

Laboratory **Anshutech Labs (P) Ltd., RZ-24, Plot No.-323, Gali No.-3, Dabri Village, New Delhi**

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

Certificate Number **TC-6886**

Page 1 of 7

Validity **07.02.2018 to 06.02.2020**

Last Amended on **06.09.2019**

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

CHEMICAL TESTING

| | | | | |
|-------------|-----------------------------|--|-------------------|-----------------------|
| I. | METALS & ALLOYS | | | |
| 1. | Low Alloy Steel | Carbon | IS 228(Part 1) | 0.01% to 2.0% |
| | | Sulphur | IS 228(Part 9) | 0.001% to 1.0% |
| | | Phosphorous | IS 228(Part 3) | 0.001% to 1.0% |
| | | Manganese | IS 228(Part 2) | 0.01% to 3.0% |
| | | Silicon | IS 228(Part 8) | 0.1% to 2.0% |
| II. | WATER | | | |
| 1. | Construction Water | Acidity | IS 3025(Part 22) | 0.1 mg/l to 100 mg/l |
| | | Alkalinity | IS 3025(Part 23) | 0.1 mg/l to 500 mg/l |
| | | Organics (Volatile Residue) | IS 3025(P art 18) | 0.1 mg/l to 300 mg/l |
| | | Inorganic(Fixed Residue) | IS 3025(Part 18) | 0.1 mg/l to 8000 mg/l |
| | | Suspended Matter | IS 3025(Part 17) | 0.1 mg/l to 2000 mg/l |
| | | Sulphate (as SO ₃) | IS 3025(Part 24) | 0.01 mg/l to 500 mg/l |
| | | Chloride | IS 3025(Part 32) | 0.1 mg/l to 5000 mg/l |
| | | pH | IS 3025(Part 11) | 1 to 14 |
| III. | BUILDING MATERIALS | | | |
| 1. | Cement (OPC/PPC/PSC) | Silica Content (SiO ₂) | IS 4032 | 1% to 50% |
| | | Alumina (Al ₂ O ₃) | IS 4032 | 0.1% to 20% |
| | | Ferric Oxide (Fe ₂ O ₃) | IS 4032 | 0.1% to 20% |
| | | Calcium Oxide (CaO) | IS 4032 | 0.1% to 70% |
| | | Insoluble residue | IS 4032 | 0.1% to 50% |
| | | Magnesia | IS 4032 | 0.1% to 10% |
| | | Total Sulphur (as SO ₃) | IS 4032 | 0.1% to 10% |
| | | Sulphide Sulphur | IS 4032 | 0.1% to 5% |
| | | Total loss on ignition | IS 4032 | 0.1% to 10% |
| | | Chloride | IS 4032 | 0.005% to 1% |

Laboratory **Anshutech Labs (P) Ltd., RZ-24, Plot No.-323, Gali No.-3, Dabri Village, New Delhi**

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

Certificate Number **TC-6886**

Page 2 of 7

Validity **07.02.2018 to 06.02.2020**

Last Amended on **06.09.2019**

| Sl. | Product / Material of Test | Specific Test Performed | Test Method Specification against which tests are performed | Range of Testing / Limits of Detection |
|-----|---------------------------------|--|---|--|
| 2. | Fly Ash | Silica Content (SiO ₂) | IS 1727 | 1% to 90% |
| | | Alumina (Al ₂ O ₃) | IS 1727 | 0.1% to 20% |
| | | Ferric Oxide (Fe ₂ O ₃) | IS 1727 | 0.1% to 20% |
| | | Insoluble Residue | IS 1727 | 0.1% to 50% |
| | | Magnesia | IS 1727 | 0.1% to 10% |
| | | Total Sulphur (as SO ₃) | IS 1727 | 0.1% to 10% |
| | | Total loss on ignition | IS 1727 | 0.1% to 10% |
| | | Chloride | IS 4032 | 0.005% to 1% |
| | | Lime (CaO) | IS 1727 | 0.5 % to 20% |
| 3. | Micro Silica/Silica Fume | Loss on Ignition | IS 1727 IS 15388 | 0.1% to 30% |
| | | Silica Content (SiO ₂) | IS 1727 IS 15388 | 20% to 96% |
| | | Moisture Content | IS 1727 IS 15388 | 20% to 96% |
| 4. | Concrete Admixture | Ash Content | IS 9103 | 1% to 20% |
| | | Relative Density | IS 9103 | 1 to 1.5 |
| | | DMC | IS 9103 | 10% to 50% |
| | | pH | IS 9103 | 2 to 14 |
| | | Chloride Content | IS 6925 | 0.001% to 1% |
| 5. | Water Proofing Compound | Sulphate | IS 2645 | 0.005% to 1% |
| | | Chloride Content | IS 2645 | 0.005% to 3% |
| 6. | Clay & Soil | Sulphate | IS 2720(Part 27) | 0.1% to 2% |
| | | pH | IS 2720(Part 26) | 2 to 14 |
| 7. | Concrete/ CC Core/Cube | Chloride | BS 812(Part 117) IS 14959 | 0.005% to 1% |
| | | Sulphate | BS 812(Part 118) IS 2317 | 0.01% to 1% |
| | | Ratio Analysis | ASTM C 1084 | Qualitative |
| 8. | Aggregate Coarse /Fine | Rapid Chloride Ion Penetration | ASTM C1202 | 2 Coulombs to 2000 Coulombs |
| | | Chloride | BS 812(Part 117) IS 14959 | 0.005% to 1% |

