

Schedule

Element Construction Testing (S) Pte. Ltd.
58 Sungei Kadut Loop
Singapore 729501

Certificate No. : LA-2008-0422-B
Issue No. : 22
Date : 14 January 2025
Expiry of Certificate : 11 September 2026
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FIELD OF TESTING : Civil Engineering Testing

MATERIALS / PRODUCTS TESTED	TESTS / PROPERTIES	STANDARD METHODS / TECHNIQUES / EQUIPMENT	SIGNATORY
A. AGGREGATE	1. Petrographic Examination of Aggregates for Concrete	BS EN 932-3:2022 BS 7943:1999 BS 812-104:1994 ASTM C295/C295M-19	) SW, JAA)))
	2. Potential Alkali Reactivity (Mortar Bar Method)	ASTM C1260-23	) SW, JAA
	3. Particle Size Distribution / Sieve Analysis	SS 73:1974 ASTM C136/C136M-19 BS 812-103.1:1985 BS EN 933-1:2012 ASTM D546-17 (ASTM D242/D242M-19)	) SW)))))
	4. Fineness Modulus	ASTM C136/C136M-19	) SW, ZMM
	5. Clay, Silt and Dust (Decantation Method)	SS 73:1974 (Except Method A) BS 812-103.1:1985 ASTM C117-23 BS EN 933-1:2012	) SW, ZMM)))
	6. Moisture Content (Oven Dried Method)	SS 73:1974 BS 812-109:1990 BS EN 1097-5:2008) SW))
	7. Bulk Density	BS EN 1097-3:1998 BS 812-2:1995 SS 73:1974) SW, ZMM

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A. AGGREGATE	8. Relative Density & Water Absorption	BS EN 1097-6:2022 BS 812-2:1995 SS 73:1974 ASTM C127-24 ASTM C128-22 (Gravimetric Method)) SW)))))
	9. Sampling	BS EN 932-1:1997 BS 812-102:1989 SS 73:1974	) SW))
	10. Organic Impurities	ASTM C40/C40M-20 SS 73:1974	) SW)
	11. Shell Content	SS 73 Part 6:1992 BS 812-106:1985 BS EN 933-7:1998	) SW))
	12. Flakiness Index	SS 73 Part 5.1:1992 BS EN 933-3:2012 BS 812-105.1:1989	) SW, ZMM))
	13. Elongation Index	SS 73:1974 BS 812-105.2:1990	) SW,)
	14. Impact Value	SS 73: 1974 BS 812-112:1990	) SW, ZMM)
	15. Crushing Value	SS 73: 1974 BS 812-110:1990	) SW, ZMM)
	16. 10% Fines Value	SS 73: 1974 BS 812-111:1990	) SW, ZMM)
	17. Los Angeles Abrasion	SS 73: 1974 ASTM C131/C131M-20 BS EN 1097-2:2020 ASTM C535-16	) SW)))
	18. Soundness Test	ASTM C88/C88M-24 BS 812-121:1989 BS EN 1367-2:2009 SS 73 Part 21:1992) SW, ZMM)))
	19. Shape & Surface Texture	SS 73:1974) SW

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A. AGGREGATE	20. Drying Shrinkage	SS 73 Part 20:1992 BS EN 1367-4:2008 BS 812-120:1989) SW))
	21. Assessment of Fines – Methylene Blue Test	BS EN 933-9:2022	) SW
	22. Shape Index	BS EN 933-4:2008	) SW
	23. Angularity Number	SS 73:1974	) SW
	24. Assessment of Fines - Sand Equivalent Test	BS EN 933-8:2012+A1:2015 ASTM D2419-22	) SW)
	25. Constituents of Coarse Recycled Aggregates	BS EN 933-11:2009 SS 544: Part 2:2019+A1:2021	) SW)
	26. Organic Contaminators by Mortar Method	BS EN 1744-1:2009+A1:2012, Clause 15.3	) SW
	27. Coral Content (Shell content in fine aggregate)	SANS 5840:2.02ED 2008(R2014)	) SW)
	28. Aggregate Abrasion Value	BS 812-113:1990 BS EN 1097-8:2020	) SW)
	29. Influence of Recycled Aggregate Extract on the Initial Setting Time of Cement	BS EN 1744-6:2006	) SW
	30. Percentage of Fractured Particles in Coarse Aggregate	ASTM D5821-13(2017)	) SW
	31. Flat Particles, Elongated Particles, or Flat and Elongated Particles in Coarse Aggregate	ASTM D4791-19(2023)	) SW
	32. Clay Lumps and Friable Particles in Aggregates	ASTM C142/C142M-17(2023)	) SW
	33. Polished Stone Value	BS EN 1097-8:2020 BS 812-114:1989) SW)
34. Lightweight Particles in Aggregate	ASTM C123/C123M-23) SW	

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A. AGGREGATE	35. Particle Density of Filler	BS EN 1097-7:2022) SW
	36. Potential Alkali Reactivity of Aggregates and Effectiveness of ASR Mitigation Measures (Miniature Concrete Prism Test. MCPT)	AASHTO T 380-22) SW, JAA
	37. Length Change of Concrete Due to Alkali-Carbonate Rock Reaction	ASTM C1105-23a	) SW, JAA
	38. Determination of Length of Change Due to Alkali-Silica Reaction	ASTM C1293/C1293M-23a	) SW, JAA
	39. Determination of Potential Alkali-Silica Reactivity of Combinations of Cementitious Materials and Aggregate (Accelerated Mortar-Bar Method)	ASTM C1567-23	) SW, JAA
B. SOIL	1. Shear Strength by Direct Shear (Shearbox Method)	BS 1377-7:1990 Section 4.5.4 BS 1377-2:2022 Section 25 BS EN ISO 17892-10:2018	) SW)
	2. Compaction Test (Maximum and Minimum Dry Density)	BS 1377-2:2022 (Section 12)	) SW
	3. Compaction Test (Dry Density / Moisture Content)	BS 1377-2:1990 Section 3 BS 1377-2:2022 Section 11 ASTM D1557-12(2021) ASTM D698-12(2021) AASHTO T180-22 AASHTO T99-22	) SW, ROS
	4. Unconfined Compressive Strength	BS 1377-7:1990 Section 7 BS 1377-2:2022 Section 27 ASTM D2166/D2166M-24 BS EN ISO 17892-7:2018	) SW, ROS)))
	5. Moisture Content	BS 1377-2:1990 Section 3 ASTM D4959-24 BS 1377-2:2022 BS EN ISO 17892-1:2014+A1:2022) SW, ROS)))

