Schedule of Accreditation

issued by

United Kingdom Accreditation Service

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

0013

Accredited to ISO/IEC 17025:2005

CERAM

Issue No: 037 **Issue date:** 5 February 2007

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DETAIL OF ACCREDITATION

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
PHYSICAL TESTING		
CALCIUM SILICATE (SANDLIME AND FLINTLIME BRICKS)	Dimensions	BS 187:1978
	Compressive strength	BS 187:1978
CLAY BRICKS	Dimensions	BS 3921:1985 BS EN 772-16:2000
	Compressive strength	BS 3921:1985 BS EN 772-1:2000
	Efflorescence	BS 3921:1985
	Water absorption	BS 3921:1985 BS EN 772-7:1998 prEN 771-1:2000:Annex C
	Net and gross dry density	BS EN 772-13 :2000
	Initial rate of suction	BS 3921:1985 BS EN 772-11:2000
	Size of voids	BS 3921:1985
	Net volume and percentage voids	BS EN 772-3:1998
	Freezing test	pr CEN/TS 772-22:2005 Documented In-House Method BCRL-PT3:1992

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
PHYSICAL TESTING		
DAMP PROOF COURSE UNITS	Water absorption	BS EN 772-7:1998
CERAMIC POWDERS	Particle size distribution (0.1 to 100 micron)	BS EN 725-5:1996
CERAMIC TABLEWARE	Water absorption	BS EN 1217:1998
	Chipping and impact test	ASTM C368-88
	Cup handle strength	Documented In-House Method PT 32:2000
	Thermal shock - boiling water test	Documented In-House Method PT 33:2000
	Metal marking	Documented In-House Method PT 38:2004
TABLEWARE	Hand washing, lid fit, water retention, pouring, stability, knob & handle temperature	Documented In-House Method PT 35:2002
	Microwave suitability	Documented In-House Method PT 34
	Freezer to oven usage	Documented In-House Method PT 36
	Freezer to microwave usage	Documented In-House Method PT 37
GLASSWARE	Annealing stress (Polariscope)	Documented In-House Method PT 39
CHINA TABLEWARE	Water absorption	BS 5416:1990
	Translucency	BS 5416:1990
	Translucency	EEC Reg No 679/72

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
PHYSICAL TESTING CLAYS, POWDERS and GRANULAR MATERIALS	Particle size distribution - dry sieving	BS 1796:Part 1:1989 BS 1199 and 1200:1976 ISO 2591-1:1988
REFRACTORY MATERIALS	Particle size distribution - dry sieving	BS 1796:Part 1:1989 ISO 2591-1:1988
	Particle size distribution - washing and sieving	BS 1796:Part 1:1989 ISO 2591-1:1988
	Sieve analysis	BS 1902:Part 3:Section 3.3:1981
	Grain density	BS 1902:Part 3:Section 3.6:1984 (Withdrawn) BS EN 993-17:1999
	Density and porosity	ISO/DIS 18754
	Thermal expansion at temperatures from ambient to 1500°C	BS 1902:Part 5:Section 5.14:1992
	Thermal expansion	BS 1902:Part 5:Section 5.3:1990
	Thermal conductivity - by panel/calorimeter method	BS 1902:Part 5:Section 5.5:1991
REFRACTORY MATERIALS - bricks and blocks	Cold crushing strength	ASTM C133-97
	Modulus of rupture	ASTM C133-97
	Apparent porosity of burned specimens by boiling water	ASTM C20-97
REFRACTORY MATERIALS - ceramic fibre products	Shrinkage on heating	BS 1902:Part 6:1986(1995)
REFRACTORY MATERIALS - dense shaped products	Cold crushing strength	BS EN 993-5:2000

