

Schedule

Setsco Services Pte Ltd
No. 18 Teban Gardens Crescent
Singapore 608925

Certificate No. : LA-1987-0001-B
(Part 1 of 5)

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FIELD OF TESTING : Civil Engineering Testing

ITEMS/MATERIALS/ PRODUCTS TESTED	TESTS / MEASUREMENT	STANDARD METHODS/ TECHNIQUES/ EQUIPMENT	APPROVED SIGNATORY
A. CEMENT 1. Ordinary Portland Cement / Sulphate -resisting and Portland Blast Furnace Slag Cement	1. Fineness (Blaine Air Method)	BS EN 196 : Pt 6 : 2018	) JS / THC))
	2. Setting Time, Soundness, Consistency	) BS EN 196 : Pt 3 : 2016)))))
	3. Compressive Strength	BS EN 196: Pt 1: 2016 ASTM C109/C109M: 2016a)))
	4. Air Content of Hydraulic Cement Mortar	ASTM C185: 2015a)))
	5. Moisture Content	BS EN 15167 : Pt 1 Annex A : 2006 SS EN 15167 : Pt 1 Annex A : 2008))))
B. AGGREGATES: Fine and Coarse Aggregates, Sub- Ballast	1. Particle Size Distribution/ Sieve Analysis	BS 812 : Pt 103 : Sect 103.1 1985 (AMD 6003, June 1989) SS 73 : 1974 SS 73 : Pt 3.2 : 1992 ASTM C136 : 2014 BS EN 933 Pt 1: 2012	) TT / TCK)))))))
	2. Bulk Density, Voids and Bulking	BS 812 : Pt 2 : 1995 SS 73 : 1974 BS EN 1097 :Pt 3 : 1998))))
	3. Fineness Modulus	ASTM C136: 2014))

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B. AGGREGATES: Fine and Coarse Aggregates, Sub- Ballast	4. Clay, Silt and Dust (Decantation Method) Materials finer than 75um	SS 73 : 1974 BS 812 : Pt 103 : Sect 103.1 : 1985 ASTM C117 – 2013 BS EN 933 Pt 1: 2012)))))))
	5. Flakiness Index	BS 812 : Pt 105 Sect 105.1 : 1989 SS 73 : Pt 5.1 : 1992 BS EN 933 Pt 3 : 2012)))))
	6. Elongation Index	BS 812 : Pt 105 : Sect 105.2 : 1990 SS 73 : 1974))))
	7. Shell Content	BS 812 : Pt 106 : 1985 SS 73 : Pt 6 : 1992 BS EN 933 : Pt 7 : 1998))))
	8. Relative Density and Water Absorption	BS 812 : Pt 2 : 1995 SS 73 : 1974 BS EN 1097 Pt 6 : 2013 ASTM C127: 2015 ASTM C128: 2015))))))
	9. Moisture Content (Oven Dry Method)	BS 812 : Pt 109 : 1990 SS 73 : 1974 BS EN 1097-5 : 2008	) TT / TCK)))
	10. Impact Value	BS 812 : Pt 112 (AMD 8772, August 1995) SS 73 : 1974))))
	11. Crushing Value	BS 812 : Pt 110 : 1990 SS 73 : 1974)))
	12. 10% Fines Value	BS 812 : Pt 111 : 1990 SS 73 : 1974)))
	13. Los Angeles Abrasion	ASTM C131 – 2014 ASTM C535 – 2016 SS 73 : 1974))))

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B. AGGREGATES: Fine and Coarse Aggregates, Sub- Ballast	14. Organic Impurities	ASTM C40 – 2016 (excluding Clause 5.2) SS 73 : 1974))))
	15. Sand Equivalent Value	ASTM D2419: 2014 (Hand Method)))))
	16. Magnesium Sulphate Soundness	ASTM C88 – 2013 BS 812 : Pt 121 : 1989 SS 73 : Pt 21 : 1992 BS EN 1367 :Pt 2 : 2009))))))
	17. Sodium Sulphate Soundness	ASTM C88 – 2013))))
	18. Angularity Number	SS 73 : 1974))))
	19. Drying Shrinkage	BS 812 : Pt 120 : 1989 (1995) SS 73 : Pt 20 : 1992 BS EN 1367 : Pt 4 : 2008))))
	20. Test Method for potential alkali reactivity of aggregates (mortar-bar method)	ASTM C1260 – 2014	) TT / TCK))))
	21. Aggregate abrasion value	BS 812 : Pt 113 : 1990 BS EN 1097-8 : 2009 Annex A))))
	22. Field Settling	SS 73 – 1974))))
	23. Shape & Surface texture	SS 73 – 1974))))
	24. Petrographic examination of aggregate for concrete	ASTM C295: 2012 BS 812-104 : 1994 BS 7943 : 1999 BS EN 932-3 : 1997) TT))))))))
	25. Shape Index	BS EN 933: Pt 4: 2008) TT / TCK