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B. SOIL		ASTM D2216-19 ASTM D4944-18))
	5. Moisture Content	ASTM D4643-17) SW, ROS
	6. Liquid Limit	BS 1377-2:1990 Section 4.3 BS 1377-2:2022 Section 5 ASTM D4318-17e1 ISO 17892-12:2018+A2:2022 BS EN ISO 17892-12:2018 +A2:2022) SW, ROS))))
	7. Plastic Limit & Plasticity Index	BS 1377-2:1990 Section 5 BS 1377-2:2022 Section 6 ASTM D4318-17e1 ISO 17892-12:2018+A2:2022 BS EN ISO 17892-12:2018+A2: 2022	) SW, ROS))))
	8. Linear Shrinkage	BS 1377-2:1990 Section 6.5 BS 1377-2:2022 Section 7	) SW,ROS
	9. Particle Size Distribution	BS 1377-2:1990 Section 9.2, 9.3 & 9.5 BS 1377-2:2022 Section 10 BS EN ISO 17892-4:2016	) SW, ROS))
	10. California Bearing Ratio	BS 1377-2:2022, Section 15 ASTM D1883-21	) SW, ROS)
	11. Particle Density	BS 1377-2:1990 Section 8 BS 1377-2:2022 Section 9 BS EN ISO 17892-3:2015	) SW, ROS))
	12. Percentage of Fines (Finer than 75 micron)	ASTM D1140-17	) SW
	13. Sand Replacement	BS 1377-9:1990, Method 2.1 & 2.2 ASTM D1556/D1556M-15e1 & ASTM D4944-18	) SW, AC))
	14. In-place Density & Water Content (NDG)	ASTM D6938-23 ASTM D2922-05 ASTM D3017-05 BS 1377-9:1990 Clause 2.5) SW, AC)))
	15. Plate Loading Test	BS 1377-9:1990 Method 4.1) AC

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B. SOIL	16. Density	BS 1377-2:1990 Section 7 BS 1377-2:2022 Section 8 BS EN ISO 17892-2:2014) SW))
	17. Permeability in Triaxial Cell	BS 1377-6:1990 Section 6 BS 1377-2:2022 Section 23 BS EN ISO 17892-11:2019	) SW))
	18. Unconsolidated Undrained Triaxial (UU)	BS 1377-7:1990 Section 8 BS 1377-2:2022 Section 28 BS EN ISO 17892-8:2018 ASTM D2850-24	) SW)))
	19. Consolidated Undrained Triaxial (CU)	BS 1377-8:1990 Section 7 BS 1377-2:2022 Section 29 BS EN ISO 17892-9:2018 ASTM D4767-11(2020)	) SW)))
	20. Consolidated Drained Triaxial (CD)	BS 1377-8:1990 Section 8 BS 1377-2:2022 Section 30 BS EN ISO 17892-9:2018 ASTM D7181-20	) SW)))
	21. Oedometer (One - Dimensional Consolidation)	BS 1377-5:1990 Section 3 BS 1377-2:2022 Section 16 BS EN ISO 17892-5:2017 ASTM D2435/D2435M-11(2020)	) SW)))
	22. Falling Head Permeability	KH. Head Vol. 2 BS EN ISO 17892-11:2019	) SW)
	23. Bentonite content in soil	EL-A-OP-CMT-SIN-MD224 Issue 1 July 2023	) SW
	24. Soil Resistivity Using the Wenner Four-Electrode Method	ASTM G57-20 (BS EN IEC 62561-7:2018)	) SW)
	25. Corrosion Rates by Potentiodynamic Polarization Resistance Measurements	ASTM G59-23 ASTM G102-23 (BS EN IEC 62561-7:2018)	) SW))
26. Constant Head Permeability	BS 1377-5:1990 Section 5 BS 1377-2:2022 Section 23 KH. Head Vol. 2 BS EN ISO 17892-11:2019) SW)))	
27. Redox potential	BS 1377-3: 2018 +A1 2021 Clause 14) SW	

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C. CONCRETE 1. Fresh Concrete 1. Fresh Concrete	1. Slump Test	SS 78: Pt A2: 1987 BS 1881-102:1983 BS EN 12350-2:2019) SW, WCK))
	2. Density (Fresh Concrete)	SS 78: Pt A7: 1987 BS 1881-107:1983 BS EN 12350-6:2019	) SW, WCK))
	3. Sampling	BS EN 12350-1: 2019 SS 78 Part A1:1987 BS 1881-101:1983	) SW, WCK))
	4. Air Content-Pressure Methods	BS EN 12350-7: 2019 SS 78 Part A6: 1987 BS 1881-106:1983	) SW, WCK))
	5. Flow Table Test	SS 78: Pt A5: 1987 BS 1881-105:1984 BS EN 12350-5:2019	) SW, WCK))
	6. Degree of Compactibility / Consistence	BS EN 12350-4:2019 BS EN 14845-1:2007 Clause 6.5	) SW, WCK)
	7. Laboratory Mixing and Sampling	SS 78: Pt 25: 1987 BS 1881-125:2013 BS EN 480-1:2023	) SW, WCK))
	8. Time of Setting of Concrete Mixtures by Penetration Resistance	ASTM C403/C403M-23	) SW, WCK
	9. Slump-flow test	BS EN 12350-8:2019	) SW
	10. V-funnel test	BS EN 12350-9:2010	) SW
	11. L box test	BS EN 12350-10:2010	) SW
	12. Sieve segregation test	BS EN 12350-11:2010	) SW
	13. J-ring test	BS EN 12350-12:2010	) SW
	14. Adiabatic Temperature Rise of Fresh Concrete	EL-A-OP-CMT-SIN-MD223 Issue 1 July 2023	) SW
	15. Fibre Content in Fibre Reinforced Concrete	BS EN 14488-7:2006 Method B) SW, WCK

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2. Hardened Concrete (Physical Test) 2. Hardened Concrete (Physical Test)	1. Petrographic Examination of Hardened Concrete / Masonry Mortar	ASTM C856/C856M-20 ASTM C1324-20a) SW, JAA)
	2. Procedure and Terminology for the Petrographic Examination	BS 1881-211:2016	) SW, JAA
	3. Density (Hardened Concrete)	SS 78: Pt A14: 1987 BS 1881-114:1983 BS EN 12390-7:2019	) SW, WCK, FN))
	4. Compressive Strength of Cubes	SS 78: Pt A16: 1987 BS 1881-116:1983 BS EN 12390-3:2019#2 AS 1012.9:2014	) SW, WCK, FN)))
	5. Water Absorption	SS 78: Pt A22: 1987 BS 1881-122:2011+A1:2020 ASTM C642-21	) SW, WCK, CLW))
	6. Water Permeability	DIN 1048-5:1991	) SW, WCK, CLW
	7. Depth of Penetration of Water under Pressure	BS EN 12390-8:2019	) SW, WCK, CLW
	8. Making Test Beams	SS 78 Part A9: 1987 BS 1881-109:1983 BS EN 12390-1:2021 BS EN 12390-2:2019	) SW, WCK)))
	9. Making Test Cylinders	SS 78 Part A10: 1987 BS 1881-110:1983 BS EN 12390-1:2021 BS EN 12390-2:2019	) SW, WCK)))
	10. Tensile Splitting Strength of Test Specimens	SS 78 Part A17: 1987 BS 1881-117:1983 BS EN 12390-6:2023	) SW, WCK, CLW)
	11. Making of Test Cubes	SS 78: Pt A8: 1987 BS 1881-108:1983 BS EN 12390-1:2021 BS EN 12390-2:2019	) SW, WCK)))
	12. Flexural Strength	SS 78: Pt A18: 1987 BS 1881-118:1983 BS EN 12390-5:2019 ASTM C78/C78M-22) SW, WCK))) SW, WCK, CLW