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
PHYSICAL TESTING		
REFRACTORY MATERIALS - dense shaped products (cont'd)	Permanent change in dimensions on heating	BS EN 993-10:1998/ BS 1902:Section 5.10:1998
	Bulk density, true porosity and apparent porosity	BS EN 993-1:1995 BS 1902:Section 3.8:1995
	Refractoriness-under-load	BS EN 993-8:1997
	Creep in compression	BS EN 993-9:1997
REFRACTORY MATERIALS - shaped insulating products	Cold crushing strength	BS EN 1094-5:1995
	Permanent change in dimensions on heating	BS EN 1094-6:2000 BS 1902-5.9:2000
	Bulk density	BS EN 1094-4:1995
REFRACTORY MATERIALS - unshaped refractories used in monolithic construction	Cold crushing strength	BS 1902:Part 7:Section 7.6:1987
	Moisture content	BS 1902:Part 7:Section 7.2:1987
	Bulk density and apparent porosity	BS 1902:Part 7:Section 7.6:1987
	Permanent change in dimensions on heating	BS 1902:Part 7:Section 7.6:1987
REFRACTORY PRODUCTS - dense shaped	Modulus of rupture at ambient temperature	BS EN 993-6:1995 BS 1902:Section 4.4:1995
	Bulk density of granular materials by the mercury method with vacuum	BS EN 993-17:1999
	True density	BS EN 993-2:1995 BS 1902:Section 3.4:1995

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
PHYSICAL TESTING		
VITREOUS CHINA SANITARY APPLIANCES	Water absorption	BS 3402:1969
	Resistance to crazing	BS 3402:1969
VITRIFIED HOTELWARE	Water absorption	BS 4034:1990
	Determination of crazing	BS 4034:1990
WHITEWARES	Thermal expansion	Specifications technically equivalent to BS 1902:Part 1A:1966
	Crazing resistance of ceramic articles	BS EN 13258:2003
	Water absorption	ASTM C373-88 (re-approved 1994)
	Bulk density	ASTM C373-88 (re-approved 1994)
	Apparent porosity	ASTM C373-88 (re-approved 1994)
	Apparent specific gravity	ASTM C373-88 (re-approved 1994)
	Water absorption	BS EN 1217:1998
CONCRETE - hardened	Compressive strength of cubes - including curing	BS 1881:Part 116:1983 BS 1881:Part 111:1983 BS EN 12390-1:2000 (dimensions) BS EN 12390-2:2000 (curing) BS EN 12390-3:2002
	Compressive strength of cores	BS 1881:Part 120:1983 BS EN 12504-1:2000
	Density	BS 1881:Part 114:1983 BS EN 12390-7:2000

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
PHYSICAL TESTING		
MATERIALS AND ARTICLES IN CONTACT WITH FOODSTUFFS	Thermal shock endurance	BS EN 1183:1997
	Crazing resistance of ceramic articles	BS EN 13258:2003
INORGANIC THERMAL INSULATING MATERIALS	Bulk density	BS 2972:1989
PRECAST CONCRETE MASONRY UNITS	Flatness of faces	BS EN 772-20:2000
	Dimensions	BS EN 772-16:2000 BS 6073:Part 1:1981
	Compressive strength	BS EN 772-1:2000 BS 6073:Part 1:1981
	Bending tensile strength	BS EN 772-6:2001
	Transverse strength	BS 6073:Part 1:1981
	Drying shrinkage	BS 6073:Part 1:1981
	Percentage area of voids	BS EN 772-2:1998
	Block density, concrete density and net area of hollow blocks	BS 6073:Part 2:1981
	Net and gross dry density	BS EN 772-13:2000
	Water absorption due to capillary action	BS EN 772-11:2000
	Moisture expansion	BS EN 772-19:2000
	Moisture movement	BS EN 772-14:2002
MANUFACTURED STONE MASONRY UNITS	Dimensions	BS 6457:1984
	Compressive strength	BS 6457:1984

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
PHYSICAL TESTING		
MANUFACTURED STONE MASONRY UNITS (cont'd)	Drying shrinkage	BS 6457:1984
MORTARS, SCREEDS and PLASTERS	Flexural and compressive strength of hardened mortar	BS EN 1015-11:1999
	Compressive strength - including curing	BS 4551:2005
	Bulk density of hardened mortar	BS 4551:2005
	Dry bulk density of hardened mortar	BS EN 1015-10:1999
CLAY and CALCIUM SILICATE PAVERS for flexible pavements	Dimensions	BS 6677:Part 1:1986
CLAY PAVERS	Transverse breaking load	BS EN 1344:2002:Annex D BS 6677:Part 1:1986
	Abrasion resistance	BS EN 1344:2002:Annex E
PRECAST CONCRETE PAVING BLOCKS	Dimensional measurement	BS EN 1338:2003
	Dimensions, thickness, flatness, chamfer and draw, thickness facing layer	BS 6717:Part 1:2001:Annex B1 to B6
	Compressive strength	BS 6717:Part 1:2001
	Transverse strength	BS EN 1338:2003
	Tensile splitting test	BS 6717:Part 1:2001:Annex E
	Water absorption	BS EN 1338:2003
CAST STONE	Compressive strength - cube crushing test	BS 1217:1997
	Capillary absorption	BS 1217:1997

