reinforced	Location of reinforcement	BS 1881-204:1988	Site
	Half-cell potential of uncoated reinforcing steel in concrete	ASTM C 876-09	Site
FLOORING	Dampness	BS 8203:2001	Site
	Soundness	BS 8204-1:2003+A1:2009 BRE IP 11/84	Site



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
FOUNDATION PILES	Pile integrity using sonic echo and transient dynamic response techniques	Documented In-House Method No TP IH/PIT	Site
MORTARS, SCREEDS and PLASTERS	Sampling from - conveyors, pumps, etc. - small hoppers, bins or heaps	BS 4551-1:1998 (withdrawn)	Site
	Making test cubes	BS 4551-1:1998 (withdrawn)	Site
	Compressive strength - including curing (loads from 10 to 3000 kN)	BS 4551-1:1998 (withdrawn)	Lab
PAVED SURFACES	Skid resistance value	BS 7976-2:2002	Site
	Measurement of material depths and sampling by coring	Documented In-House Method No On-site Sampling Procedure 11 based on the New Roads and Street Works Act (1991) (Specification for the Reinstatement of Openings in Highways) 3rd edition: April 2010 and Scottish 2nd edition: Oct 2003	Site
PRECAST CONCRETE MASONRY UNITS	Dimensions	BS 6073-1:1981	Lab
	Compressive strength (loads from 10 to 3000 kN)	BS 6073-1:1981	Lab
	Routine rapid control test of compressive strength of blocks by manufacturer (fibre board test) (loads from 10 to 3000 kN)	BS 6073-2:1981	Lab
PRECAST CONCRETE PAVING BLOCKS	Dimensions and plan area	BS 6717-1:1993	Lab
	Compressive strength (loads from 10 to 3000 kN)	BS 6717-1:1993	Lab
ROAD PAVEMENT SURFACES	Texture depth by the sand-patch method	BS 598-105:2000	Site



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**Testing performed by the Organisation at the locations specified**

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
ROAD PAVEMENT SURFACES	Surface regularity using a rolling straight-edge	Specification for Highway Works, HMSO November 2004 Clause 702	Site
SOILS for civil engineering purposes	Moisture content - oven drying method	BS 1377-2:1990	Lab
	Liquid limit - cone penetrometer	BS 1377-2:1990	Lab
	Liquid limit - cone penetrometer - one point	BS 1377-2:1990	Lab
	Plastic limit	BS 1377-2:1990	Lab
	Plasticity index and liquidity index	BS 1377-2:1990	Lab
	Particle size distribution - wet sieving	BS 1377-2:1990	Lab
	Particle size distribution - dry sieving	BS 1377-2:1990	Lab
	Dry density/moisture content relationship (2.5 kg rammer)	BS 1377-4:1990	Lab
	Dry density/moisture content relationship (4.5 kg rammer)	BS 1377-4:1990	Lab
	Dry density/moisture content relationship (vibrating hammer)	BS 1377-4:1990	Lab
	Moisture condition value (MCV)	BS 1377-4:1990	Lab
	MCV - natural moisture content	BS 1377-4:1990	Lab / Site
	MCV/moisture content relation	BS 1377-4:1990	Lab
	California Bearing Ratio (CBR) (loads from 0 to 50 kN)	BS 1377-4:1990	Lab



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**Testing performed by the Organisation at the locations specified**

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
SOILS for civil engineering purposes	In-situ density - sand replacement method (small pouring cylinder)	BS 1377-9:1990	Site
	In-situ density - sand replacement method (large pouring cylinder)	BS 1377-9:1990	Site
	In-situ density - core cutter method	BS 1377-9:1990	Site
	In-situ bulk density - nuclear method - comparative tests	BS 1377-9:1990	Site
	In-situ bulk density - nuclear method - absolute tests	BS 1377-9:1990	Site
	In-situ bulk density - nuclear method - compliance tests	BS 1377-9:1990	Site
	Vertical deformation and strength characteristics by the incremental plate loading test (loads from 1 to 500 kN)	BS 1377-9:1990	Site
	In-situ California Bearing Ratio (CBR) (loads from 0.25 to 28 kN)	BS 1377-9:1990	Site
	Determination of equivalent CBR value using the plate bearing test (loads from 1 to 500 kN)	Design Manual for Roads and Bridges. Volume 7:Pavement Design and Maintenance. IAN 73/06 Rev 1 (2009):Foundations	Site
Dynamic cone penetrometer	Documented In-House Method No IH.HD25 Clause 893	Site	
UNBOUND and HYDRAULICALLY BOUND MIXTURES	Proctor test for mixtures compacted with a 2,5 kg rammer (A) in the Proctor mould (A) using alternative apparatus	BS EN 13286-2:2004	Lab