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2. Hardened Concrete (Physical Tests)	13. Compressive Strength of Cores	SS 78: Pt A20: 1987 BS 1881-120:1983 BS EN 12504-1:2019 AS 1012.9:2014 ASTM C39/C39M-24) SW, WCK)))) SW, WCK, CLW
	14. Static Modulus of Elasticity in Compression	BS 1881-121:1983 ASTM C469/C469M-22 BS EN 12390-13:2021	) SW, WCK))
	15. Initial Surface Water Absorption	BS 1881-208:1996	) SW
	16. Length Change (Drying Shrinkage & Wetting Expansion)	ASTM C157/C157M-17	) SW
	17. Concrete's Ability to Resist Chloride Ion Penetration (Rapid Chloride Permeability Test)	ASTM C1202-22e1	) SW, WCK, CLW
	18. Coefficient of Permeability	Darcy's Theory - HDB Test Method EL-A-OP-CMT-SIN-MD217 Issue 1 July 2023	) SW, WCK)
	19. Water Penetration & Water Gain	HDB Test Method (1 April 1992) EL-A-OP-CMT-SIN-MD218 Issue 1 July 2023	) SW, WCK
	20. Compressive Strength of Moulded Cylinder Specimens	BS EN 12390-3:2019 AS 1012.9:2014 ASTM C39/C39M-24	) SW, WCK,) SW, WCK, CLW
	21. Microscopical Determination of Parameters of the Air-Void System	ASTM C457/C457M-24 (Procedure B)	) SW, JAA
	22. Water Sorptivity	ASTM C1585-20 EL-A-OP-CMT-SIN-MD220 Issue 1 July 2023	) SW))
2. Hardened Concrete (Physical Test)	23. Density, Absorption, and Voids	ASTM C642-21) SW, WCK
	24. Calibration of Cube Mould	BS EN 12390-1:2021) SW, WCK

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	25. Autogenous Strain of Cement Paste and Mortar	ASTM C1698-19) SW	
	26. Flexural Tensile Strength (Limit of Proportionality (LOP), Residual)	BS EN 14651:2005+A1:2007) SW, WCK	
	27. Fibre Content in Fresh and Hardened Concrete	BS EN 14721:2005+A1:2007	) SW, WCK
	28. Chloride Migration Coefficient	NT BUILD 492:1999	) SW, WCK
	29. Drying Shrinkage	BS ISO 1920-8:2009 BS EN 12390-16:2019 BS 8443:2005 (Annex B)	) SW, WCK))
	30. Creep in Compression	BS ISO 1920-9:2009 BS EN 12390-17:2019 ASTM C512/C512M-24#1	) SW, WCK))
	31. Energy Absorption Capacity of Fibre Reinforced Slab Specimens	BS EN 14488-5:2006	) SW, WCK
	32. Carbonation Resistance of Concrete – Accelerated Carbonation Method	BS EN 12390-12: 2020	) SW, WCK
	33. Fibre Content in Fibre Reinforced Concrete	BS EN 14488-7:2006 Method A	) SW, WCK
	34. Bound Water Content	EL-A-OP-CMT-SIN-MD284	) SW, WCK, CLW
	35. Effect on Fibres in Concrete	BS EN 14845-2:2006	) SW, WCK, CLW
	3. Hardened Concrete (Non-Destructive Tests)	1. Determination of Rebound Number of Hardened Concrete	ASTM C805/C805M-18 BS EN 12504-2:2021) SW, AC)
		2. Ultrasonic Pulse Velocity Measurement	ASTM C597-22 BS EN 12504-4:2021))
	3. Hardened Concrete (Non-Destructive Tests)	3. Covermeter Test	BS 1881-204:1988)
		4. Strain Measurement (Electrical Displacement)	BS 1881-206:1986) SW

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D. REPAIR MATERIAL	5. Initial Surface Absorption	BS 1881-208:1996)
	6. Half-Cell Potential Measurement	ASTM C876-22b) SW, AC
	7. Depth of Carbonation, cores or broken (on concrete)	BS EN 14630:2006 BRE Publication (IP6/81) RILEM TC14-CPC 1988)))
	8. Penetration Resistance	ASTM C803/C803M-23)
	9. Ground Penetration Radar	ASTM D6432-19)
	1. Flow Consistency	ASTM C939/C939M-22	) SW
	2. Compressive Strength	ASTM C942-21)
	3. Expansion/Shrinkage	ASTM C940-22)
	4. Bleeding	ASTM C940-22)
	5. Setting Time (Initial & Final Set)	ASTM C953-17)
	1. Flow Consistency	BS 4551-1:1998 ASTM C1437-20	) SW)
	2. Compressive Strength	BS EN 196-1:2016 ASTM C109/C109M-23	) SW, WCK) SW, WCK, CLW
	3. Change in Height	ASTM C827/C827M-16	) SW
	4. Setting Time	BS EN 196-3:2016)
	5. Bond Strength at 28 days	BS 6319-4:1984 BS EN 12615:1999))
3. Polymer Modified Cement Mortar	1. Compressive Strength	ASTM C109/C109M-23 BS EN 12190:1999 ASTM C349-18) SW, WCK,) CLW) SW
	2. Stiffening time	BS EN 1015-9:1999) SW

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	3. Shrinkage at 28 days	ASTM C531-18)
	4. Tensile pull off strength (before and after weathering)	BS EN 1015-12:2016 EL-A-OP-CMT-SIN-MD210 Issue 1 July 2023 EL-A-OP-CMT-SIN-MD211 Issue 1 July 2023)))))
	1. Slant Shear Bond Strength (Type I)	ASTM C1042:1999	) SW)
4. Bonding Agent	2. Slant Shear Bond Strength (Type II)	ASTM C1042:1999))
	3. Total Solids Content	ISO 124:2014)
	1. Tensile pull off strength	ASTM D4541-02(Method A, Type I Tester) ASTM D7234-22	) SW))
5. Waterproofing Material for External Wall Seepage Repair	2. Water Vapour Transmission (Water Method only)	ASTM E96/E96M-22ae1 ASTM D1653-13(2021))))
	3. Tensile Strength & Elongation at Break	ASTM D412-16(2021) Method A))
	4. Crack Bridging	ASTM C836/C836M-18(2022) EL-A-OP-CMT-SIN-MD201 Issue 1 July 2023 AS/NZS 4548.5:1999	) SW)))
	1. Tensile pull off strength	ASTM D4541-02 (Method A, Type I Tester) ASTM D7234-22	) SW))
6. Flexible Cementitious Waterproof Membrane (Water-Based)	2. Tensile Strength & Elongation at Break	ASTM D412-16(2021) Method A)
	3. Crack Bridging	ASTM C836/C836M-18(2022) EL-A-OP-CMT-SIN-MD202 Issue 1 July 2023))
	4. Water Penetration Test	EL-A-OP-CMT-SIN-MD203 Issue 1 July 2023 based on DIN 1048-5:1991	) SW, SS, EC, JC
	5. Initial Hardness (Shore A)	ASTM D2240-15(2021)) SW
	6. Set to touch	ASTM D1640/D1640M-14(2022))