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
PHYSICAL TESTING		
CAST STONE (cont'd)	Initial surface absorption	BS 1217:1997
	Drying shrinkage	BS 1217:1986
CERAMIC FLOOR and WALL TILES	Linear thermal expansion	BS EN ISO 10545-8:1996 BS 6431 :Part 15:1983 EN 103:1991
CLAY ROOFING TILES for discontinuous laying	Geometric characteristics	BS EN 1024:1997
	Flexural strength	BS EN 538:1994
CONCRETE ROOFING TILES and FITTINGS	Transverse strength	BS EN 491:2004
	End of Section	

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
CHEMICAL TESTING		
CLAY PAVERS	Acid resistance	BS EN 1344:2002:Annex G
CLAY BRICKS	Water soluble salt content	Documented In-House Method BCRL-C35:1995 based on BS 3921:1985 using ICP
	Soluble Salts	Documented In-House Method C210 based on BS EN 772-5:2001
	Acid soluble sulphate content	Documented In-House Method BCRL-C36:2002 based on BS 3921:1985 using ICP
CEMENT	Loss on ignition	BS EN 196-2:2005 BS EN 196-2:1995
	Elemental analysis	BS EN 196-2:2005 using X-ray fluorescence spectroscopy BS EN 196-2:1995 using X-ray Fluorescence spectroscopy
	Determination of chloride	BS EN 196-2:2005 BS EN 196-21:1992 Documented In-House Method C211
	Loss on ignition	Documented In-House Method BCRL-C201:2002
	Elemental analysis	Documented In-House Method BCRL-C201:2002 using X-ray fluorescence spectroscopy

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
CHEMICAL TESTING		
CERAMIC WARE, GLASSWARE, GLASS CERAMIC WARE and VITREOUS ENAMEL WARE	Lead and cadmium release	BS 6748:1986 Council Directive 84/500/EEC 15 Oct 1984
	Lead and cadmium release from ceramic ware	BS EN 1388-1:1996
	Lead and cadmium release from silicate surfaces other than ceramic ware	BS EN 1388-2:1996
	Lead and cadmium release	ISO 6486/1:1999 ISO 8391/1:1986
	Metal release from glazed pottery	AS/NZ 4371:1996
	Lead and cadmium release	Documented In-House Method BCRL-C109, based on Proposition 65, California's Safe Drinking Water & Toxic Enforcement Act
	Metal release	Documented In-House Method BCRL-C101:2002 and methods listed in BCRL-"Toxic Metal Release from Ceramic Tableware:2001"
	Metal release (excluding glass conditioning)	Documented In-House Method C216:2004 based on Massachusetts State Legislation
	Metal release from glazed pottery	Documented In-House Method BCRL-C102:2002 based on American FDA specifications using atomic absorption spectrometry or GFAAS
	Metal release from glazed ceramic-ware	Documented In-House Method BCRL-C103:1999 based on Australian specifications using atomic absorption spectrometry

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
CHEMICAL TESTING		
CERAMIC WARE, GLASSWARE, GLASS CERAMIC WARE and VITREOUS ENAMEL WARE (cont'd)	Metal release from glazed pottery	Documented In-House Method BCRL-C104:1998 based on Canadian specifications using atomic absorption spectrometry
	Metal release from glazed pottery	Documented In-House Method BCRL-C105:2002 based on Swedish specifications using atomic absorption spectrometry
	Metal release from glazed ceramic-ware	Documented In-House Method BCRL-C106:1999 based on New Zealand specifications using flame atomic absorption, hydride evolution and ICP methods
	Metal release from glazed pottery	Documented In-House Method BCRL-C107:2002 based on Swiss specifications using atomic absorption spectrometry
CERAMIC FLOOR and WALL TILES - glazed tiles	Lead and cadmium given off by glazed tiles	BS EN ISO 10545-15:1997
CLAYS, POWDERS and GRANULAR MATERIALS	Determination of soluble salts	Documented In-House Method BCRL-C37:2002
REFRACTORY MATERIALS - alumino-silicate refractories	Analysis by X-ray fluorescence	BS EN ISO 12677:2003 BS 1902:Part 9:Section 9.1:1987
REFRACTORY MATERIALS - silica refractories	Analysis by X-ray fluorescence	BS EN ISO 12677:2003 BS 1902:Part 9:Section 9.2:1987
REFRACTORY PRODUCTS	Analysis by X-ray fluorescence - fused cast bead method	BS EN ISO 12677:2003

