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| Laboratory | Geo Engineering Services, SDB-66, Adipur, Gandhidham, District Kachchh, Gujarat | | |
| Accreditation Standard | ISO/IEC 17025: 2005 | | |
| Discipline | Mechanical Testing | Issue Date | 05.06.2014 |
| Certificate Number | T-3006 | Valid Until | 04.06.2016 |
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| S.No. | Product / Material of Test | Specific Test Performed | Test Method Specification against which tests are performed | Range of Testing / Limits of Detection |
|--|---|--------------------------------|--|---|
| 1. MECHANICAL PROPERTIES OF MATERIALS | | | | |
| 1. | STEEL (High Strength Deformed Steel, Bars & Steel Wire, Low Media and High Tensile Structures Steel) | Yield Strength | IS:1608:2005 Reaffirmed 2010 | 160 N/mm ² - 725 N/mm ² |
| | | Ultimate Strength | IS:1608:2005 Reaffirmed 2010 | 160 N/mm ² - 725 N/mm ² |
| | | Elongation | IS:1608:2005 Reaffirmed 2010 | 5 - 30 % |
| | | Sectional Weight | IS:1608:2005 Reaffirmed 2010 | 0.1 - 10 kg/m |
| | | Bend Test | IS:1599:2012 | 6 mm - 32mm |
| II. BUILDING MATERIALS | | | | |
| 1. | COARSE AGGREGATE | Grading (Sieve Analysis) | IS:2386 (Part-1):1963 Reaffirmed 2011, Amend.4 | 90 - 0.075 mm |
| | | Flakiness Index | IS:2386 (Part-1):1963 Reaffirmed 2011, Amend.4 | 1 - 60% |
| | | Elongation Index | IS:2386 (Part-1):1963 Reaffirmed 2011, Amend.4 | 1 - 60% |
| | | Specific Gravity | IS:2386 (Part-3):1963 Reaffirmed 2011 | 1.5 - 3.5 |

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| | | Water Absorption | IS:2386 (Part-3):1963 Reaffirmed 2011 | 0 - 20 % |
| | | Bulk Density | IS:2386 (Part-3):1963 Reaffirmed 2011 | 1 - 3 kg/l |
| | | Abrasion Value | IS:2386 (Part-4):1963 Reaffirmed 2011, Amend.3 | 0 - 50 % |
| | | Impact Value | IS:2386 (Part-4):1963 Reaffirmed 2011, Amend.3 | 0 - 50 % |
| | | Crushing Value | IS:2386 (Part-4):1963 Reaffirmed 2011, Amend.3 | 0 - 50 % |
| 2. | FINE AGGREGATE | Grading (Sieve Analysis) | IS:2386 (Part-1):1963 Reaffirmed 2011 | 90 - 0.075 mm |
| | | Specific Gravity | IS:2386 (Part-3):1963 Reaffirmed 2011 | 1.5 - 3.5 |
| | | Water Absorption | IS:2386 (Part-3):1963 Reaffirmed 2011 | 0 - 20 % |
| | | Bulk Density | IS:2386 (Part-3):1963 Reaffirmed 2011 | 1 - 3 kg/l |

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| 2. | BRICK | Compressive Strength | IS:3495 (Part-1):1992 Reaffirmed 2011 | 0.5 - 35 N/mm ² |
| | | Water Absorption | IS:3495 (Part-2):1992 Reaffirmed 2011 | 1 - 40 % |
| | | Sizes and Shapes (Dimensions) | IS:3495:1992 Reaffirmed 2011 | 25 - 5000 mm |
| | | Efflorescence | IS:3495 (Part-3):1992 Reaffirmed 2011 | Qualitative |
| 2. | HARDENED CONCRETE CUBE / CORE | Compressive Strength | IS:516:1959 Reaffirmed 2008, Amend.2 | 1 - 80 N/mm ² |
| 3. | CONCRETE (FRESH) | Slump Test | IS:1199:1959 Reaffirmed 2004 Clause No.5.1 | 0 - 300 mm |
| 4. | PAVER BLOCK | Compressive Strength | IS:15658:2006, Annex-D Reaffirmed 2011 | 1 - 60 N/mm ² |
| | | Water Absorption | IS:15658:2006, Annex-C Reaffirmed 2011 | 1 – 15 % |
| 5. | CEMENT | Fineness by Blaine's Air Permeability | IS 4031 (Part-2) : 1999 Reaffirmed 2008, Amend.1 | 100 - 400 m ² /kg |
| | | Soundness | IS 4031 (Part-3) : 1988 Reaffirmed 2009, Amend.2 | 0.5 - 15 mm |