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7. Flexible Non-Cementitious Waterproof Membrane (Water-Based)	1. Tensile pull off strength	ASTM D4541-02 (Method A, Type I Tester) ASTM D7234-22) SW))
	2. Tensile Strength & Elongation at Break	ASTM D412-16(2021) Method A))
	3. Crack Bridging	ASTM C836/C836M-18(2022) EL-A-OP-CMT-SIN-MD202 Issue 1 July 2023))
	4. Water Penetration Test	EL-A-OP-CMT-SIN-MD204 Issue 1 July 2023 based on DIN 1048-5:1991))
	5. Initial Hardness (Shore A)	ASTM D2240-15(2021))
	6. Set to touch	ASTM D1640/D1640M-14(2022))
8. Waterproofing Membrane for RC Roof - Bituminous Type	1. Tensile pull off strength	ASTM D4541-02 (Method A, Type I Tester) ASTM D7234-22	) SW))
	2. Tensile Strength & Elongation at Break	ASTM D412-16(2021) Method A)
	3. Crack Bridging	ASTM C836/C836M-18(2022) EL-A-OP-CMT-SIN-MD202 Issue 1 July 2023))
	4. Water Vapour Transmission	ASTM E96/E96M-22ae1)
	5. Water Penetration Test	EL-A-OP-CMT-SIN-MD205 Issue 1 July 2023 based on DIN 1048-5:1991))
	6. Initial Hardness (Shore A)	ASTM D2240-15(2021))
	7. Accelerated Weathering	ASTM G154-23 EL-A-OP-CMT-SIN-MD207 Issue 1 July 2023))
	8. Set to touch	ASTM D1640/D1640M-14(2022))
	9. Solid Content	SS 133: 2017 Annex D (Method A))
	10. Heat Test	SS 133: 2017 Annex H)

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9. Repair Material - Reinforcement Primer / Reinforcement Bar	11. Water Resistance Test	SS 133: 2017 Annex J)
	12. Direct Flame Test	SS 133: 2017 Annex K)
	1. Half-Cell Potential	ASTM C876-22b	) SW
	2. Bond Performance	SS 2 Part 3: 1987 Appendix A)
10. Epoxy Mortar	1. Working Time, Initial Setting Time and Service Strength Setting Time	ASTM C308-18(2023)	) SW
	2. Compressive Strength	ASTM C579-23 BS 6319-2:1983))
	3. Coefficient of Linear Thermal Expansion	ASTM C531-18)
	4. Water Absorption	ASTM C413-18(2023))
	5. Tensile Strength	ASTM C307-23 BS 6319-7:1985)
	6. Flexural Strength	ASTM C580-18(2023) BS 6319-3:1990)
11. Epoxy Resin for Injection	1. Determination of Bond Strength	ASTM C882/C882M-20	) SW
	2. Density	SS 5: Pt B7: 2013 (2018) ASTM D1475-13(2020)))
12. Bituminous and Non-Bituminous Pre-formed Waterproofing Membrane for Concealed Roof	1. Dimensional Stability	SS 374:1994(2023)	) SW
	2. Tensile Strength and Elongation at Break	SS 374:1994(2023))
	3. Tensile Shear at Joints	SS 374:1994(2023))
	4. Pliability	SS 374:1994(2023))
	5. Water Absorption and Soluble Matter	SS 374:1994(2023))
	6. Water Vapour Transmission	SS 374:1994(2023))

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13. Waterproofing Membrane	9. Pull-Off Adhesion Strength	ASTM D4541:2002 (Method A, Type I Tester) ASTM D7234-22 BS EN 1542:1999)))
	10. Artificial ageing by long term exposure to elevated temperature	BS EN 1296:2001 SS 374:1994(2023) DIN 16726:2017)))
	11. Behaviour after Storage in Aqueous Solutions	DIN 16726:2017)
	12. Chemical Resistance	BS EN 14414:2004 (Method A & B) ASTM D543-21))
	13. Resistance to Leaching	BS EN 14415:2004 (Method A & B))
	14. Hydrostatic Pressure Resistance	ASTM D5385/D5385M-20)
	15. Lateral Water Migration	EL-A-OP-CMT-SIN-MD222 Issue 1 July 2023 ASTM D5385/D5385M-20)
	16. Tear Strength	ASTM D624-00(2020) (Type C & T))
	17. Resistance to static loading	BS EN 12730:2015 Method B)
	18. Resistance Tearing	BS EN 12310-2:2018)
	19. Peel resistance of joints	BS EN 12316-2:2013)
	20. Electrical resistivity	ASTM D257-14(2021)e1)
	21. Adhesive and Cohesive Strength Between Materials in Roofing or Waterproofing Membranes and Systems	ASTM D7105/D7105M-06 (2019)e1)
	22. Static Puncture Resistance	ASTM D5602/D5602M-18(2022))
	23. Water Penetration	EL-A-OP-CMT-SIN-MD203A Issue 1 July 2023 based on DIN 1048-5:1991) SW, SS, EC, JC

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13. Waterproofing Membrane	24. Length, Width and Net Mass	ISO 2286-1:2016 BS EN ISO 2286-1:2016 DIN EN ISO 2286-1:2016		
	25. Mass per Unit Area	ISO 2286-2:2016 BS EN ISO 2286-2:2016 DIN EN ISO 2286-2:2016		
	26. Thickness	ISO 2286-3:2016 BS EN ISO 2286-3:2016 DIN EN ISO 2286-3:2016		
14. Rubber Waterstop	1. Change in Mass (after immersion) Change in Volume (after immersion)	ASTM D471-16a(2021)	) SW
E. BUILDING MATERIAL 1. Tile Adhesive (Fast and Normal Set)	1. Tensile Adhesion Bond Strength	BS EN 1348:2007 BS EN 12004-2:2017	) SW)
	2. Tensile Adhesion Bond Strength (After Water immersion)	BS EN 1348:2007 BS EN 12004-2:2017))	
	3. Tensile Adhesion Bond Strength (After Heat Aging)	BS EN 1348:2007 BS EN 12004-2:2017))	
	4. Open Time	BS EN 1346:2007 BS EN 12004-2:2017))	
	5. Deformity	BS EN 12002:2008 BS EN 12004-2:2017))	
	6. Slip	BS EN 1308:2007 BS EN 12004-2:2017))	
	7. Pull Out Test (Site Test)	EL-A-OP-CMT-SIN-MD215 Issue 1 July 2023	) AC
	2. Tile Grout	1. Shrinkage	BS EN 12808-4:2009 BS EN 13888-2: 2022) SW
		2. Water Absorption	BS EN 12808-5:2008 BS EN 13888-2: 2022)
		3. Compressive Strength	BS EN 12808-3:2008 BS EN 13888-2: 2022)