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B. AGGREGATES: Fine and Coarse Aggregates, Sub- Ballast	26. Methylene Blue Test	BS EN 933: Pt 9: 2009 + A1: 2013)))
	27. Resistance to Fragmentation (LA Abrasion)	BS EN 1097 : Pt 2 : 2010)))
	28. Constituents Material and Concrete	SS 544-2 : 2014 Annex B))
C. ADMIXTURES	1. Air content	) ) BS EN 934-2 : 2009 + A1:	) JS)
	2. Slump	) 2012) SS EN 934-2 : 2015))
	3. Density))
	4. Flow))
	5. Stiffening Time))
	6. Compressive Strength))
	7. Retention of Consistency (Loss of Workability)))
	8. Setting Time	BS EN 480-2 : 2006))
	9. Sampling	BS EN 934-6 : 2019 (SS 320 : 1987) SS EN 934-6 : 2008)))
D. CONCRETE 1. Fresh Concrete	1. Sampling on Site	SS 78: Pt A1: 1987 BS 1881: Pt 101: 1983 BS EN 12350-1: 2019	) JS))
	2. Slump	SS 78: Pt A2: 1987 BS 1881: Pt 102: 1983 BS EN 12350-2: 2019)))
	3. Compacting Factor	SS 78: Pt A3: 1987))
	4. Flow	SS 78: Pt A5: 1987 BS 1881: Pt 105: 1984 BS EN 12350-5: 2019)))

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D. CONCRETE 1. Fresh Concrete	5. Degree of Compatibility	BS EN 12350-4: 2019))	
	6. Air Content (Air Pressure)	SS 78: Pt A6: 1987 BS 1881: Pt 106: 1983 BS EN 12350-7: 2019))))	
	7. Making of Test Cubes	SS 78: Pt A8: 1987 BS 1881: Pt 108: 1983 BS EN 12390-1: 2012 BS EN 12390-2: 2019))))	
	8. Density	SS 78: Pt A7: 1987 BS 1881: Pt 107: 1983 BS EN 12350-6: 2019	) JS)))
	9. Making Test Beams	SS 78: Pt A9: 1987 BS 1881: Pt 109: 1983 BS EN 12390-1: 2012 BS EN 12390-2: 2019)))))	
	10. Making Test Cylinders	SS 78: Pt A10: 1987 BS 1881: Pt 110: 1983 BS EN 12390-1: 2012 BS EN 12390-2: 2019)))))	
	11. Laboratory Mixing and Sampling	SS 78: Pt A25: 1987 BS 1881: Pt 125: 2013 BS EN 480-1: 2014))))	
	2. Hardened Concrete (Physical Tests)	1. Density	SS 78: Pt A14: 1987 BS 1881: Pt 114: 1983 (AMD 6721, July 1991) BS EN 12390-7: 2009) TCK / TT /) SBH))
		2. Compressive Strength of Cubes	SS 78: Pt A16: 1987 BS 1881: Pt 116: 1983 (AMD 6720, July 1991) BS EN 12390-3: 2009) JS / TCK /) SBH))
		3. Splitting Tensile Strength	SS 78: Pt A17: 1987 BS 1881: Pt 117: 1983 (AMD 6096, July 1989) BS EN 12390-6: 2009) TCK / TT /) SBH))
		4. Flexural Strength	SS 78: Pt A18: 1987 BS 1881: Pt 118: 1983 (AMD 6095, July 1989) BS EN 12390-5: 2009)))))