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| | | Consistency | IS 4031 (Part-4) :1988 Reaffirmed 2009, Amend.2 | 20 - 40 % |
| | | Initial Setting | IS 4031(Part-5) :1988 Reaffirmed 2009, Amend.2 | 5 - 300 min |
| | | Final Setting | IS 4031(Part-5) :1988 Reaffirmed 2009, Amend.2 | 30 - 700 min |
| | | Compressive Strength | IS 4031(Part-6) : 1988 Reaffirmed 2009, Amend.3 | 10 - 70 N/mm ² |
| | | Density | IS 4031(Part-11) : 1988 Reaffirmed 2009 | 1 - 5 g/cc |
| 6. | BITUMEN | Specific Gravity | IS:1202:1978 Reaffirmed 2009 | 0.5 - 3.0 |
| | | Penetration Test | IS:1203:1978 Reaffirmed 2009 | 1 - 120 mm |
| | | Softening Point | IS:1205:1978 Reaffirmed 2009 | 0 - 100 °C |
| | | Ductility | IS:1208:1978 Reaffirmed 2009 | 1 - 100 cm |
| | | Flow Value Test | ASTM - D 6927 – 2006 | 1 - 6 mm |

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| | | Marshall Stability | ASTM - D 6927 – 2006 | 5 – 25 kN |
| | | Kinematic Viscosity | IS 1206 (Part-3):1978 Reaffirmed 2009, Amend 02 | 60 – 1000 cSt |
| | | Absolute Viscosity | IS 1206 (Part-2):1978 Reaffirmed 2009, Amend 02 | 100 – 8000 poise/s |
| III. SOIL & ROCKS | | | | |
| 1. | SOIL | Specific Gravity | IS 2720 (Part-3) : 1980 Reaffirmed 2011 | 1.5 - 3.0 |
| | | Grain Size (Sieve) Analysis | IS 2720 (Part-4) : 1985 Reaffirmed 2010 | 10 mm – 0.075mm |
| | | Atterberg's Limit (Liquid Limit) | IS: 2720 (Part-5):1985 Reaffirmed 2010 | 10 - 500 % |
| | | Atterberg's Limit (Plastic Limit) | IS: 2720 (Part-5):1985 Reaffirmed 2010 | 10 - 500 % |
| | | Standard Proctor Light Compaction | IS:2720 (Part-7):1980 Reaffirmed 2011, Amend.02 | MDD - 1.4 - 3.0 g/cc OMC - 5 - 30 % |
| | | Modified Proctor Heavy Compaction | IS:2720 (Part-8):1983 Reaffirmed 2010 | MDD - 1.4 - 3.0 g/cc OMC – 5 – 30 % |
| | | Free Swell | IS:2720 (Part- 40) 1977 Reaffirmed 2011 | 5 - 600 % Max. |

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| | | Laboratory CBR | IS:2720 (Part-5):1985 Reaffirmed 2010 | 1 – 100% |
| 2. | ROCK | Water Content | IS:13030:1991 Reaffirmed 2010 | 0.1 - 50 % |
| | | Porosity | IS:13030:1991 Reaffirmed 2010 | 0.1- 50 % |
| | | Density | IS:13030:1991 Reaffirmed 2010 | 1 - 4 g/cc |
| | | Unconfined Compressive Strength | IS:9143:1979 Reaffirmed 2010 | 50- 200N/mm ² |

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