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
CHEMICAL TESTING		
VOLATILE ORGANIC COMPOUNDS	Chemical analysis by thermal desorption from diffusive or pumped sorbant tubes (GC-MS method)	Documented In-House Method BCRL-C51:1999
	Determination by head space GC-MS in soil, water	Documented In-House Method C 209:2002
AIR	Bulk components	Documented In-House Method BCRL-C72:1999
	Hydrogen sulphide	Documented In-House Method BCRL-C74:2002 using gas chromatography
	Volatile organic compounds	Documented In-House Method BCRL-C51:1999 using GC-MS
LAND-FILL, DIGESTER and RELATED GASES	Hydrogen sulphide	Documented In-House Method BCRL-C74:2002 using gas chromatography
	Analysis for minor components (VOCs)	Documented In-House Method BCRL-C51:1999
	Analysis for major components	Documented In-House Method BCRL-C72:1999
MORTARS, SCREEDS and PLASTERS	Chemical analysis and aggregate grading - ready mixed lime:fine aggregate (sand) for mortars	BS 4551:Part 2:1998 BCRL-C43
	Chemical analysis and aggregate grading - freshly mixed and hardened mortars, screeds and plasters	BS 4551:Part 2:1998 BCRL-C43

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
CHEMICAL TESTING		
NON-METALLIC MATERIALS and PRODUCTS - ceramics, glasses, minerals, slags, ores, dusts and oxides	Determination of trace elements - (General Principles)	Documented In-House Method BCRL-C12:2001 using ICP optical emission spectrometry
	Determination of hydroxide, carbonate and bicarbonate by pH titration	Documented In-House Method BCRL-C16:1996
	Determination of chloride, nitrate and sulphate ion (water soluble)	Documented In-House Method BCRL-C18:2002 using ion chromatography
	Elemental analysis and speciation	Documented In-House Method BCRL-C201:1991 using X-ray fluorescence spectroscopy
	Determination of boron in magnesites	Documented In-House Method BCRL-C33:2001 using ICP optical emission spectrometry
	Soluble metal content of air-borne dusts on air filters	Documented In-House Method BCRL-C42:2002 based on NIOSH P & CAM 173
	Determination of carbonate in ceramic materials - gravimetric method	Documented In-House Method BCRL-C44:2002
	Determination of total carbon and total sulphur	Documented In-House Method BCRL-C45:2002 using a LECO induction furnace
	Determination of fluorine (pyrohydrolytic method)	Documented In-House Method BCRL-C7:2002
	Soluble metal content of air-borne dust on air filters	Documented In-House Method BCRL-C9:2001 using ICP optical emission and atomic absorption spectroscopy, based on MDHS 6/3 : 1998
	Determination of boric oxide, ruthenia and lithia in glazes, glasses and associated materials	Documented In-House Methods BCRL-C15:2002 and BCRL-C22:2002 using fusion/ICP

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
CHEMICAL TESTING		
PIGMENTS for Portland cement and Portland cement products	Iron compounds content, expressed as Fe_2O_3	BS EN 12878:1999
	Titanium dioxide content, expressed as TiO_2	BS EN 12878:1999
	Volatile matter content at 105°C	BS EN ISO 787-2:1995
	Matter soluble in water (cold extraction method)	BS EN ISO 787-8:2001
VITRIFIED CLAY PIPES, FITTINGS, JOINTS and DUCTS	Chemical resistance	BS 65:1991
	Acid resistance	BS 65:1991
HARDCORE and SOILS	Sulphate content	Documented In-House Method BCRL-C41:2001
SOILS, SLUDGES and ASSOCIATED MATERIALS	Elemental analysis	Documented In-House Method BCRL-C26:2002 by microwave digestion
	pH value	Documented In-House Method BCRL-C27:2002 based on MEWAM method - 'The Measurement of Electrical Conductivity and the Laboratory Determination of the pH Value of Natural, Treated and Waste Waters', 1978
	Determination of acid soluble sulphate	Documented In-House Method BCRL-C27:2002 using ICP
	Determination of water soluble chloride	Documented In-House Method BCRL-C27:2002 using Ion Chromatography

