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DETAIL OF ACCREDITATION

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
ALL VERTICAL TEST ELEMENTS Maximum test area 1.9 m high by 2.4 m wide	All Measurements: Cold air temperature - 0 °C to 10 °C Hot air temperature - max 25 °C	BBA Guarded Hot Box No 2 designed and operated to BS EN ISO 8990:1996 Documented In-House Methods agreed with the Client based on BS EN ISO 8990:1996 or BS EN ISO 12567-1:2010 or BS EN ISO 12567-2:2005
Homogeneous panels	U-value - 0.1 to 10 (W/m^2K) Best measurement uncertainty: - +/- 5%	
Heterogeneous panels	U-value - 0.1 to 10 (W/m^2K) Best measurement uncertainty will depend on the performance of the element tested	
Test elements smaller than the test area (maximum size 1.7 m high by 2.2 m wide)	U-value - 0.1 to 10 (W/m^2K) Best measurement uncertainty: - +/- 5.5%	
Whole window systems (maximum size 1.7 m high by 2.2 m wide)	U-value - 0.1 to 10 (W/m^2K) Best measurement uncertainty: - +/- 5.5%	BS EN ISO 12567-1:2010 and BS EN ISO 12567-2:2005

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
ALL VERTICAL, SLOPING AND HORIZONTAL TEST ELEMENTS (excluding masonry walls) (upward heat flow only) Maximum test area 2.5 m high x 3.0 m wide	All Measurements: Cold air temperature: - 0 °C to 10 °C Hot air temperature: - max 25 °C	BBA Guarded Hot Box No 1 designed and operated to BS EN ISO 8990:1996 Documented In-House Methods agreed with the Client based on BS EN ISO 8990:1996 or BS EN ISO 12567-1:2010
Homogeneous panels	U-value: - 0.1 to 10 (W/m^2K) Best measurement uncertainty: - +/- 5%	
Heterogeneous panels	U-value: - 0.1 to 10 (W/m^2K) Best measurement uncertainty will depend on the performance of the element tested	
Test elements smaller than the test area (maximum size 2.3 m high by 2.8 m wide)	U-value: - 0.1 to 10 (W/m^2K) Best measurement uncertainty: - +/- 5.5%	
Whole window systems (maximum size 2.3 m high by 2.8 m wide)	U-value: - 0.1 to 10 (W/m^2K) Best measurement uncertainty: - +/- 5.5%	BS EN ISO 12567-1:2010
HOMOGENEOUS and INHOMEGENEOUS MATERIALS	All measurements: Specimen thickness - 10-300 mm Mean temperature range - 273K to 298K Thermal conductivity measurement: - 0.01 to 0.10 W/(m⊙K) Thermal resistance measurement: - 17 to 0.5 m^2⊙K/W Best measurement uncertainty - +/- 1.5%	BS ISO 8301 BS EN 12664:2001 BS EN 12667:2001 BS EN 12939:2001 and ASTM C518-10 using a 762 mm square heat flow meter facility

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
SOLAR PANEL SYSTEMS	Resistance to wind uplift	MCS 012:2013 BS EN 14437:2004
	Weathertightness	MCS 012:2013
PLASTICS	Mechanical Tests	
Films and sheets up to 1.0 mm thickness	Tensile properties *(loads from 1 to 100 kN)*	BS EN ISO 527-3:1996 BS 2782:Part 3 Method 326E:1995
Films and sheets from 1.0 to 3.0 mm thickness	Tensile properties *(loads from 1 to 100 kN)*	Documented In-House Method based on BS EN ISO 527-3:1996
Rigid plastics	Flexural properties	BS EN ISO 178:2010+A1:2013
Film and sheeting	Tear strength - by trouser tear method for material thickness 0.25 to 1.00 mm	BS EN ISO 6383-1:2004
	- by trouser tear method	Documented In-House Method based on BS EN ISO 6383-1:2004
Rigid cellular materials	Compressive strength *(loads up to 100 kN)*	BS ISO 844:2009
Vulcanised or thermoplastic rubber	Tear strength *(loads up to 100 kN)*	BS ISO 34-1:2010
Adhesives	Bond strength (T Peel) *(loads up to 100 kN)*	BS EN ISO 11339:2010
Geotextiles and geotextile-related products	Static puncture *(loads up to 25 kN)*	BS EN ISO 12236:2006
Vulcanised or thermoplastic rubber	Hardness	BS ISO 48:2010
Solid vulcanised or thermoplastic rubber	Dimensions	BS ISO 23529:2010
Bitumen, plastic and rubber flexible sheets for waterproofing	Water Tightness Water Pressure	BS EN 1928:2000; Method A Network Rail NR/L3/CIV/041: Issue 3
	Water Penetration > 60 kPa	SG7 Guidelines Document:August 2012