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2. Hardened Concrete (Physical Tests)	5. Compressive Strength of Cores	SS 78: Pt A20 : 1987 BS 1881: Pt 120 : 1983 (AMD 6109, July 1989) BS EN 12504-1: 2009)))))))	
	6. Water Absorption	SS 78: Pt A22: 1987 BS 1881: Pt 122: 2011 ASTM C642: 2013))))	
	7. Static Modulus of Elasticity in Compression	BS 1881: Pt 121: 1983 ASTM C469: 2014	) TCK / TT /) SBH)
	8. Drying Shrinkage & Wetting Expansion	BS 1881: Part 5: 1970 (AMD 4062, February 1983) & (AMD 6262, March 1990) ASTM C157 / C157M: 2017)))))	
	9. Determination of Coefficient of Permeability	Darcy's Theory : - BTD/TP/02: 2002 - HDB Test Method 1989	) JS / THC))
	10. Rapid Chloride Permeability	AASHTO T 277: 1993 ASTM C 1202: 2019	) TCK / TT /) SBH
	11. Standard practice for Petrographic Examination of Hardened Concrete	ASTM C856: 2018a	TT / TCK / OJW / CV	
	12. Water-Cement Ratio	Nordtest method NT Build 361 (Approved 1999-11) (Epoxy Impregnation Method)	TT / TCK / OJW / CV	
	13. Water Permeability	DIN 1048 Pt 5: 1991	JS / THC	
	14. Depth of penetration of water under pressure	BS EN 12390-8 : 2009	JS / THC	
	3. Fiber-reinforced Concrete (Physical Test)	1. Flexural Performance of Fiber-Reinforced Concrete (Using Beam with Third-Point Loading)	ASTM C1609: 2012	TCK / SBH
		2. Measuring the Flexural Tensile Strength (Limit of Proportionality (LOP), Residual)	BS EN 14651: 2005 + A1: 2007	TCK / SBH

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F. MASONRY UNITS			
1. Pre-cast Concrete Masonry Units	1. Determination of Geometrical Characteristics) SS 271 : 1983))) TCK / SBH))
	2. Determination of Compressive Strength))))))
	3. Determination of Drying Shrinkage	) ) )	) TCK / SBH) THC)
	4. Determination of Total Water Absorption))))
	5. Testing Concrete Masonry Units	ASTM C140: 2017b	) TCK / SBH)
2. Ferrocement Roof Slabs / Sunbreaker Slabs	1. Dimension and Density	BS 1881: Pt 114 : 1983	) TCK / SBH)
	2. Cover Measurement	CTD/TP/01 2004))
	3. Initial Surface Absorption	BS 1881: Pt 208 : 1996))
	4. Carbonation Depth	BRE Publication (IP6/81):1988 BS EN 14630: 2006)))
3. Burnt Clay and Shale Bricks	1. Determination of Dimensions	) SS 103 : 1974 )	) THC)
	2. Determination of Compressive Strength))))))
	3. Determination of Water Absorption))))))
	4. Efflorescence))))
	5. Soluble Salt Content))

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4. Refractory Brick	1. Reheat Change	ASTM C113 – 2014) TCK / SBH
	2. Cold Crushing Strength	ASTM C133 – 1997(2015))
	3. Apparent Porosity, Water Absorption and Specific Gravity and Bulk Density	ASTM C20 : 2000(2015))
5. Autoclaved Aerated Concrete	1. Determination of the Compressive Strength	BS EN 772: Pt 1: 2011 + A1: 2015	) THC / JS
	2. Determination of the Density	BS EN 772 : Pt 13 : 2000)
	3. Determination of Drying Shrinkage	BS EN 680 : 2005)
	4. Water Absorption due to capillary action	BS EN 772: Part 11 : 2011 Clause 8.2)
	5. Dimensions	BS EN 772: Part 16 : 2011)

Approved signatories

Mr Jasbeer Singh	(JS)	Ms Thidar Toe	(TT)
Mr Tan Choon Keat	(TCK)	Mr Kevin Sim Boon How	(SBH)
Mr Foong Chee Sung	(FCS)	Mr Tan Hong Choon	(THC)
Ms. Christina Vilaire	(CV)	Mr. Ong John Wei	(OJW)

Note :

This laboratory is accredited in accordance with the recognised International Standard ISO/IEC 17025. A laboratory's fulfilment of the requirements of ISO/IEC 17025 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 are written in language relevant to laboratory operations and operate generally in accordance with the principles of ISO 9001.