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
UNBOUND and HYDRAULICALLY BOUND MIXTURES	Proctor test for mixtures compacted with a 2,5 kg rammer (A) in the large Proctor mould (B) using alternative apparatus	BS EN 13286-2:2004	Lab
	Modified Proctor test for mixtures compacted with a 4,5 kg rammer (B) in the Proctor mould (A) using alternative apparatus	BS EN 13286-2:2004	Lab
	Modified Proctor test for mixtures compacted with a 4,5 kg rammer (B) in the large Proctor mould (B) using alternative apparatus	BS EN 13286-2:2004	Lab
	Laboratory reference density and water content - vibrating hammer	BS EN 13286-4:2003	Lab
	Degree of pulverization	BS EN 13286-48:2005	Lab / Site

**End of Uxbridge Laboratory**



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
<b>Warrington Laboratory</b>			
AGGREGATES	Uniformity coefficient (221 2217)	BS 6100-2.2.1:1992	Lab
	Sampling stockpiles of fine aggregates by hand	BS EN 932-1:1997	Site
	Sampling stockpiles of coarse aggregates by hand	BS EN 932-1:1997	Site
	Particle size distribution - sieving method	BS EN 933-1:1997	Lab
	Water content	BS EN 1097-5:2008	Lab
BITUMINOUS MIXTURES for roads and other paved areas	Binder content and grading of mineral aggregate - extraction bottle method: binder directly determined, filler by difference	BS 598-102:2003	Lab
	Percentage refusal density (PRD)	BS 598-104:2005	Lab
	Density of cores	BS 598-104:2005	Lab
	Temperature of bituminous mixtures in the hopper of a paver	BS 598-109:1990	Site
	Temperature of bituminous mixtures in laid-but-not-rolled material	BS 598-109:1990	Site
	Soluble binder content by recovery, using bottle rotation machine, bucket centrifuge type 1 and volume calculation	BS EN 12697-1:2005	Lab
	Particle size distribution	BS EN 12697-2:2002	Lab
	Maximum density - volumetric procedure	BS EN 12697-5:2009	Lab



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
BITUMINOUS MIXTURES for roads and other paved areas	Bulk density - dry - saturated surface dry (SSD) - sealed specimen	BS EN 12697-6:2003	Lab
	Air voids content	BS EN 12697-8:2003	Lab
	Conventional refusal density - vibratory compaction	BS EN 12697-9:2002	Lab
	Percentage refusal density (PRD) - vibratory compaction	BS EN 12697-9:2002	Lab
	Sampling from the material around the augers of the paver	BS EN 12697-27:2001	Site
	Sampling coated chippings from stockpiles	BS EN 12697-27:2001	Site
	Preparation of samples for determining binder content, water content and grading	BS EN 12697-28:2001	Lab / Site
	Laboratory compaction of bituminous mixtures by vibratory compaction	BS EN 12697-32:2003	Lab
	Determination of the thickness of a bituminous pavement - destructive measurement	BS EN 12697-36:2003	Lab
Maximum density	BS DD 228:1996	Lab	
BITUMINOUS ROAD SURFACING	In-situ density - nuclear method	Documented In-House Method No IH/BNDM based upon TRRL SR 754:1982	Site
CONCRETE - fresh	Curing	BS 1881-111:1983 (withdrawn)	Lab / Site
	Sampling fresh concrete on site - composite sample - spot sample	BS EN 12350-1:2009	Site



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**Testing performed by the Organisation at the locations specified**