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
WATERPROOFING MEMBRANES AND SYSTEMS FOR CONCRETE BRIDGE DECKS	Mechanical Tests	
	Tensile adhesion (loads up to 50 kN)	SG7 Guidelines Document:August 2012
	Impact	SG7 Guidelines Document:August 2012
WATERPROOFING SYSTEMS FOR UNDERLINE BRIDGE DECKS	Physical Tests	
	Chloride ion penetration Conditioning	Network Rail NR/L3/CIV/041: Issue 3
	Crack cycling Conditioning	Network Rail NR/L3/CIV/041: Issue 3
	Exposure to freeze/thaw cycles Conditioning	Network Rail NR/L3/CIV/041: Issue 3
	Accelerated ageing	Network Rail NR/L3/CIV/041: Issue 3
	Exposure to fuel oil Conditioning	Network Rail NR/L3/CIV/041: Issue 3
	Exposure to bitumen Conditioning	Network Rail NR/L3/CIV/041: Issue 3
	Exposure to ultra violet light Conditioning	BS 3900 - F16:2007 BS EN ISO 11507:2007
THERMAL INSULATING PRODUCTS FOR BUILDING APPLICATIONS	Physical Tests	
	Determination of thickness	BS EN 823:2013
	Determination of flatness	BS EN 825:2013
	Determination of compression behaviour	BS EN 826:2013
	Determination of compressive creep	BS EN 1606:2013
	Determination of short term water absorption by partial immersion	BS EN 1609:2013:Method A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
THERMAL INSULATING PRODUCTS FOR BUILDING APPLICATIONS (cont'd)	Physical Tests (cont'd)	
	Determination of long term water absorption by immersion	BS EN 12087:2013:Methods 1A and 2A
	Determination of long term water absorption by diffusion	BS EN 12088:2013
THERMOPLASTIC PIPES up to 1000 mm diameter	Mechanical and Physical Tests	
	Short-term stiffness	BS EN ISO 9969:2007
	Flexibility of a pipe ring	BS EN ISO 13968:2008
THERMOPLASTICS STRUCTURED WALL PIPES, JOINTS and COUPLERS WITH A SMOOTH BORE for GRAVITY SEWERS Pipes 150 mm to 375 nominal internal diameter	Resistance to combined temperature and external loading using a box loading test (BLT)	WIS No 4-35-01, Issue 1 Appendix A
EXTERNAL RIB-REINFORCED PVC-U-PIPES	Mechanical and Physical Tests	
Pipes up to 250 mm nominal internal diameter	Short-term stiffness	WIS No. 4-31-05 Issue 2 Appendix B
	Flexibility of a pipe ring	WIS No. 4-31-05 Issue 2 Appendix E
	Resistance to combined temperature and external loading using a box loading test (BLT)	WIS No. 4-31-05, Issue 2 Appendix F
	Physical Tests	
UNDERGROUND SEWER and DRAIN PIPES, FITTINGS and ACCESSORIES	Box loading (0-100 kN) Thermal cycling (temperature from ambient to 371K and flow rates: - cold 6-44 litres/min - hot 6-50 litres/min)	Documented In-House Method based on BS 4660:2000: Appendix D