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2. Tile Grout	4. Flexural Strength	BS EN 12808-3:2008 BS EN 13888-2: 2022)
	5. Abrasion Resistance	BS EN 12808-2:2008 BS EN 13888-2: 2022)
3. Prepacked Floor Screed/ Prepacked Waterproof Screed	1. Average Compressive strength	ASTM C109/C109M-23	) SW, WCK, CLW
	2. Flow	ASTM C1437-20	) SW
	3. Water Absorption	ASTM C413-18(2023))
	4. Water Penetration Test	EL-A-OP-CMT-SIN-MD203 Issue 1 July 2023 based on DIN 1048-5:1991	) SW, SS, EC, JC
	5. Flexural Strength	ASTM C348-21	) SW
	6. Water Retentivity	BS 4551:2005+A2:2013)
	7. Stiffening time	BS EN 1015-9:1999 (Method A))
	8. Volume change	ASTM C827/C827M-23)
4. Prepacked Plaster/ Prepacked Mortar	1. Tensile pull off strength	BS EN 1015-12:2016	) SW
	2. Compressive Strength	BS EN 1015-11:2019 BS 4551-1:1998))
	3. Consistence Retentivity	BS 4551:2005+A2:2013)
	4. Water Retentivity	BS 4551:2005+A2:2013)
	5. Stiffening time	BS EN 1015-9:1999 (Method A))
	6. Linear Shrinkage	ASTM C531-18(2023))
	7. Pull Out Test (Site Test)	EL-A-OP-CMT-SIN-MD216 Issue 1 July 2023	) AC
	8. Determination of modulus of elasticity in compression	BS EN 13412:2006 (Method 2)) SW, WCK
	9. Flexural strength	BS EN 1015-11:2019) SW

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5. Prepacked Skim Coat	1. Tensile pull off strength	BS EN 1015-12:2016) SW
	2. Tensile pull off strength (after weathering)	BS EN 1015-12:2016 EL-A-OP-CMT-SIN-MD208 Issue 1 July 2023))
	3. Compressive Strength	BS EN 1015-11: 2019)
	4. Water Retentivity	BS 4551: 2005+A2: 2013)
	5. Setting Time	BS EN 196-3:2016)
	6. Linear Shrinkage	ASTM C531-18(2023))
	7. Pull Out Test (Site Test)	EL-A-OP-CMT-SIN-MD216 Issue 1 July 2023	) AC
6. Acrylic Polymer Cementitious Coating	1. Compressive Strength	ASTM C109/C109M-23	) SW, WCK, CLW
	2. Flexural Strength	ASTM C348-21	) SW
	3. Tensile Strength	ASTM C307-23)
	4. UV Accelerated Weathering	ASTM G154-23 EL-A-OP-CMT-SIN-MD209 Issue 1 July 2023))
	5. Skid Resistance	ASTM E303-22)
	6. Taber Abrasion	ASTM D4060-19 EL-A-OP-CMT-SIN-MD212 Issue 1 July 2023	) SW)
	7. Shear Bond Adhesive	ASTM C482-20 EL-A-OP-CMT-SIN-MD213 Issue 1 July 2023	) SW)
	8. Water Penetration Test	EL-A-OP-CMT-SIN-MD206 Issue 1 July 2023 based on DIN 1048-5:1991)
7. Self-Leveling Screed	1. Compressive Strength	ASTM C109/C109M-23) SW, WCK, CLW
	2. Linear Shrinkage/Length Change	ASTM C157/C157M-17 ASTM C531-18(23)) SW)

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7. Self-Leveling Screed	3. Slip Resistance (before & after accelerated weathering)	BS 7976-2:2002+A1:2013)
	4. Tensile Adhesion Bond Strength	ASTM D4541-22 (Method A, Type I Tester) BS EN 13892-8:2002)))
	5. Shear Adhesion Bond Strength	ASTM C482-20)
	6. Accelerated Weathering (UV Exposure)	ASTM G154-23)
	7. Flowability	ASTM C939/C939M-22)
	8. Water Absorption	ASTM C413-18(2023) (Method A))
	9. Abrasion Resistance	BS EN 13892-4:2002	) SW, SS
8. Sealant	1. Staining and Color Change	ASTM C510-16(2022)	) SW
	2. Extrusion Rate	ASTM C1183/C1183M-13(2024))
	3. Rheological (Flow) Properties	ASTM C639-15(2020))
	4. Indentation Hardness	ASTM C661-15(2022))
	5. Tack-Free Time	ASTM C679-15(2022))
	6. Adhesion and Cohesion Under Cyclic Movement (Hockman Cycle)	ASTM C719-22)
	7. Effects of Heat Aging	ASTM C1246-17(2022))
	8. Effects of Laboratory Accelerated Weathering	ASTM C793-23	) SW
	9. Adhesion-in-Peel	ASTM C794-18(2022))
	10. Durability of Sealants Exposed to Continuous Immersion in Liquids	ASTM C1247-20)

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8. Sealant	11. Extrudability	ISO 8394-2: 2017) SW, SS
	12. Rate of Cure	BS EN 14187-1: 2017)
	13. Tack Free Time	BS EN 14187-2: 2017)
	14. Self-Levelling Properties	BS EN 14187-3: 2017)
	15. Change in Mass and Volume	ISO 10563: 2023)
	16. Change in Mass and Volume after Immersion in Test Fuels and Liquid Chemicals	BS EN 14187-4: 2017)
	17. Resistance to Hydrolysis	EN 14187-5: 2019)
	18. Resistance to Flame	EN 14187-7: 2019)
	19. Adhesion/Cohesion Properties at Variable Temperatures	BS EN ISO 9047: 2003)
	20. Tensile Properties at Maintained Extension	ISO 8340: 2005)
	21. Elastic Recovery of Sealants	EN ISO 7389: 2003)
	22. Artificial Weathering by UV-Irradiation	BS EN 14187-8: 2017)
	23. Adhesion/Cohesion Properties after Immersion in Test Fuels and Liquid Chemicals	BS EN 14187-6: 2017)
24. Resistance to Flow	ISO 7390:2002)	
F. PAINT/ COATING	1. Adhesion (Pull Off) Strength	ASTM D4541-22 (Method B)	) SW, AC,
		ASTM D7234-22	) SS
BS EN ISO 4624:2023 (Method B))	
BS EN 1542:1999)	
)	
2. Wet Film Thickness	ISO 2808:2019 (Method 1A)) SS	
	SS 5-B1:2013 (2018))	
)	

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F. PAINT/ COATING	3. Dry Film Thickness	ISO 2808:2019 (Method 4A, 6A, 7B2, 7C & 10) ASTM D7091-22 ASTM D6132-13(2022) SS 5-B1:2013 (2018) BS EN ISO 2178:2016 ISO 19840:2012) AC, SS)))))) AC
	4. Alkali resistance (spotting method)	SS 5 - G2 : 2003 (2013)	) SW
	5. Compatibility on wet concrete	BS EN 13578:2003)
	6. Methods of conditioning before testing - UV accelerated weathering	BS EN 1062-11:2007 ISO 11507:2007 ISO 16474-3:2021)
	7. Static Crack Bridging	BS EN 1062-7:2004, Method A)
	8. Tensile & Elongation at Break	BS ISO 37:2017)
	9. Water-Vapour Transmission	BS EN ISO 7783:2018)
	10. Luminance Factor	SS 589-2013:2022 (BS EN 1871:2020 Annex F)))
	11. Skid Resistance	SS 589-2013:2022 Annex C)
	12. Flow Resistance	SS 589: 2013 Annex B)
	13. Softening Point	SS 589-2013:2022 (BS EN 1871:2020 Annex G))
	14. Heat stability	SS 589-2013:2022 (BS EN 1871:2020 Annex H))
	15. Rating Adhesion by Tape Test	ASTM D3359-23	) SW, SS
	16. Carbon Dioxide Permeability	BS EN 1062-6:2002 (Method A)) SW
	17. Gloss Value at 20°, 60° and 85°	ISO 2813:2014 SS 5-E1:2020) SW, SS)