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
CHEMICAL TESTING		
SOILS, SLUDGES and ASSOCIATED MATERIALS (cont'd)	Analysis of water soluble extractables - boron	Documented In-House Method BCRL-C29:1998 (Boron, Water-Soluble in Soil - Analysis of Agricultural Materials, Ref Book 427, 1986)
	Analysis of water soluble extractables - leachability	Documented In-House Method BCRL-C29:1998 (DIN 38414:Pt 4:1984)
	Analysis of water soluble extractables - metals	Documented In-House Method BCRL-C29:1998 (MEWAM method - 'Extractable metals in soils and related materials', 1982) using EDTA
	Volatile organic compounds: benzene toluene ethylbenzene o-xylene m/p-xylene hydrocarbons in the range C5-C10	Documented In-House Method BCRL-C209:2002 using GC-MS
	Determination of mercury and selenium	Documented In-House Method BCRL-C54:2001 using PSA millenium and excalibur AF's instruments.
	Determination of sulphide, cyanide, phenol and chrome VI	Documented In-House Method BCRL-C55:2000 by FIA colorimetry
	Extraction of phenols from soils and sand samples	Documented In-House Method BCRL-C62:1998
	Determination of solvent extractable materials	Documented In-House Method BCRL-C64:2002
	Total petroleum hydrocarbons	Documented In-House Method BCRL-C73:2001 using gas chromatography

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
CHEMICAL TESTING		
WATERS and ASSOCIATED MATERIALS	Electrical conductivity pH value	Documented In-House Method BCRL-C78:1995 based on MEWAM method - 'The Measurement of Electrical Conductivity and the Laboratory Determination of the pH Value of Natural, Treated and Waste Waters', 1978
Groundwater and surface water only	Elements: Al, As, B, Ba, Bi, Cd, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Na, Ni, P, Pb, S, Sb, Se, Sn, Sr, Ti, V, Zn	Documented In-House Method BCRL-C24:2002 using ICP (BS EN ISO 11885:1998/ BS 6068:Section 2.60:1998)
	Dissolved anions (excluding fluoride, bromide and orthophosphate)	Documented In-House Method BCRL-C25:1999 using ion chromatography BS EN ISO 10304-1:1995/ BS 6068:Section 2.46:1995
	pH value - electrometric	Documented In-House Method BCRL-C3:2002
	Chemical oxygen demand	Documented In-House Method BCRL-C77:1999 using colorimetry
	Volatile organic compounds: benzene toluene ethylbenzene o-xylene m/p-xylene hydrocarbons in the range C5-C10	Documented In-House Method BCRL-C209:2002 using GC-MS
	Determination of mercury and selenium	Documented In-House Method BCRL-C54:2001 using PSA millenium and excalibur AFs instruments
	Determination of sulphide, cyanide, phenol and chrome VI	Documented In-House Method BCRL-C55:2000 by FIA colorimetry

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
WATERS and ASSOCIATED MATERIALS (cont'd)		
Groundwater and surface water only (cont'd)	Total suspended solids - filtration method - centrifuge method	Documented In-House Method BCRL-C4:2002
	End of Section	
MICROSCOPY		
NON-METALLIC MATERIALS and PRODUCTS - ceramics, glasses, minerals, slags, ores, dusts and oxides	Quantitative determination of phases and pores	Documented In-House Method BCRL-M1:2003
	Grain size	BS EN 623-3:2001 Documented In-House Method BCRL-M3:2003
	Mineral phase identification and microstructure characterisation	Documented In-House Methods BCRL-M22:1997, -M24:2003, -M25:2003 by optical and electron microscopy and energy dispersive microanalysis
	Mineral phase identification and microstructure characterisation	Documented In-House Methods BCRL-M7:2003, -M12:2003, by X-ray diffraction
	Quantitative determination of phases	Documented In-House Methods BCRL-M8:2003, -M9:1998, -M10:2003, by X-ray diffraction
	Determination of crystalline phases in zirconia	DD ENV 14273:2002
	Glaze compression	Documented In-House Method BCRL-M17:2003
	Scratch hardness - by Mohs' scratch test	Documented In-House Method BCRL-M4:2003
	End of Section	