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
CONCRETE - fresh	Slump	BS EN 12350-2:2009	Site
	Making cubic specimens for strength tests	BS EN 12390-2:2009	Lab / Site
	Curing cubic specimens for strength tests	BS EN 12390-2:2009	Lab / Site
CONCRETE - hardened	Density	BS 1881-114:1983 (withdrawn)	Lab
	Compressive strength of cubes - including curing (loads from 10 to 3000 kN)	BS 1881-116:1983 (withdrawn) BS 1881-111:1983 (withdrawn)	Lab
	Compressive strength of cubes - including curing (loads from 10 to 3000 kN)	BS EN 12390-3:2009 BS EN 12390-2:2009	Lab
	Density	BS EN 12390-7:2009	Lab
	Taking cores	BS EN 12504-1:2009	Site
	Cored specimens - examining and testing in compression (loads from 10 to 3000 kN)	BS EN 12504-1:2009	Lab
	Carbonation	BRE Digest 405:May 1995	Site
	Drilling for dust samples	BRE IP 21/86	Site
CONCRETE - reinforced	Location of reinforcement	BS 1881-204:1988	Site
	Half-cell potential of uncoated reinforcing steel in concrete	ASTM C 876-09	Site
MORTARS, SCREEDS and PLASTERS	Sampling from - conveyors, pumps, etc. - small hoppers, bins or heaps	BS 4551-1:1998 (withdrawn)	Site
	Making test cubes	BS 4551-1:1998 (withdrawn)	Site
	Compressive strength - including curing (loads from 10 to 3000 kN)	BS 4551-1:1998 (withdrawn)	Lab



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
PAVED SURFACES	Drilling of concrete and bituminous cores	Documented In-House Method No IH.034	Site
	Inspection of the reinstatement of openings in highways	Documented In-House Method No C1TP:040 based on the New Roads and Street Works Act (1991) (Specification for the Reinstatement of Openings in Highways) 3rd edition: April 2010	Site
ROAD PAVEMENT SURFACES	Texture depth by the sand-patch method	BS 598-105:2000	Site
	Pavement surface macrotexture depth using a volumetric patch technique	BS EN 13036-1:2010	Site
	Surface regularity using a rolling straight-edge	Specification for Highway Works, HMSO November 2004 Clause 702	Site
SOILS for civil engineering purposes	Moisture content - oven drying method	BS 1377-2:1990	Lab
	Liquid limit - cone penetrometer	BS 1377-2:1990	Lab
	Liquid limit - cone penetrometer - one point	BS 1377-2:1990	Lab
	Plastic limit	BS 1377-2:1990	Lab
	Plasticity index and liquidity index	BS 1377-2:1990	Lab
	Particle density - gas jar	BS 1377-2:1990	Lab
	Particle density - small pycnometer	BS 1377-2:1990	Lab
Particle size distribution - wet sieving	BS 1377-2:1990	Lab	



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
SOILS for civil engineering purposes	Particle size distribution - dry sieving	BS 1377-2:1990	Lab
	Particle size distribution - sedimentation by the hydrometer method	BS 1377-2:1990	Lab
	Dry density/moisture content relationship (2.5 kg rammer)	BS 1377-4:1990	Lab
	Dry density/moisture content relationship (4.5 kg rammer)	BS 1377-4:1990	Lab
	Dry density/moisture content relationship (vibrating hammer)	BS 1377-4:1990	Lab
	Moisture condition value (MCV)	BS 1377-4:1990	Lab
	MCV - natural moisture content	BS 1377-4:1990	Lab / Site
	MCV/moisture content relation	BS 1377-4:1990	Lab
	California Bearing Ratio (CBR) (loads from 0 to 50 kN)	BS 1377-4:1990	Lab
	In-situ density - sand replacement method (large pouring cylinder)	BS 1377-9:1990	Site
	In-situ density - core cutter method	BS 1377-9:1990	Site
	In-situ bulk density - nuclear method - comparative tests	BS 1377-9:1990	Site
	In-situ bulk density - nuclear method - absolute tests	BS 1377-9:1990	Site