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F. PAINT/ COATING	18. Visual comparison of colour of paints	ISO 3668:2017 SS 5 - E3:2019) SW, SS)
	19. Pencil hardness test	ASTM D3363-22	) SS
	20. Scratch resistance test	SS 5-F2:2013 (2018))
	21. Resistance to salt spray	SS 5-G10:2020))
	22. Resistance to humidity	SS 5-G7:2020)
	23. Resistance to Hydrostatic Pressure used in Below Grade Applications Applied to Masonry	ASTM D7088-17 (2023)	) SW, WCK, CLW
	24. Exposure to laboratory light sources	SS 5-G11:2020 SS 5-G12:2020	) SS
G. ADMIXTURES	1. Water Reduction	BS EN 12350-2:2019 BS EN 480-1:2023 SS EN 934-2:2015	) SW, WCK))
	2. Compressive Strength	BS EN 12390-3:2019 BS EN 480-1:2023 SS EN 934-2:2015	) SW, WCK))
	3. Air Content-Pressure Methods	BS EN 12350-7:2019 BS EN 480-1:2023 SS EN 934-2:2015	) SW, WCK))
	4. Increase in Consistence	BS EN 12350-2:2019 BS EN 480-1:2023 SS EN 934-2:2015	) SW, WCK))
	5. Retention of Consistence	BS EN 12350-2:2019 BS EN 480-1:2023 SS EN 934-2:2015	) SW, WCK))
	6. Bleeding	BS EN 480-4:2005 BS EN 480-1:2023 SS EN 934-2:2015	) SW, WCK))
	7. Setting Time	BS EN 480-2:2006 SS EN 934-2:2015) SW, WCK
	8. Capillary Absorption	BS EN 480-5:2005 SS EN 934-2:2015) SW)

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H. CEMENT 1. Ordinary Portland Cement/ Sulphate-resisting and Portland Blast Furnace Slag Cement. Ground Granulated Blast Furnace Slag, Silica Fume & Fly Ash	9. Sampling	BS EN 934-6:2019 SS EN 934-6:2008 (2015)) SW, WCK)
	10. Effect on Corrosion Susceptibility of Reinforcing Steel by Potentiostatic Electro-Chemical Test	BS EN 480-14: 2006	) SW, WCK
	1. Determination of Strength	BS EN 196-1:2016 ASTM C109/C109M-23 SS 397 Part 1: 1997	) SW, WCK) SW, WCK, CLW) SW, WCK
	2. Determination of Setting Times	BS EN 196-3:2016 SS 397 Part 3: 1997 ASTM C191-21	) SW, WCK))
	3. Determination of Soundness	BS EN 196-3:2016 SS 397 Part 3: 1997	) SW, WCK)
	4. Determination of Fineness	BS EN 196-6:2018 SS 397 Part 6: 1997 ASTM C204-24	) SW, WCK))
	5. Moisture Content	BS EN 15167-1:2006 Annex A SS EN 15167-1:2008 Annex A (2016) ASTM C311/C311M-24	) SW, WCK)) SW, WCK
	6. Activity Index	BS EN 196-1:2016 BS EN 15167-1:2006, 5.3.2.3 BS EN 13263-1:2005+A1:2009, 5.3.3 BS EN 450-1:2012, 5.3.2	) SW, WCK)))
	7. Air Content	ASTM C185-20	) SW, WCK
	8. Amount of Water Required for Normal Consistency	ASTM C187-23	) SW, WCK
9. Fineness by Wet Sieving	BS EN 451-2:2017 ASTM C430-17) SW, WCK)	
10. Water Requirement for Category S Fly Ash	BS EN 450-1:2012, Annex B) SW, WCK	

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2. Masonry Cement	11. Potential Expansion of Portland-Cement Mortars Exposed to Sulfate	ASTM C452-21) SW
	1. Setting Time	BS EN 413-2:2016 BS EN 196-3:2016	) SW)
	2. Soundness	BS EN 196-3:2016)
	3. Compressive Strength	BS EN 196-1:2016)
	4. Consistence of Fresh Mortar	BS EN 413-2:2016)
	5. Air Content	BS EN 413-2:2016)
	6. Water Retentivity	BS EN 413-2:2016)
I. CURING COMPOUND	7. Sieve Residue	BS EN 196-6:2018)
	1. Water Retention	ASTM C156-20	) SW)
	2. Bond Strength Test	ASTM C882/C882M-23 Clause 11.3 only EL-A-OP-CMT-SIN-MD219 Issue 1 July 2023))))
	3. Density Test	ASTM D1475-13(2020))
	4. Non-Volatile Matter Test	ASTM D1644-01(2017) (Method A & B)))
	5. Volatile Content	ASTM D2369-24)
J. MASONRY UNITS 1. Ferrocement Roof Slabs / Sunbreaker Slabs	6. Curing Efficiency Index	BS 7542:1992)
	1. Dimension and Density	BS EN 12390-7:2019	) SW
	2. Cover Measurement	BS 1881-204:1988	) SW
	3. Initial Surface Absorption	BS 1881-208:1996	) SW
2. Burnt Clay and Shale Bricks	4. Carbonation Depth	BRE Publication (IP6/81) BS EN 14630:2006	) SW)
	1. Determination of Dimensions	SS 103: 1974) SW
	2. Determination of Compressive Strength	SS 103: 1974) SW

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3. Masonry Units /Autoclaved Aerated Concrete	3. Water Absorption Test	SS 103: 1974) SW
	4. Soluble Salt Content	SS 103: 1974	) SW
	5. Efflorescence Test	SS 103: 1974	) SW
	6. Double Punch Test	EL-A-OP-CMT-SIN-MD285	) SW, WCK, CLW
	1. Compressive Strength	BS EN 772-1:2011+A1:2015 ASTM C1693-11(2017), Section 6	) SW
)
	2. Density	BS EN 772-13: 2000 BS EN 678:1994 ASTM C1693-11(2017), Section 7	) SW))
	3. Drying Shrinkage	BS EN 680:2005 ASTM C1693-11(2017), Section 8	) SW)
	4. Water Absorption due to Capillary Action	BS EN 772-11:2011	) SW
	5. Dimensions	BS EN 772-16: 2011	) SW
4. Concrete Masonry Units	1. Geometrical Characteristics	} SS 271: 1983	) SW
	2. Compressive Strength		) SW
	3. Drying Shrinkage		) SW
	4. Total Water Absorption		) SW
	5. Measurement of Dimensions	} ASTM C140/C140M-24	) SW
6. Compressive Strength	) SW		
7. Absorption	) SW		
K. CERAMIC WALL AND FLOOR TILES	1. Determination of Dimensions	} SS 483: 2000 BS ISO 13006:2018 (BS EN 14411:2016) BS EN ISO 10545-2:2018	) SW))
	2. Determination of Straightness of Side)
	3. Determination of Rectangularity)