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A. REPAIR MATERIAL			
1. Repair Material - Cement-based Bonding Agent, Polymer Modified Mortar, Epoxy Primer, Epoxy Mortar	1. Slant Shear Bond Strength	BS EN 12615 : 1999) JS
	2. Bond Strength	ASTM C882 – 2013a)
	3. Tensile Strength	BS 6319 : Pt 7 : 1985)
2. Repair material – Reinforcement Primer Reinforcement Bar	1. Bond Performance Test	SS 2 : 1987 / BS 4449 : 1997)
	2. Half-cell potential	ASTM C876 – 2015)
3. Polymer Modified Sand-Cement Mortar / Hydraulic Cement Mortar	1. Compressive Strength	ASTM C349 – 2018 ASTM C109/109M – 2016a BS EN 12190: 1999)
	2. Change in Height at Early Ages	ASTM C827 – 2016)
	3. Water Absorption	ASTM C413 – 2018)
	4. Flexure Strength (Mortar with hydraulic Binders)	ASTM C348 – 2018 BS 6319 : Pt 3 : 1990 BS EN 1015-11 : 2019)
	5. Length Change	ASTM C157/C157M –2017)
	6. Setting Time	ASTM C191 : 2018a)

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4. Non-shrink Grout for pressure injection	7. Slant Shear Bond Strength	BS EN 12615 : 1999) JS
	8. Consistence of Fresh Mortar	BS EN 1015-4:1999)
	9. Bulk Density of Fresh Mortar	BS EN 1015-6:1999)
	10. Air Content of Fresh Mortar	BS EN 1015-7:1999)
	1. Flow Consistency	ASTM C939 – 2016a BS EN 1015-3 : 1999)
	2. Expansion / Shrinkage	ASTM C940 –2016)
	3. Bleeding	ASTM C940 –2016)
	4. Initial & Final Set	ASTM C953 –2017)
	5. Compressive Strength	ASTM C942 –2015)
	5. Non-shrink Grout for Semi – Pre-cast Construction	1. Flow Consistency	ASTM C1437 : 2015 BS EN 13395-1:2002
2. Compressive Strength		BS EN 1015 : Pt 11 : 2019)
3. Volume Change		ASTM C827 – 2016)
4. Setting Time		BS EN 196 Pt 3 : 2016)
5. Bond Strength		BS EN 12615 : 1999)
6. Epoxy Mortar	1. Working Time and Service Strength Setting Time	ASTM C308 – 2018)
	2. Compressive Strength	ASTM C579 – 2018)
	3. Coefficient of Linear Thermal Expansion	ASTM C531 – 2018)

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7. Polymer Modified Sand-Cement- Mortar	4. Water Absorption	ASTM C413 –2018) JS
	5. Tensile Strength	ASTM C307 –2018)
	6. Flexural Strength	ASTM C580 –2018)
	1. Shrinkage	ASTM C1090 –2015)
	2. Stiffening Time	BS EN 1015: Pt 9: 1999 BS EN 13294: 2002)
	3. Shrinkage at 28 Days	ASTM C531: 2018)
	4. Tensile Pull-Off Before and After Weathering	BS EN 1015-12: 2016 BS EN 1542: 1999)
8. Cement-Based Bonding Aid	5. Compressive Strength	ASTM C109/ 109M –2016a)
	1. Slant Shear Band Strength	ASTM C1042 : 1999)
	2. Bonding Strength	ASTM C932 : 2006 (2019))
9. Epoxy Resin for injection	3. Total Solid Content	ISO 124 : 2014 (at Atmospheric Pressure))
	1. Bond Strength	ASTM C882 : 2013a)
	2. Density	SS 5 : Pt B7: 2013)
10. Waterproofing Material for Repair to External Wall Seepage	3. Adhesion by Slant Shear Method	BS EN 12618-3: 2004)
	1. Tensile Strength & Elongation at Break	ASTM D412–2016 (Method A)	) SL
	2. Adhesion Strength	ASTM D4541 – 2002 ASTM D7234 – 2012)
	3. Crack Bridging	BTD/TP/ 03 -2011 AS/NZS 4548.5 (1999) BS EN 1062-7 (2004) (Method A Class A1)) SL

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	4. Shore A & D Hardness	ASTM D2240 - 2015)
	5. a) Set To Touch Time b) Dust Free Time c) Dry To Touch Time d) Dry Hard Time e) Dry Through Time f) Dry To Recoat	ASTM D1640 – 2014)
)
)
)
)
)
	6. Water Vapour Transmission	ASTM D1653 – 2013 ASTM E96 / E96M – 2016 ISO 7783: 2018)
)
	7. Surface Drying Time	BS EN ISO 9117-3: 2010)
	8. Non Volatile Matter Content	BS EN ISO 3251 – 2019)
	9. UV Accelerated / Artificial Weathering	ASTM G154 – 2016 BS EN ISO 1062-11 – 2002)
)			
10. Film Thickness	BTD/TP/14 -2012)	
11. Heat Ageing	BTD/TP/04 – 2011 Oven drying at 70°C)	
)	
12. Xenon Arc Accelerated Weathering	SS 5 Part G4 – 2003 SS 5 Part G9: 2013)	
)	
11. Flexible Non- Cementitious Waterproof Membrane (Water-Based)	1. Tensile Strength & Elongation at Break	ASTM D412 – 2016 (Method A))
	2. Adhesion Strength	ASTM D4541 – 2002 ASTM D7234 –2012)
	3. Crack Bridging	BTD/TP/ 03 -2011 AS/NZS 4548.5 (1999) BS EN 1062-7 (2004) (Method A Class A1)) SL
)
4. Shore A & D Hardness	ASTM D2240 - 2015)	