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
SURFACE ANALYSIS		
HIGH – VACUUM COMPATIBLE MATERIALS		Documented In-House Procedures using Secondary Ion Mass Spectrometry (SIMS) and X-Ray Photoelectron Spectroscopy (XPS)
Homogenous layers and substrates	Quantitative or Semi-Quantitative Elemental Analysis for:-	
	Dose measurement, impurity concentration measurement Elements: H to U. Level; ppb to ~ 1At%	SIMS SOPs - OP53 and OP54
Surface and near surface atomic layers	Elemental and Chemical State Analysis for:-	
	Impurity and major component composition measurements Elements: Li to U Level: ~0.1 to 100At%	XPS SOPs – OP52 and CP64
	End of Section	
CTE DIVISION - Tile and Detergent Testing		
ADHESIVES for use with ceramic tiles and mosaics	Resistance to mould growth	BS 5980:1980
	Tensile adhesion strength	BS 5980:1980 BS EN 1348:1999
	Shear adhesion strength	BS 5980:1980 BS EN 1324:1999
	Slip	BS EN 1308:1999
	Open time	BS 5980:1980 BS EN 1346:1999
	Adjustability	BS 5980:1980
	Wetting	BS EN 1347:1999

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
CTE DIVISION - Tile and Detergent Testing		
GROUTS - for use with ceramic tiles	Shear strength	BS EN 12003:1998
	Flexural strength	BS EN 12808-3:2002
	Deformation	BS EN 12002:1998
	Abrasion	BS EN 12808-2:2002
	Shrinkage	BS EN 12808-4:2002
	Water absorption	BS EN 12808-5:2002
WHITEWARES	Resistance to alkaline detergent attack (Decorated Ware)	Documented In-House Method BCRL-WW1:2000
PLASTICS	Surface durability against commercial detergents	Documented In-House Method BCRL-WW1:2000
CERAMIC FLOOR and WALL TILES	Chemical resistance	BS EN ISO 10545-13:1997
	Resistance to stains	BS EN ISO 10545-14:1997
	Dimensions and surface quality	BS 6431:Part 10:1984 EN 98:1991
	Modulus of rupture	BS 6431:Part 12:1983 EN 100:1991
	Modulus of rupture and breaking strength	BS EN ISO 10545-4:1997
	Water absorption	BS 6431:Part 11:1983 EN 99:1991
	Scratch hardness of surface according to Mohs	BS 6431:Part 13:1986 EN 101:1991

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
CTE DIVISION - Tile and Detergent Testing		
CERAMIC FLOOR and WALL TILES (cont'd)	Resistance to thermal shock	BS 6431:Part 16:1983 EN 104:1991 BS EN ISO 10545-9:1996
	Frost resistance	BS 6431:Part 22:1986 EN 202:1991
	Moisture expansion	BS EN ISO 10545-10:1997
	Frost resistance	BS EN ISO 10545-12:1997
	Dimensions and surface quality	BS EN ISO 10545-2:1997
	Water absorption	BS EN ISO 10545-3:1997
	Impact resistance by measurement of coefficient of restitution	BS EN ISO 10545-5:1998
	Slip resistance - pendulum method	BS 7976-2:2002
CERAMIC FLOOR and WALL TILES - glazed tiles	Chemical resistance	BS 6431:Part 19:1984 EN 122:1991
	Crazing resistance	BS 6431:Part 17:1983 EN 105:1991
	Resistance to surface abrasion	BS 6431:Part 20:1984 EN 154:1991 BS EN ISO 10545-7:1999
	Crazing resistance	BS EN ISO 10545-11:1996
CERAMIC FLOOR and WALL TILES - unglazed tiles	Chemical resistance	BS 6431:Part 18:1983 EN 106:1991
	Resistance to deep abrasion	BS 6431:Part 14:1983 EN 102:1991
	Moisture expansion using boiling water	BS 6431:Part 21:1984 EN 155:1991