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K. CERAMIC WALL AND FLOOR TILES	4. Determination of Surface Flatness	} SS 483: 2000 } BS ISO 13006:2018 (BS EN 14411:2016) } BS EN ISO 10545-2:2018) SW
	5. Determination of Surface Quality)
	6. Determination of Resistance to Deep Abrasion	(SS 483: 2000) BS ISO 13006:2018 (BS EN 14411:2016) ISO 10545-6:2010))))
	7. Tensile and Shear Adhesion Bond Strength	ASTM C482-20)))
	8. Determination of Modulus of Rupture	(SS 483: 2000) BS ISO 13006:2018 (BS EN 14411:2016) ISO 10545-4:2019))))
	9. Determination of Water Absorption	(SS 483: 2000) BS ISO 13006:2018 (BS EN 14411:2016) ISO 10545-3:2018))))
	10. Determination of Scratch Hardness of Surface	EN 101:1991 BS 6431-13:1986 EN 159:1991 SS 301: 1985 Appendix G))))
	11. Slip Resistance Test	(SS 483: 2000) BS ISO 13006:2018 SS 485:2022 AS 4856:2013 (BS EN 14411:2016)	) SW)) SW, AC))
	12. Reverse Staining	EL-A-OP-CMT-SIN-MD214 Issue 1 July 2023	) SW)
	13. Stain Resistance	(SS 483: 2000) BS ISO 13006:2018 (BS EN 14411:2016) SS 57: 1989 Appendix H.7 ISO 10545-14:2015)))))
	14. Chemical Resistance	(SS 483: 2000) BS ISO 13006:2018 (BS EN 14411:2016) ISO 10545-13:2016)))))

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K. CERAMIC WALL AND FLOOR TILES	15. Coefficient of Friction	SS 485:2022 AS 4856:2013)
	16. Sampling and Basic for Acceptance	(SS 483: 2000) BS ISO 13006:2018 (BS EN 14411:2016) ISO 10545-1:2014	) SW))))
	17. Colourfastness	SS 57: 1989 Appendix F SS 301: 1985 Appendix H))
L. ROCKS	1. Unconfined Compressive Strength of Core Specimens	ASTM D7012-23 Method C	) SW, ZMM
	2. Water (Moisture) Content of Soil and Rock	ASTM D2216-19	) SW
	3. Point Load Strength Index	ASTM D5731-16 ISRM Suggested Method - 1978	) SW, ZMM)
	4. Petrographic Description of Rocks	ISRM Suggested Method - 1978	) SW, JAA
	5. Particle Size Distribution	BS EN 13383-2:2019	) SW
	6. Length-to-Thickness Ratio (Elongation)	BS EN 13383-2:2019	) SW
	7. Particle Density & Water Absorption	BS EN 13383-2:2019	) SW, ZMM
	8. Block Integrity - Drop Test	BS EN 13383-1:2002 Annex B	) SW
M. NATURAL STONE / GRANITE	1. Water absorption and Bulk Specific Gravity	ASTM C97/C97M-18	) SW, ZMM
	2. Compressive Strength	ASTM C170/C170M-24a BS EN 1926:2006, Annex A	) SW, ZMM
	3. Petrographic Examination	BS EN 12407:2019 BS EN 12670:2019	) SW, JAA)
	4. Modulus of Rupture	ASTM C99/C99M-18) SW
	5. Flexural Strength	ASTM C880/C880M-24) SW

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N. STRUCTURAL FIXINGS	1. Determination of Tensile Strength (Pull Out Strength) of Structural Fixings in Concrete and Masonry	BS 5080-1:1993 BS 8539:2012+A1:2021 Annex B Clause 9.3) AC))
	2. Allowable resistance of structural fixings in concrete or masonry	BS 8539:2012+A1:2021 Annex B Clause 9.2))
	3. Proof load test for pullout resistance of fastening systems for railway applications	BS EN 13146-10 2017)
O. BITUMINOUS PREMIXES	1. Bitumen Content	ASTM D2172/D2172M-24	) SW
	2. Density of Premix on Cored Samples	BS 598-104:2005	) SW, LCH, AA
	3. Density of Cored Premix with Sample Preparation	BS 598-104:2005	) SW, LCH, AA
	4. Marshall Density	BS 598-107:2004 ASTM D1559-89	) SW, LCH, AA)
	5. Marshall Stability	BS 598-107:2004 ASTM D1559-89 ASTM D6927-22	) SW, LCH, AA))
	6. Particle Size Distribution	BS 812-103.1:1985	) SW, LCH, AA
	7. Percentage Voids Density of Core Method	BS 598-104:2005	) SW, LCH, AA
	8. Thickness of Core	ASTM D3549/D3549M-18(2023) (Method A) BS EN 12697-36:2022	) SW, LCH, AA)
	9. Asphalt Content by Ignition Method	ASTM D6307-19	) SW, LCH, AA
O. BITUMINOUS PREMIXES	10. Los Angeles Abrasion	BS EN 12697-17: 2017	) SW, LCH, AA
	11. Measuring Surface Frictional Properties Using the British Pendulum Tester	ASTM E303-22 SS 589-2013:2022 BS EN 1436:2018 BS EN 13036-4:2011) AC)))

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	12. Measuring Pavement Macrotexture Depth Using a Volumetric Technique	ASTM E965-15(2024) BS EN 13036-1:2010))
	13. Preparation of Asphalt Mixture Specimens Using Marshall Apparatus	ASTM D6926-20	) SW, LCH, AA
	14. Mechanical Size Analysis of Extracted Aggregate	ASTM D5444-24	) SW, LCH, AA
	15. Bulk Specific Gravity and Density of Non-Absorptive Compacted Bituminous Mixtures	ASTM D2726/D2726M-21	) SW, LCH, AA
	16. Percent Air Voids in Compacted Dense and Open Bituminous Paving Mixtures	ASTM D3203-22	) SW, LCH, AA
	17. Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures	ASTM D2041/D2041M-19	) SW, LCH, AA
	18. Effect of Moisture on Asphalt Concrete Paving Mixtures	ASTM D4867/D4867M-22 (2014)	) SW, LCH
	19. Determination of Wheel-Tracking Rate and Depth	BS 598-110:1998 BS EN 12697-22:2020+A1:2023	) SW, LCH)
	20. Density of Bituminous Concrete in Place by Nuclear Methods	ASTM D2950/D2950M-22	) SW, AC
	21. Deflections (Light Weight Deflectometer)	ASTM E2583-07(2020)	) SW, AC
P. PRECAST CONCRETE UNITS 1. Concrete Paving Blocks	1. Compressive Strength	BS EN 1338:2003	) SW
	2. Visual Aspects and Appearance (Annex J)	BS EN 1338:2003	) SW
	3. Shape and Dimensions, Thickness of Facing Layer (Annex C)	BS EN 1338:2003) SW