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	5. a) Set To Touch Time b) Dust Free Time c) Dry To Touch Time d) Dry Hard Time e) Dry Through Time f) Dry To Recoat	ASTM D1640 – 2014))))))))))	
	6. Water vapour transmission	ASTM E96 / E96M – 2016 ASTM D1653 – 2013 ISO 7783: 2018)))))	
	7. Surface Drying Time	BS EN ISO 9117-3: 2010))	
	8. Non Volatile Matter Content	BS EN ISO 3251 – 2019)))	
	9. UV Accelerated / Artificial Weathering	ASTM G154 – 2016 BS EN ISO 1062-11 – 2002)))	
	10. Film Thickness	BTD/TP/14 -2012))	
	12. Flexible Cementitious Waterproof of Membrane (Water-Based)	1. Tensile Strength & Elongation at Break	ASTM D412–2016 (Method A))))
		2. Adhesion Strength	ASTM D4541 – 2002 ASTM D7234 – 2012)))
		3. Crack Bridging	BTD/TP/ 03 -2011 AS/NZS 4548.5 (1999) BS EN 1062-7 (2004) (Method A Class A1))))))
		4. Shore A & D Hardness	ASTM D2240 - 2015)
5. a) Set To Touch Time b) Dust Free Time c) Dry To Touch Time d) Dry Hard Time e) Dry Through Time f) Dry To Recoat		ASTM D1640 – 2014) SL)))))	

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13. Waterproofing Membrane for RC Roof	6. Water vapour transmission	ASTM E96 / E96M – 2016 ASTM D1653 – 2013 ISO 7783: 2018))))
	7. Surface Drying Time	BS EN ISO 9117-3: 2010))
	8. Non-Volatile Matter Content	BS EN ISO 3251 – 2019))
	9. UV Accelerated / Artificial Weathering	ASTM G154 – 2016 BS EN ISO 1062-11 – 2002)))
	10. Film Thickness	BTD/TP/14 -2012))
	11. Pliability	ASTM D146 – 2004(2012)e1 Clause 14.1)))
	1. Tensile Strength & Elongation at Break	ASTM D412–2016 (Method A))))
	2. Adhesion Strength	ASTM D4541 – 2002 ASTM D7234 – 2012)))
	3. Crack Bridging	BTD/TP/ 03 - 2011 AS/NZS 4548.5 (1999) BS EN 1062-7 (2004) (Method A Class A1))))))
	4. Initial Hardness (Shore A)	ASTM D2240 - 2015))
	5. a) Set To Touch Time b) Dust Free Time c) Dry To Touch Time d) Dry Hard Time e) Dry Through Time f) Dry To Recoat	ASTM D1640 –2014)))))))
	6. Water vapour transmission	ASTM E96 / E96M – 2016 ASTM D1653 –2013 ISO 7783: 2018	) SL)))
	7. Surface Drying Time	BS EN ISO 9117-3: 2010)
	8. Non-Volatile Matter Content	BS EN ISO 3251 – 2019)

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B. BUILDING MATERIALS			
1. Tile Adhesive	1. Tensile Adhesion Strength) BS EN 12004-2: 2017) JS / RT / THC
	2. Shear Adhesion Strength))
	3. Open Time))
	4. Deformity Test))
	5. Slip Resistance))
2. Tile Grout	1. Resistance to Abrasion	BS EN 12808-2 : 2008)
	2. Flexural Strength & Compressive Strength	BS EN 12808-3 : 2008)
	3. Shrinkage	BS EN 12808-4 : 2009)
	4. Water Absorption	BS EN 12808-5 : 2008)
3. Floor Hardener	1. Resistance to Weight Loss and Thickness Wear	) BTD/TP/01 (2002)	) THC
4. Water Proofing Agent	1. Coefficient of Permeability	Darcy's Theory: -BTD/TP/02 (2002)	THC / JS
5. Self -Levelling Screed	1. Compressive Strength	ASTM C109/109M –2016a	) JS / SS / THC
	2. Linear Shrinkage/Length Change	ASTM C157/C157M –2017 ASTM C531: 2018)
	3. Slip Resistance (before & after accelerated weathering)	SS485:2011 Method A BS 7976-2: 2002 + A1: 2013)
	4. Wear Resistance (before & after accelerated weathering)	BS EN 13892-4 : 2002)
	5. Tensile Adhesion Bond Strength	BS EN 13892-8 : 2002)
	6. Shear Adhesion Bond Strength	BTD/TP/19 – 2014)