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
SOILS for civil engineering purposes	In-situ bulk density - nuclear method - compliance tests	BS 1377-9:1990	Site
	Vertical deformation and strength characteristics by the incremental plate loading test (loads from 1 to 500 kN)	BS 1377-9:1990	Site
	In-situ California Bearing Ratio (CBR) (loads from 0.25 to 28 kN)	BS 1377-9:1990	Site
	Determination of equivalent CBR value using the plate bearing test (loads from 1 to 500 kN)	Design Manual for Roads and Bridges. Volume 7:Pavement Design and Maintenance. IAN 73/06 Rev 1 (2009):Foundations	Site
	Soil suction (filter paper method)	Documented In-House Method No TP.BRE IP4/93	Lab
	Dynamic cone penetrometer	Documented In-House Method No IH.HD25 Clause 893	Site
UNBOUND and HYDRAULICALLY BOUND MIXTURES	Proctor test for mixtures compacted with a 2,5 kg rammer (A) in the Proctor mould (A) using alternative apparatus	BS EN 13286-2:2004	Lab
	Proctor test for mixtures compacted with a 2,5 kg rammer (A) in the large Proctor mould (B) using alternative apparatus	BS EN 13286-2:2004	Lab
	Modified Proctor test for mixtures compacted with a 4,5 kg rammer (B) in the Proctor mould (A) using alternative apparatus	BS EN 13286-2:2004	Lab



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UNBOUND and HYDRAULICALLY BOUND MIXTURES	Modified Proctor test for mixtures compacted with a 4,5 kg rammer (B) in the large Proctor mould (B) using alternative apparatus	BS EN 13286-2:2004	Lab
	Laboratory reference density and water content - vibrating hammer	BS EN 13286-4:2003	Lab
	Moisture condition value	BS EN 13286-46:2003	Lab / Site
	Vertical expansion of California bearing ratio specimens during curing	BS EN 13286-47:2004	Lab
	California bearing ratio / immediate bearing index	BS EN 13286-47:2004	Lab
	Degree of pulverization	BS EN 13286-48:2005	Lab / Site

**End of Warrington Laboratory**



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
<b>Wolverhampton – i54 Site Laboratory</b>			
SOILS for civil engineering purposes	Moisture content - oven drying method	BS 1377-2:1990	Lab
	Liquid limit - cone penetrometer - one point	BS 1377-2:1990	Lab
	Plastic limit	BS 1377-2:1990	Lab
	Plasticity index and liquidity index	BS 1377-2:1990	Lab
	Particle size distribution - wet sieving	BS 1377-2:1990	Lab
	Particle size distribution - dry sieving	BS 1377-2:1990	Lab
	Dry density/moisture content relationship (2.5 kg rammer)	BS 1377-4:1990	Lab
	Dry density/moisture content relationship (4.5 kg rammer)	BS 1377-4:1990	Lab
	Moisture condition value (MCV)	BS 1377-4:1990	Lab
	MCV - natural moisture content	BS 1377-4:1990	Lab / Site
	In-situ bulk density - nuclear method - compliance tests	BS 1377-9:1990	Site
	Vertical deformation and strength characteristics by the incremental plate loading test	BS 1377-9:1990	Site
Determination of equivalent CBR value using the plate bearing test	Design Manual for Roads and Bridges. Volume 7:Pavement Design and Maintenance. IAN 73/06 Rev 1 (2009):Foundations	Site	
<b>End of Wolverhampton – i54 Site Laboratory</b>			



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
<b>Flexible Scope for Establishing Site Laboratories</b>			
AGGREGATES	Sampling stockpiles of fine aggregates by hand	BS EN 932-1:1997	X
	Sampling stockpiles of coarse aggregates by hand	BS EN 932-1:1997	X
	Particle size distribution - sieving method	BS EN 933-1:1997	X
	Flakiness index	BS EN 933-3:1997	X
	Water content	BS EN 1097-5:2008	X
	Temperature of bituminous mixtures in the hopper of a paver	BS 598-109:1990	X
	Temperature of bituminous mixtures in laid-but-not-rolled material	BS 598-109:1990	X
	Soluble binder content by recovery, using bottle rotation machine, bucket centrifuge type 1 and volume calculation	BS EN 12697-1:2005	X
	Particle size distribution	BS EN 12697-2:2002	X
	BITUMINOUS MIXTURES for roads and other paved areas	Maximum density - volumetric procedure	BS EN 12697-5:2009
Bulk density - dry - saturated surface dry (SSD) - sealed specimen		BS EN 12697-6:2003	X
Conventional refusal density - vibratory compaction		BS EN 12697-9:2002	X
Percentage refusal density (PRD) - vibratory compaction		BS EN 12697-9:2002	X