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	4. Tensile Splitting Strength (Annex F)	BS EN 1338:2003) SW
	5. Slip/Skid Resistance (USRV) (Annex I)	BS EN 1338:2003) SW
	6. Total Water Absorption (Annex E)	BS EN 1338:2003	) SW
2. Concrete Kerb, Channel	1. Water Absorption	} SS 214:2022 BS 7263-1:1994 BS 7263-1:2001	) SW, WCK
	2. Transverse Strength)
3. Slab (Aeration/Porous)	1. Water Absorption	} BS 7263-1:1994 BS 7263-1:2001	) SW
	2. Transverse Strength		) SW
4. Concrete Paving Flags	1. Visual Aspects and Appearance (Annex J)	} BS EN 1339:2003	) SW
	2. Bending Strength and Breaking Load (Annex F)		) SW
	3. Slip/Skid Resistance (USRV) (Annex I)		) SW
	4. Total Water Absorption (Annex E)		) SW
5. Concrete Kerb Units	1. Visual Aspects and Appearance (Annex J)	} BS EN 1340:2003	) SW
	2. Shape and Dimensions, Thickness of Facing Layer (Annex C)		) SW
	3. Bending Strength (Annex F)		) SW
	4. Slip/Skid Resistance (USRV) (Annex I)) SW
	5. Total Water Absorption (Annex E)) SW

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6. Clay Pavers	1. Shape and Dimensions (Annex B)	BS EN 1344:2013) SW
	2. Transverse Breaking Load (Annex D)) SW
	3. Abrasion Resistance (Annex E)		) SW
	4. Slip/Skid Resistance (USRV)	BS EN 1344:2013	) SW
Q. GROUTS 1. Geotechnical Grouting	Specification BS EN 12715: 2020		) SW
	1. Bleeding	BS EN 12715:2020 ASTM C940-22))
	2. Setting Time	BS EN 196-3:2016	) SW
	3. Density by Mud Balance	BS EN ISO 10414-1:2008)
	4. Marsh Cone Viscosity	BS EN 14117:2004)
	5. Viscosity & Yield Strength	BS EN ISO 10414-1:2008)
	6. Workability by Abraham Cone	BS EN 12350-8:2019)
	7. Penetrability by Filter Pump	BS EN 14497:2004)
2. Prestressing Tendons	8. Compressive Strength	BS 1377-7:1990 Section 7 BS 1377-2:2022 Section 27 (Load Frame Method))))
	1 Sieve test	BS EN 445:2007 Clause 4.2	) SW
	2 Fluidity test - Cone method	BS EN 445:2007 Clause 4.3.1)
	3 Fluidity test - Grout spread	BS EN 445:2007 Clause 4.3.2)
	4 Volume change and bleeding measurement - Wick-induced test	BS EN 445:2007 Clause 4.5)
	5 Compressive strength test	BS EN 445:2007 Clause 4.6)
	6 Setting time	BS EN 196-3:2016)
7 Density test	BS EN 445:2007 Clause 4.7)	

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R. SOIL-CEMENT MIXTURE (CEMENT TREATED BASE)	1. Wetting and Drying Compacted Soil-Cement Mixtures	ASTM D559/D559M-15(2023)) SW
	2. Moisture-Density (Unit Weight) Relations of Soil-Cement Mixtures	ASTM D558/D558M-19	) SW
	3. Compressive Strength of Molded Soil-Cement Cylinders	ASTM D1633-17	) SW
	4. Measuring Thickness of Concrete Element Using Drilled Concrete Cores	ASTM C174/C174M-17	) SW
S. RESILIENT FLOOR COVERINGS	1. Determination of side length, edge, straightness and squareness of tiles	BS EN ISO 24342:2018	) SW
	2. Determination of overall thickness	BS EN ISO 24346:2012)
	3. Determination of thickness of layers	BS EN ISO 24340:2012	) SW
	4. Determination of mass per unit area	BS EN ISO 23997:2012)
	5. Determination of flexibility and deflection	BS EN ISO 24344:2012 (Method A))
	6. Determination of wear resistance. Frick-Taber test	BS EN 660-2:1999)
	7. Slip Resistance (dry floor friction & wet pendulum test methods)	SS 485:2022 AS 4856:2013	) SW, AC, SS
	8. Determination of staining and resistance to chemicals	BS EN ISO 26987:2012	) SW
	9. Castor chair test	ISO 4918:2016	) SW, SS
	10. Resistance to burning Cigarettes	EN 1399:1997 (Method B))
T. DRY WALL	1. Determination of partition wall stiffness (Annex A)	SS 492: 2001 (2014) BS 5234-2:1992) SW)

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T. DRY WALL	2. Determination of surface damage by small hard body impact (Annex B)	SS 492: 2001 (2014) BS 5234-2:1992))	
	3. Determination of resistance to damage by impact from a large soft body (Annex C)	SS 492: 2001 (2014) BS 5234-2:1992))	
	4. Determination of resistance to perforation by small hard body impact (Annex D)	SS 492: 2001 (2014) BS 5234-2:1992	) )	SW
	5. Determination of resistance to structural damage by multiple impacts from a large soft body (Annex E)	SS 492: 2001 (2014) BS 5234-2:1992))	
	6. Determination of the effects of door slamming (Annex F)	SS 492: 2001 (2014) BS 5234-2:1992))	
	7. Determination of resistance to crowd pressure (Annex G)	SS 492: 2001 (2014) BS 5234-2:1992))	
	8. Lightweight anchorage pull out test (Annex H)	SS 492: 2001 (2014) BS 5234-2:1992	) )	SW
	9. Lightweight anchorage pull down test (Annex J)	SS 492: 2001 (2014) BS 5234-2:1992))	
	10. Heavyweight anchorage (wash basin) eccentric downward loading test (Annex K)	SS 492: 2001 (2014) BS 5234-2:1992)))	
	11. Heavyweight anchorage (high level wall cupboard) eccentric downward loading test (Annex L)	SS 492: 2001 (2014) BS 5234-2:1992)))	
	12. Surface & Total water Absorption	BS EN 520:2004+A1:2009 Clause 5.9)	
	13. Moisture Movement	ASTM C1185-23 Clause 8 BS EN 12467:2012+A2:2018 Annex C)))	

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U. WINDOWS & CURTAIN WALLS	14. Water impermeability	BS EN 12467:2012+A2:2018 Clause 7.3.3))
	15. Flexural Breaking Load	BS EN 520:2004+A1:2009 Clause 5.7)
	1. Field watertightness test	BCA Conquas 21: 2017, Appendix 2 Part 5 Item 2. SS CP 96: 2002 (2011) Clause 4.3a	) AC
V. RUBBER GASKET	1. Water absorption	ASTM D1056-20	) SS
	2. Compression deflection	ASTM D1056-20)
	3. Oven aged compression deflection	ASTM D1056-20)
	4. Compression set	ASTM D1056-20)
W. BUILDING ENVELOPES	1. Infrared Thermography	ISO 6781:1983 BS EN 13187:1999) SW, AC)

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LCH : Ms Leong Chee Huan
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EC : Mr Chuo Chung Sam
JC : Mr Chng Cheow Chea (Jiro)
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Note :

This laboratory is accredited in accordance with the recognised International Standard ISO/IEC 17025:2017. A laboratory's fulfilment of the requirements of ISO/IEC 17025:2017 means the laboratory meets both the technical competence requirements and **management system requirements** that are necessary for it to consistently deliver technically valid test results. The **management system requirements** in ISO/IEC 17025:2017 are written in language relevant to laboratory operations and operate generally in accordance with the principles of ISO 9001