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
CTE DIVISION - Tile and Detergent Testing		
CERAMIC FLOOR and WALL TILES - unglazed tiles (cont'd)	Resistance to deep abrasion	BS EN ISO 10545-6:1997 BS EN 1344:2002
FLOORS and FLOOR COVERINGS	Anti-slip properties by Inclined Platform Method	Documented In-House Method BCRL-WW14:2002 based on prEN 13552:1999 Method C
	Coefficient of friction	Documented In-House Method BCRL-WW6:1998
	Slip resistance - pendulum method	BS 7976-2:2002
TERRAZZO TILES	Transverse strength	BS 4131:1973
	Water absorption	BS 4131:1973
	End of Section	
CPM DIVISION - Refractories & Industrial Ceramics		
REFRACTORY MATERIALS	Modulus of rupture at elevated temperatures	BS EN 993-7:2000
	Thermal conductivity - by hot-wire method (parallel) at temperatures from ambient to 1475K	ISO 8894-2:1990
REFRACTORY MATERIALS, ADVANCED CERAMICS and COMPOSITES	Strength and displacement - by 3 and 4 point loading method at temperatures from ambient to 1875K	Documented In-House Methods BCRL-R102:1990 and BCRL-R101:2002

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
CPM DIVISION - Refractories & Industrial Ceramics		
REFRACTORY MATERIALS, ADVANCED CERAMICS and COMPOSITES (cont'd)	Bi-axial flexural strength of non-metallic surgical implants	BS 7253:Part 6:1997 ISO 13356:1997 BS 7253:Part 2:1997 ISO 6474:1994
	Flexural strength of advanced ceramics at ambient temperature	ASTM C1161-02c
	Fracture toughness of advanced ceramics at ambient temperature using SENB method	Documented In-House Method R 118
REFRACTORY MATERIALS and PRODUCTS	Stress-strain-time relation - at temperatures from ambient to 1875K	Documented In-House Method BCRL-R100:1990
	Work of fracture	Documented In-House Method BCRL-R114:2000
CONCRETE - hardened	Youngs modulus from ambient to 1470K	Documented In-House Method BCRL-R117:2002 using resonant frequency
	Modulus of rigidity	Documented In-House BCRL-R117:2002 using resonant frequency
	Poisson's ratio	Documented In-House BCRL-R117:2002 using resonant frequency
INORGANIC THERMAL INSULATING MATERIALS	Dimensions	BS 2972:1989
	Resistance to compression	BS 2972:1989
	Flexural strength	BS 2972:1989

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
CPM DIVISION - Refractories & Industrial Ceramics		
METALS	Youngs modulus from ambient to 1470K	Documented In-House Method BCRL-R117:2002 using resonant frequency
	Modulus of rigidity	Documented In-House Method BCRL-R117:2002 using resonant frequency
	Poisson's ratio	Documented In-House Method BCRL-R117:2002 using resonant frequency
NON-METALLIC MATERIALS and PRODUCTS - ceramics, glasses, minerals, slags, ores, dusts and oxides	Youngs modulus from ambient to 1470K	Documented In-House Method BCRL-R117:2002 using resonant frequency
	Modulus of rigidity	Documented In-House Method BCRL-R117:2002 using resonant frequency
	Poisson's ratio	Documented In-House Method BCRL-R117:2002 using resonant frequency
PRECAST CONCRETE PAVING BLOCKS	Youngs modulus from ambient to 1470K	Documented In-House Method BCRL-R117:2002 using resonant frequency
	Modulus of rigidity	Documented In-House Method BCRL-R117:2002 using resonant frequency
	Poisson's ratio	Documented In-House Method BCRL-R117:2002 using resonant frequency
	End of Section	

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
CERAM BUILDING TECHNOLOGY		
DAMP-PROOF COURSE MATERIALS	Shear strength	BS EN 1052-4:2000
	Flexural bond strength	DD86:Part 1:1983
	Short-term shear strength	DD86:Part 1:1983
STRUCTURAL FIXINGS	Tensile loading	BS 5080:Part 1:1993
	Resistance to loading in shear	BS 5080:Part 2:1986
	Tension testing of metal anchors and metal injection anchors	ETAG No 001:1997 Guidelines for European Technical Approval of Metal Anchors for use in Concrete: Annex A
	Strength and deflection of joist hangers - timber to masonry	BS 6178:Part 1:1990
	Load capacity and load deflection of joist hangers	BS EN 846:8:2000
THREE-DIMENSIONAL NAILING PLATES	Strength and deformation characteristics	ETAG 015 : September 2002 BS EN 26891:1991 and EOTA Technical Report TR 016:February 2002
	Moisture content, density and standard atmosphere for conditioning of timber members	ISO 3130:1975 ISO 3131:1975 ISO 554:1976
PLATFORM FLOORS - full access floor systems	Concavity and convexity	PSA MOB PF2PS/SPU Section T1.00 March 1992
	Twist	PSA MOB PF2PS/SPU Section T2.00 March 1992
	Panel squareness	PSA MOB PF2PS/SPU Section T3.00 March 1992
	Small scale fire test	PSA MOB PF2PS/SPU Section T20.00 March 1992