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6. Prepacked Plaster	7. Accelerated Weathering (UV exposure)	ASTM G154 – 2016)
	8. Flowability	ASTM C939 : 2016a)
	9. Water Absorption	ASTM C413: 2018 (Method A))
	1. Tensile Adhesion Strength (before and after UV exposure)	BS EN 1015-12 : 2016 ASTM G154: 2016)
	2. Compressive Strength	BS EN 1015-11 : 2019)
	3. Consistence Retentivity	BS 4551: 2005 + A2: 2013)
	4. Water Retentivity	BS 4551: 2005 + A2: 2013)
7. Prepacked Skimcoat	5. Stiffening Time	BS EN 1015-9 (Method A): 1999)
	6. Linear Shrinkage	ASTM C531 : 2018)
	1. Tensile Adhesion Strength (before and after UV exposure)	BS EN 1015-12 : 2016 ASTM G154: 2016	) JS / SS / THC
	2. Compressive Strength	BS EN 1015-11 : 2019)
	3. Water Retentivity	BS 4551 : 2005 + A2: 2013)
8. Sealant	4. Setting Time	BS EN 196 Pt 3 : 2016)
	5. Linear Shrinkage	ASTM C531 : 2018)
	1. Staining and Colour Change	ASTM C510 : 2016	) SL / SS
	2. Rheological (Flow) Properties	ASTM C639 : 2015)
	3. Indentation Hardness	ASTM C661 : 2015)
4. Tack Free Time	ASTM C679 : 2015)	
5. Adhesion and Cohesion Under Cyclic Movement	ASTM C719 : 2014)	

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	6. Effects of Heat Ageing	ASTM C1246: 2017)
	7. Effects of Accelerated Weathering	ASTM C793 : 05(2017))
	8. Adhesion-In-Peel	ASTM C794 : 2015a)

Approved signatories

Mr Tan Hong Choon (THC)

Mr Jasbeer Singh (JS)

Ms Shirley Lim Sui Di (SL)

Mr. Raymond Tan Hai Chuan (RT)

Mr. Salim Suwignjo (SS)

Note :

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A. PAINT AND COATING	1. Determination of Pull-off Strength using Portable Adhesion Testers	ASTM D4541 – 2009e1 ASTM D4541 – 2002	HYM / SL / SS
	2. Non-Destructive Measurement of Dry Film Thickness of Non-Magnetic Coatings Applied to a Ferrous Base	ASTM D7091 –2013	HYM
B. PAINT, COATING, VARNISHES AND RELATED MATERIALS	1. Dry Film Thickness	SS 5 Part B1: 2003) (Method SS 5 Part B1: 2013) 6A & 7) ISO 2808: 2007) ASTM D7091: 2013)	SL / SS
	2. Non-Volatile matter	SS 5 Part B2: 2003) SS 5 Part B2: 2013) ISO 3251: 2019))
	3. Condition in container	SS 5 Part B4: 2003))
	4. Skinning	SS 5 Part B5: 2003))
	5. Storage stability	SS 5 Part B6: 1987 (2003) SS 5 Part B6: 2013))
	6. Density	SS 5 Part B7: 2003) SS 5 Part B7: 2013) ISO 2811-1: 2016))
	7. Brushing properties	SS 5 Part B9: 2003))