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
	Physical Tests	
UNPLASTICISED PVC SOIL and VENTILATING PIPES, FITTINGS and ACCESSORIES of 82.4 mm MINIMUM MEAN OUTSIDE DIAMETER	Thermal cycling (temperature from ambient to 371 K and flow rates: - cold 6-44 litres/min - hot 6-50 litres/min)	BS 4514:2001:Clause 6.6 and Documented In-House Methods based on BS 4514:2001
	Physical Tests	
POLYPROPYLENE and PLASTICS WASTE PIPE and FITTINGS	Thermal cycling (temperature from ambient to 371 K and flow rates: - cold 6-44 litres/min - hot 6-50 litres/min	BS 5254:1976:Appendix E BS 5255:1989:Appendix A and Documented In-House Methods based on BS 5254:1976 and BS 5255:1989
	Physical Tests	
THERMOPLASTICS PIPES and ASSOCIATED FITTINGS for HOT and COLD WATER for DOMESTIC PURPOSES and HEATING INSTALLATIONS in BUILDINGS	Thermal cycling (temperature from ambient to 390 K and pressure 0 to 25 bar)	BS 7291:2010:Part 1:Appendix C ISO 10508:Appendix A and B BS EN 12293:2000 BS 2782-11:2000:Method 112.3T:2000 Documented In-House Methods based on the above standards
	Physical Tests	
UNPLASTICISED PVC UNDERGROUND DRAINPIPES and FITTINGS	Thermal cycling (temperature from ambient to 371 K and flow rates: - cold 6-44 litres/min - hot 6-50 litres/min)	BS 4660:2000:Appendix E Documented In-House Methods agreed with the Client
	Physical Tests	
PLASTICS INSPECTION CHAMBERS for DRAINS	Thermal cycling (temperature from ambient to 371 K and flow rates: - cold 6-44 litres/min - hot 6-50 litres/min)	BS 7158:2001 Annex E Documented In-House Methods agreed with the Client
	Physical Tests	
THERMOPLASTICS PIPING SYSTEMS FOR SOIL AND WASTE DISCHARGE INSIDE BUILDINGS	Thermal cycling (temperature from ambient to 371 K and flow rates: - cold 6-44 litres/min - hot 6-50 litres/min)	BS EN 1055:1996 BS 2782:Part 11:1996: Method 1111A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
	Physical Tests	
GULLIES FOR BUILDINGS	Thermal cycling (temperature from ambient to 371 K and flow rates: - cold 6-44 litres/min - hot 6-50 litres/min)	BS EN 1253-2:2003:Clause 9.1
	Physical Tests	
CAST IRON SPIGOT DRAINPIPES and FITTINGS	Thermal cycling (temperature from ambient to 371 K and flow rates: - cold 6-44 litres/min - hot 6-50 litres/min)	BS EN 877:1999+A1:2006: Clause 5.7.2.7 Documented In-House Methods based on BS EN 877:1999 + A1:2006
	Physical Tests	
CAVITY WALLS filled with thermal insulation materials	Water resistance	Water Resistance Detailed Operating Procedure
EXTERNAL THERMAL INSULATION COMPOSITE SYSTEMS with RENDERING	Hygrothermal behaviour	ETAG 004:2013
ELEMENTS OF CLADDING, CURTAIN WALLING, WINDOWS and DOORS	Elements up to 2.5 m high and 3.0 m wide	BS 6375-1:2009 and the specified tests.
	(Maximum pressure ± 3000 Pa)	BS EN 12210:2000 and the specified tests
	Air permeability	BS EN 1026:2000
	Water tightness	BS EN 1027:2000
	Wind resistance	BS EN 12211:2000
	Wind resistance	BBA MOAT No. 1 Documented In-House Methods based on the above standards
WINDOWS and DOORS	Weathertightness	BS 6375-1:2009
	Air permeability	BS EN 1026:2000
	Watertightness	BS EN 1027:2000
	Resistance to windload	BS EN 12211:2000
	Load bearing capacity	BS EN 14351-1:2006+A1:2010 :clause 4.8 BS 6375-2:2009:clause 5.3 and 6.4

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
DOOR ASSEMBLIES - external, single leaf	<u>Physical Tests</u> Abusive forces on handles Basic security test Closure against obstruction Cyclic operation test Operating forces Resistance to hard body impact Resistance to static torsion Resistance to soft and heavy body impact Resistance to vertical loads Slamming resistance Weathertightness Thermal Cyclic Test	 PAS 23-1:1999
EXTERNAL DOORSETS -single and double leaf -single swing -hinged -inward and outward opening -with or without integral side panels and fanlights	<u>Physical Tests</u> Security hardware and cylinder test (Parts 1 & 2) Manipulation test Infill manual test Infill mechanical test Manual cutting test Mechanical loading test Manual check test Soft body impact test Hard body impact test	 PAS 24:2012
LETTER PLATES	<u>Security of fixings</u>	PAS 24:2012 BS EN 13724:2013
WINDOWS, SINGULAR & MULTILIGHT -top hung (open out), side hung (open in and open out), bottom hung (open in), butt hinged -top and side hung (open out) projected -top hung fully reversible -tilt and turn and turn and tilt -vertical sliding -fixed and dummy vents -double opening (French Windows)	Manipulation test Infill manual test Infill mechanical test Mechanical loading test Manual check test	PAS 24:2012

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
WINDOWS - casement, tilt/turn, top swing and vertical sliding	<u>Physical Tests</u> (enhanced security performance) Glazing removal - manual Glazing removal - mechanical Manipulation Mechanical loading Manual check	 BS 7950:1997 Documented In-House Methods based on BS 7950 and agreed with the customer
GENERAL	Corrosion tests in artificial atmospheres - NSS (neutral salt spray)	BS EN ISO 9227:2012
END		