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
CERAM BUILDING TECHNOLOGY		
PLATFORM FLOORS - full access floor systems (cont'd)	Thermal properties	PSA MOB PF2PS/SPU Section T20a.00 March 1992
	Safety factor load	PSA MOB PF2PS/SPU Section T11.00 March 1992
	Pedestal strength - horizontal (moment of 90Nm)	PSA MOB PF2PS/SPU Section T15.00 March 1992
	Pedestal strength - vertical	PSA MOB PF2PS/SPU Section T16.00 March 1992
	Uniformly distributed load	PSA MOB PF2PS/SPU Section T10.00 March 1992
	Pedestrian dynamic load	PSA MOB PF2PS/SPU Section T14.00 March 1992
	Effect of temperature	PSA MOB PF2PS/SPU Section T17.00 March 1992
	Effect of humidity	PSA MOB PF2PS/SPU Section T18.00 March 1992
	300mm square loading	PSA MOB PF2PS/SPU Section T7.00 March 1992
	25mm square point loading	PSA MOB PF2PS/SPU Section T8.00 March 1992
	25mm square point loading on perimeter cut panel edge	PSA MOB PF2PS/SPU Section T8a.00 March 1992
	Four point loading	PSA MOB PF2PS/SPU Section T9.00 March 1992
	Soft body impact	PSA MOB PF2PS/SPU Section T12.00 March 1992
	Hard body impact	PSA MOB PF2PS/SPU Section T13.00 March 1992
	Free play in pedestals	PSA MOB PF2PS/SPU Section T5.00 March 1992

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
CERAM BUILDING TECHNOLOGY		
PLATFORM FLOORS - full access floor systems (cont'd)	Air leakage rate	PSA MOB PF2PS/SPU Section T6.00 March 1992
LINTELS	Load test (flexural resistance - non destructive [excluding timber lintels] and collapse)	BS 5977:Part 2:1983
	Load test (shear load resistance - non destructive and collapse)	BS 5977:Part 2:1983
	Flexural resistance and shear resistance	BS EN 846-9:2000
	Dimensions and bow	BS EN 846:11:2000
MASONRY	Characteristic compressive strength	BS 5628:Part 1:1992
	Compressive strength	BS EN 1052-1:1999
	Characteristic flexural strength	BS 5628:Part 1:1992
	Initial shear strength	BS EN 1052-3:2002
	Flexural strength	BS EN 1052:Part 2:1999
	Lateral strength - uniformly distributed loads	Documented In-House Method BCRL-TN284:1979
	Bond strength of prefabricated bed-joint reinforcement in mortar joints	BS EN 846-2:2000
	Cyclic freezing resistance	Documented In-House Method BCRL-BM1:1993
	Freeze/thaw resistance	prEN 772-22:2004
CLAY PAVERS	Dimensions	BS EN 1344:2002:Annex B
	Skid resistance value	BS 6677:Part 1:1986 BS 7976-2:2002
	Freeze thaw resistance	BS EN 1344:2002:Annex C

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
CERAM BUILDING TECHNOLOGY		
CLAY PAVERS (cont'd)	Unpolished slip/skid resistance	BS EN 1344:2002:Annex F
FIBRE-CEMENT SLATES	Freeze thaw resistance	BS EN 492:2004
CLAY ROOFING TILES and FITTINGS	Cyclic freezing test	BS EN 539-2:2004
CONCRETE ROOFING TILES and FITTINGS	Freeze-thaw resistance	BS EN 491:2004
WALL TIES	Tensile strength Compressive strength Tensile and compressive load capacity and load displacement characteristics (couplet test) Tensile and compressive load capacity and load displacement characteristics (single end test)	DD 140:Part 1:1986 DD 140:Part 1:1986 BS EN 846-5:2000 BS EN 846-6:2000
SHEAR TIES AND SLIP TIES	Shear load capacity and load displacement characteristics (couplet test for mortar joint connection)	BS EN 846-7:2000
ANCILLARY COMPONENTS FOR MASONRY - horizontal restraint straps - masonry specimens - timber specimens - vertical restraint straps - timber wall plate or truss - masonry specimens	Load capacity and load deflection characteristics	BS EN 846-4:2002
END		