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B. PAINT, COATING, VARNISHES AND RELATED MATERIALS	8. Consistency (Stormer Viscometer)	SS 5 Part B12: 2003 SS 5 Part B12: 2013)) SL / SS))
	9. Fineness of Grind	SS 5 Part B13: 2018))
	10. Hard Drying Time	SS 5 Part D3: 1988))
	11. Through Dry State and Through Dry Time	SS 5 Part D5: 2003 SS 5 Part D5: 2013 ISO 9117-1: 2009))))
	12. Drying Test Using Mechanical Recorder	ISO 9117-4 : 2012)))
	13. Gloss	SS 5 Part E1: 2003 ASTM D523: 2014(2018) ISO 2813: 2014 BS EN ISO 2813: 2014 AAMA 2605: 2017a AAMA 2604: 2017a))))))))
	14. Opacity	SS 5 Part E2: 2003 SS 5 Part E2: 2013)))
	15. Colour	SS 5 Part E3: 2003))
	16. Mandrel Bend Test	SS 5 Part F1: 2003 SS 5 Part F1: 2013 ASTM D522: 2017 (Method B))))))
	17. Scratch Resistance	SS 5 Part F2: 2003 SS 5 Part F2: 2013 BS EN ISO 1518 Part 1: 2011))))
	18. Abrasion Resistance by Taber Abraser	SS 5 Part F3: 2003 SS 5 Part F3: 2013 ASTM D4060: 2014 ISO 7784-2: 2016)))))
	19. Wet Scrub Resistance	SS 5 Part F5: 2003 SS 5 Part F6: 2014 ISO 11998: 2006))))

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B. PAINT, COATING, VARNISHES AND RELATED MATERIALS	34. Degree of Blistering	SS 5 Part H2: 1998 (2003) SS 5 Part H2: 2013) SL / SS))
	35. Water Vapour Transmission	ASTM D1653 – 2013 ASTM E96 / E96M – 2016)))
	36. Water absorption	SS 500 Annex A: 2015))
	37. Efflorescence	SS 500 Annex B: 2015))
	38. Roller Coating	SS 500 : 2015 SS 150 : 2015)))
	39. Paint & Coating specifications	SS 7 : 1998 SS 34 : 1998 SS 38 : 1998 SS 150 : 2015 SS 345 : 2015 SS 494 : 2001 SS 500 : 2015))))))))
C. VINYL FLOORING	1. Thickness of layers	BS EN ISO 24340: 2012	) SS)
	2. Overall thickness	BS EN ISO 24346: 2012))
	3. Length, width and straightness	BS EN ISO 24342: 2018)))
	4. Mass per unit area	BS EN ISO 23997: 2012))
	5. Castor chair test	ISO 4918: 2016))
	6. Slip Resistance	SS 485: 2011 Annex A & B)
D. CERAMIC TILES 1 Ceramic Wall and Floor Tiles	1. Dimensions	) BS EN ISO 10545-2 : 2018) SS 57 : 1989	) THC / FCS /) RT / EC
	2. Straightness of Sides) SS 301 : 1985) ISO 10545-2 : 2018) MK)
	3. Rectangularity))))
	4. Surface Flatness))))
	5. Surface Quality))))

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D. CERAMIC TILES 1 Ceramic Wall and Floor Tiles	6. Resistance to Deep Abrasion	SS 301 : 1985 BS EN ISO 10545-6 : 2012 ISO 10545-6 : 2010) THC / FCS /) RT / EC / MK))
	7. Resistance to Surface Abrasion	SS 301 : 1985 BS EN ISO 10545-7 : 1999 ISO 10545-7:1996))))
	8. Modulus of Rupture (tiles > 95 mm)	SS 57 : 1989 SS 301 : 1985 BS EN ISO 10545-4: 2019 BS EN ISO 10545-4: 2004 ISO 10545-4: 2014 ISO 10545-4: 2004)))))))
	9. Water Absorption	SS 57 : 1989 SS 301 : 1985 BS EN ISO 10545-3 : 1997 BS EN ISO 10545-3 : 2018 ISO 10545-3 : 1997 ISO 10545-3 : 2018)))))))
	10. Scratch Hardness of Surface	EN 101 : 1991 EN 159 : 1991 SS 57 : 1989 SS 301 : 1985)))))
	11. Colour Fastness	DIN 51094 - 1996 SS 57 : 1989 SS 301 : 1985))))
	12. Slip Resistance	SS 485 : 2011))
	13. Reverse Staining	BTD/TP/10 (2003)))
	14. Cracking Resistance	SS 57 : 1989 SS 301 : 1985 BS EN ISO 10545 -11 : 1996 SS 70 : 2001 ISO 10545 -11 : 1994))))))

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E. SURFACE SYSTEM	1. Sports Hall Surface (Lab and Site)	1. Shock Absorption) RT	
		2. Vertical Deformation)	
		3. Vertical Ball Behaviour (Acoustic Method))	
		4. Slip/Skid Resistance of Dry Surface)	
		5. Behaviour Under a Rolling Load)	
		6. Specifications)	
	2. Pedestrian Surface Materials	1. Pendulum Test	SS 485: 2011 Annex A ASTM E303: 1993(2018) BS 7976-2: 2002 + A1: 2013) RT / LBT) EC / MK
		2. Dry Floor Fiction Test	SS 485: 2011 Annex B)