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BITUMINOUS MIXTURES for roads and other paved areas	Sampling from the material around the augers of the paver	BS EN 12697-27:2001	X
	Preparation of samples for determining binder content, water content and grading	BS EN 12697-28:2001	X
	Laboratory compaction of bituminous mixtures by vibratory compaction	BS EN 12697-32:2003	X
	In-situ density - nuclear method	Documented In-House Method No IH/BNDM based upon TRRL SR 754:1982	X
CONCRETE - fresh	Sampling fresh concrete on site - composite sample - spot sample	BS EN 12350-1:2009	X
	Slump	BS EN 12350-2:2009	X
	Flow	BS EN 12350-5:2009	X
	Air content - water column method	BS EN 12350-7:2009	X
	Air content - pressure gauge method	BS EN 12350-7:2009	X
	Making cubic specimens for strength tests	BS EN 12390-2:2009	X
	Curing cubic specimens for strength tests	BS EN 12390-2:2009	X
	CONCRETE - hardened	Compressive strength of cubes - including curing	BS EN 12390-3:2009 BS EN 12390-2:2009
	Density	BS EN 12390-7:2009	X
ROAD PAVEMENT SURFACES	Texture depth by the sand-patch method	BS 598-105:2000	X



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
ROAD PAVEMENT SURFACES	Pavement surface macrotexture depth using a volumetric patch technique	BS EN 13036-1:2010	X
	Surface regularity using a rolling straight-edge	Specification for Highway Works, HMSO November 2004 Clause 702	X
SOILS for civil engineering purposes	Moisture content - oven drying method	BS 1377-2:1990	X
	Liquid limit - cone penetrometer - one point	BS 1377-2:1990	X
	Plastic limit	BS 1377-2:1990	X
	Plasticity index and liquidity index	BS 1377-2:1990	X
	Particle size distribution - wet sieving	BS 1377-2:1990	X
SOILS for civil engineering purposes	Particle size distribution - dry sieving	BS 1377-2:1990	X
	Dry density/moisture content relationship (2.5 kg rammer)	BS 1377-4:1990	X
	Dry density/moisture content relationship (4.5 kg rammer)	BS 1377-4:1990	X
	Dry density/moisture content relationship (vibrating hammer)	BS 1377-4:1990	X
	Moisture condition value (MCV)	BS 1377-4:1990	X
	MCV - natural moisture content	BS 1377-4:1990	X
	MCV/moisture content relation	BS 1377-4:1990	X
	California Bearing Ratio (CBR)	BS 1377-4:1990	X



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
SOILS for civil engineering purposes	In-situ density - sand replacement method (large pouring cylinder)	BS 1377-9:1990	X
	In-situ density - core cutter method	BS 1377-9:1990	X
	In-situ bulk density - nuclear method - comparative tests	BS 1377-9:1990	X
	In-situ bulk density - nuclear method - absolute tests	BS 1377-9:1990	X
	In-situ bulk density - nuclear method - compliance tests	BS 1377-9:1990	X
	Vertical deformation and strength characteristics by the incremental plate loading test	BS 1377-9:1990	X
	In-situ California Bearing Ratio (CBR)	BS 1377-9:1990	X
	Determination of equivalent CBR value using the plate bearing test	Design Manual for Roads and Bridges. Volume 7:Pavement Design and Maintenance. IAN 73/06 Rev 1 (2009):Foundations	X
	Moisture condition value (MCV)	Specification for Highway Works, HMSO November 2006 Clause 632TS TRL Report 273:1997	X
	Natural moisture content MCV	Specification for Highway Works, HMSO November 2006 Clause 632TS TRL Report 273:1997	X
Dynamic cone penetrometer	Documented In-House Method No IH.HD25 Clause 893	X	



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
UNBOUND and HYDRAULICALLY BOUND MIXTURES	Proctor test for mixtures compacted with a 2,5 kg rammer (A) in the Proctor mould (A) using alternative apparatus	BS EN 13286-2:2004	X
	Proctor test for mixtures compacted with a 2,5 kg rammer (A) in the large Proctor mould (B) using alternative apparatus	BS EN 13286-2:2004	X
	Modified Proctor test for mixtures compacted with a 4,5 kg rammer (B) in the Proctor mould (A) using alternative apparatus	BS EN 13286-2:2004	X
	Modified Proctor test for mixtures compacted with a 4,5 kg rammer (B) in the large Proctor mould (B) using alternative apparatus	BS EN 13286-2:2004	X
	Laboratory reference density and water content - vibrating hammer	BS EN 13286-4:2003	X
<b>END</b>			