

Laboratory **Urban Lab + Consultants, Office No.: 10, 06, Bldg. No.: 01, Sindhi Colony, Ram Nagar Marg, Borivali- West, Mumbai, Maharashtra**

Accreditation Standard **ISO/IEC 17025: 2005**

Certificate Number **TC-7947**

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Validity **26.09.2018 to 25.09.2020**

Last Amended on --

| Sl. | Product / Material of Test | Specific Test Performed | Test Method Specification against which tests are performed | Range of Testing / Limits of Detection |
|-----|----------------------------|-------------------------|---|--|
|-----|----------------------------|-------------------------|---|--|

MECHANICAL TESTING

| I. BUILDING MATERIALS | | | | | | |
|------------------------------|---------------------------|---------------------------------------|--------------------------------------|--|------------------|---|
| 1. | Aggregate-Coarse | Sieve Analysis | IS 2386 (Part 1) | 0.1 % to 100 % (4.75 to 63 mm) | | |
| | | Flakiness Index | IS 2386 (Part 1) | 1 % to 50 % | | |
| | | Elongation Index | IS 2386 (Part 1) | 1 % to 50 % | | |
| | | Specific Gravity | IS 2386 (Part 3) | 2 to 4 | | |
| | | Water Absorption | IS 2386 (Part 3) | 0.5 % to 6 % | | |
| | | Bulk Density | IS 2386 (Part 3) | 1.2 kg/L to 2.0 kg/L | | |
| | | Impact Value | IS 2386 (Part 4) | 5 % to 50 % | | |
| | | Crushing Value | IS 2386 (Part 4) | 5 % to 50 % | | |
| | | 2. | Aggregate-Fine | Sieve Analysis | IS 2386 (Part 1) | 0.1 % to 100 % (0.075 mm to 4.75 mm) |
| | | | | Material Finer than 75 Micron | IS 2386 (Part 1) | 1 % to 20 % |
| Specific Gravity | IS 2386 (Part 3) | | | 2 to 4 | | |
| Water Absorption | IS 2386 (Part 3) | | | 0.1 % to 10 % | | |
| Bulk Density | IS 2386 (Part 3) | | | 1.2 kg/L to 2.0 kg/L | | |
| Percentage of Bulking | IS 2386 (Part 3) | | | 2 % to 40 % | | |
| 3. | Cement (OPC / PPC) | Fineness by Dry Sieving | IS 4031 (Part 2) | 1 % to 20 % | | |
| | | Fineness by Blaine's Air Permeability | IS 4031 (Part 2) | 200 m ² /kg to 400 m ² /kg | | |
| | | Soundness by Le-Chatelier Method | IS 4031 (Part 3) | 0.1 mm to 10 mm | | |
| | | Standard Consistency | IS 4031 (Part 4) | 25 % to 40 % | | |
| | | Initial Setting Time | IS 4031 (Part 5) | 30 min. to 300 min. | | |
| | | Final Setting Time | IS 4031 (Part 5) | 100 min. to 600 min. | | |
| | | 4. | Pozzolanic Material - Fly Ash | Fineness by Dry Sieving | IS 1727 | 5 % to 40 % |
| Initial Setting Time | IS 1727 | | | 30 min. to 300 min. | | |
| Final Setting Time | IS 1727 | | | 100 min. to 400 min. | | |

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| | | Fineness by Blaine's Air Permeability | IS 1727 | 200 m ² /kg to 600 m ² /kg |
| | | Soundness by Le-Chatelier Method | IS 1727 | 0.1 mm to 10 mm |
| 5. | Concrete | Compressive Strength (Cube & Core) | IS 516 | 5 N/mm ² to 80 N/mm ² |
| | | Rapid Chloride Permeability Test | ASTM C 1202 | 250 Coulomb to 8000 Coulomb |
| | | Initial Surface Absorption | BS 1881-208 | 0.01ml/m ² /s to 1.8 ml/m ² /s |
| | | Water Absorption | BS 1881-122 | 0.1 % to 3 % |
| 6. | Bricks (Burnt Clay) | Dimensions Length Width Height | IS 1077 | 2000 mm to 5000 mm 1000 mm to 3500 mm 1000 mm to 2500 mm |
| | | Compressive Strength | IS 3495 (Part 1) | 1 N/mm ² to 20 N/mm ² |
| | | Water Absorption | IS 3495 (Part 2) | 3 % to 30 % |
| | | Efflorescence | IS 3495 (Part 3) | Qualitative (Visual) |
| 7. | Bricks (Fly Ash) | Dimensions Length Width Height | IS 13757 | 2000 mm to 5000 mm 1000 mm to 3500 mm 1000 mm to 2500 mm |
| | | Compressive Strength | IS 3495 (Part 1) | 1 N/mm ² to 20 N/mm ² |
| | | Water Absorption | IS 3495 (Part 2) | 3 % to 30 % |
| | | Efflorescence | IS 3495 (Part 3) | Qualitative (Visual) |
| 8. | Autoclaved Cellular (Aerated) Concrete Blocks | Dimensions Length Width Height | IS 2185 (Part 3) | 100 mm to 900 mm 50 mm to 500 mm 30 mm to 300 mm |
| | | Bulk Density | IS 6441 (Part 1) | 0.25 g/cc to 1.2 g/cc |
| | | Moisture Content | IS 6441 (Part 1) | 3 % to 35 % |
| | | Compressive Strength | IS 6441 (Part 5) | 0.5 N/mm ² to 15 N/mm ² |

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| 9. | Precast Concrete Paving Block | Water Absorption | IS 15658 | 1 % to 10 % |
| | | Compressive Strength | IS 15658 | 10 N/mm ² to 80 N/mm ² |
| 10. | Checked Concrete Tiles | Water Absorption | IS 13801 | 1 % to 20 % |
| 11. | Cement Concrete Flooring Tiles | Water Absorption | IS 1237 | 1 % to 20 % |
| 12. | Ceramic Tiles | Water Absorption | IS 13630 (Part 2) | 0.01 % to 0.1 % |
| II. | SOIL AND ROCKS | | | |
| 1. | Soil | Water Content | IS 2720 (Part 2) | 1 % to 50 % |
| | | Specific Gravity | IS 2720 (Part 3) | 2.4 to 2.9 |
| | | Sieve Analysis (Wet Analysis) | IS 2720 (Part 4) | 0.1 % to 100 % (0.075 mm to 4.75 mm) |
| | | Liquid Limit | IS 2720 (Part 5) | 5 % to 300 % |
| | | Plastic Limit | IS 2720 (Part 5) | 5 % to 300 % |
| | | Light Compaction | IS 2720 (Part 7) | OMC: 6 % to 30 % MDD: 1.5 g/cc to 2.5 g/cc |
| | | Heavy Compaction | IS 2720 (Part 8) | OMC: 6 % to 30 % MDD: 1.6 g/cc to 2.9 g/cc |
| | | Free Swell Index | IS 2720 (Part 40) | Upto 300 % |

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MECHANICAL TESTING

| <u>AT SITE</u> | | | | |
|-----------------------|-----------------------|-----------------------------------|-------------------|----------------------|
| I. | SOIL AND ROCKS | | | |
| 1. | Soil | Dry Density by Core Cutter Method | IS 2720 (Part 29) | 1.3 g/cc to 2.5 g/cc |