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A. ROCKS	1. Unconfined Compressive Strength of Core Specimens	CTD/TP/07: 2008 (Adopted from ASTM D2938) ASTM D7012: 2014 Method C) TT / TCK)))
	2. Water (Moisture) Content of Soil and Rock Dimensional and Shape Tolerance	ASTM D2216: 2019 ASTM D4543: 2008)))))
	3. Point Load Test	ISRM Journal Vol. 22, No. 2, pp. 51-60: 1985))))
	4. Cerchar Abrasivity	ASTM D7625 : 2010)
B. NATURAL STONE / GRANITE	1. Water Absorption and Density	ASTM C97 2018	) FCS / RT / EC))
	2. Compressive Strength	ASTM C170 - 2017 BS EN 1926 Annex A : 2006)))
	3. Modulus of Rupture	ASTM C99 2018))
	4. Flexural Strength	ASTM C880 2018)
	5. Salt Crystallisation	BS EN 12370 : 1999	) FCS)
	6. Determination of Water Absorption coefficient by Capillarity	BS EN 1925 : 1999)))

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D. SOIL	10. Shear Strength by direct shear (Small Shearbox Apparatus)	BS 1377: Pt 7 Method 4:1990) PDS / AS))))
	11. Maximum and Minimum Dry Density	BS 1377: Pt 4 Method 4: 1990))))
	12. Bulk Density	BS 1377: Pt 2: 1990)))
	13. Particle Density	BS 1377: Pt 2: 1990)))
	14. Particle Size Distribution (Hydrometer)	BS 1377: Pt 2: 1990))))
	15. One-dimensional Consolidation	BS 1377: Pt 5: 1990)))
	16. Consolidated-drained (CD) Triaxial Compression	BS 1377: Pt 8: 1990))))
	17. Consolidated-undrained (CU) Triaxial Compression	BS 1377: Pt 8: 1990))))
	18. Unconsolidated-undrained (UU) Triaxial Compression	BS 1377: Pt 7: 1990))))
	19. Unconfined Compressive Strength	BS 1377: Pt 7: 1990)))
	20. Moisture density relation (compaction)	ASTM D558: 2011) PDS)
	21. Material Finer than 75 µm Sieve by Washing	ASTM D1140: 2017) PDS / AS)

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Note :

This laboratory is accredited in accordance with the recognised International Standard ISO/IEC 17025. A laboratory's fulfilment of the requirements of ISO/IEC 17025 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 are written in language relevant to laboratory operations and operate generally in accordance with the principles of ISO 9001.

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A. HARDENED CONCRETE (Non-Destructive Tests)	1. Surface Hardness (Rebound Hammer)	BS EN 12504-2 : 2012) HYM / OJW /) LBT)
	2. Ultrasonic Pulse Velocity Measurement	ASTM C597 – 2016 BS EN 12504-4: 2004)))
	3. Electromagnetic Cover Measurement (for determination of cover only)	BS 1881 : Pt 204 : 1988))))
	4. Half-Cell Potential Measurement	ASTM C876 – 2015	HYM / OJW
	5. Depth of Carbonation on cores or broken concrete	BRE Publication (IP6/81) RILEM TC14-CPC 1988 BS EN 14630: 2006	HYM / OJW / LBT
	6. Penetration Resistance	ASTM C803 – 2018	HYM / OJW / LBT
	7. Detection of Objects Embedded in Concrete	CTD/TP/05 - 2014	HYM / OJW / CST

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B. STRUCTURAL FIXINGS	1. Determination of Tensile Strength (Pull-out Strength) of Structural Fixings in Concrete and Masonry	BS 5080 : Pt 1 : 1993) THC / HYM
	2. In-Situ Pull-Out (Pull-Off) Adhesive Strength for Tiles/Marble/Granite/ Adhesive/ Repair Materials/Screed/Self-Levelling Screed/Plasters/Skim Coats	BTD/TP/08 - 2015a	THC / HYM
C. WINDOWS AND CURTAIN WALLS	1. Field Water Tightness Test	BCA Conquas: 2017 Appendix 2 Part 5 Item 2 SS CP 96: 2002 Clause 4.3a AAMA 501.2: 2015	OJW / HYM / ACT / MDCM

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