Ram Ashray
Convenor

Battal Singh
Program Manager

Laboratory Anshutech Labs (P) Ltd., RZ-24, Plot No.-323, Gali No.-3, Dabri Village, New Delhi

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6886

Page 3 of 7

Validity 07.02.2018 to 06.02.2020

Last Amended on 06.09.2019

| Sl. | Product / Material of Test | Specific Test Performed | Test Method Specification against which tests are performed | Range of Testing / Limits of Detection |
|-----|----------------------------|-------------------------|---|--|
| | | Sulphate | BS 812(Part 118) IS 2317 | 0.01% to 1% |
| | | Organic Impurities | IS 2386(Part 2) | Qualitative |

Ram Ashray
Convenor

Battal Singh
Program Manager

Laboratory **Anshutech Labs (P) Ltd., RZ-24, Plot No.-323, Gali No.-3, Dabri Village, New Delhi**

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

Certificate Number **TC-6886**

Page 4 of 7

Validity **07.02.2018 to 06.02.2020**

Last Amended on **06.09.2019**

| 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 MATERIAL | | | |
|----------------------|--------------------------|----------------------------|------------------------------|---------------------|
| 1. | Coarse Aggregate | Sieve analysis | IS 2386(Part I) | 4.75 mm to 80 mm |
| | | Flakiness Index | IS 2386(Part I) | 5% to 70% |
| | | Elongation | IS 2386(Part III) | 5% to 70% |
| | | Water Absorption | IS 2386(Part IV) | 0.1% to 5% |
| | | Specific Gravity | IS 2386(Part III) | 2 to 4 |
| | | Crushing Value | IS 2386(Part I) | 5% to 50% |
| | | Bulk Density – Loose | IS 2386(Part III) | 1 kg/l to 3 kg/l |
| | | Bulk Density – Rodded | IS 2386(Part III) | 1 kg/l to 3 kg/l |
| | | Impact Value | IS 2386(Part IV) | 8% to 50% |
| | | Los Angles Abrasion Value | IS 2386(Part IV) | 8% to 50% |
| | | 10% Fine Value | IS 2386(Part IV) | 5 tones to 30 tones |
| | | Total Deleterious Material | IS 2386(Part I & II) | 0.1% to 20% |
| | | Soundness | IS 2386(Part V) | 0.1% to 20% |
| | | Moisture Content | IS 2386(Part III) | 0.1% to 10% |
| 2. | Fine aggregate | Sieve analysis | IS 2386(Part I) | 0.15 mm to 10 mm |
| | | Deleterious Material | IS 2386(Part I & II) | 0.1% to 20% |
| | | Specific Gravity | IS 2386 (Part III) | 2 to 4 |
| | | Water Absorption | IS 2386(Part IV) | 0.1% to 10% |
| | | Soundness | IS 2386(Part V) | 0.1% to 20% |
| | | Bulk Density – Loose | IS 2386(Part III) | 1 kg/l to 2.5 kg/l |
| | | Bulk Density – Rodded | IS 2386(Part III) | 1 kg/l to 2.5 kg/l |
| | | Bulking of Sand | IS 2386(Part III) | 1% to 35% |
| | | Silt Content | IS 2386(Part II) | 1% to 20% |
| | | 3. | Cement (OPC/PPC/ PSC) | Consistency |
| Initial Setting Time | IS 4031(Part 5) | | | 30 to 300 Minutes |
| Final Setting Time | IS 4031(Part 5) | | | 30 to 600 Minutes |

Ram Ashray
Convenor

Battal Singh
Program Manager

Laboratory **Anshutech Labs (P) Ltd., RZ-24, Plot No.-323, Gali No.-3, Dabri Village, New Delhi**

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

Certificate Number **TC-6886**

Page 5 of 7

Validity **07.02.2018 to 06.02.2020**

Last Amended on **06.09.2019**

| Sl. | Product / Material of Test | Specific Test Performed | Test Method Specification against which tests are performed | Range of Testing / Limits of Detection |
|-----|---|---------------------------------------|---|--|
| | | Compressive Strength | IS 4031(Part 6) | 10 N/mm ² to 75 N/mm ² |
| | | Soundness (Le-Chatelier) | IS 4031(Part 3) | 0.5 mm to 10 mm |
| | | Soundness (Autoclave) | IS 4031(Part 3) | 0.01% to 0.8% |
| | | Fineness by Blaine's Air | IS 4031(Part 2) | 100 m ² /kg to 600 m ² /kg |
| | | Density | IS 4031(Part 11) | 1.5 g/cm ³ to 3.8 g/cm ³ |
| 4. | Pozzolana Material (Fly Ash) | Density | IS 1727 | 1 g/cm ³ to 3.5 g/cm ³ |
| | | Fineness by Blaine's air Permeability | IS 1727 | 100 m ² /g to 700 m ² /g |
| | | Fineness by 45µm sieve | IS 1727 | 0.5% to 100% |
| | | Compressive Strength | IS 1727 | 3 N/mm ² to 54 N/mm ² |
| | | Soundness by Autoclave | IS 1727 | 0.01% to 0.8% |
| 5. | Micro Silica/ Silica Fume | Compressive Strength | IS 1727 BS 3892 ASTM C 311 | 5 N/mm ² to 100 N/mm ² |
| | | Retained on 45 µm | IS 1727 ASTM C 1240 | 0.1% to 80% |
| 6. | Burnt Clay Bricks/Fly Ash Bricks | Compressive Strength | IS 3495(Part 1) | 2 N/mm ² to 50 N/mm ² |
| | | Water Absorption | IS 3495(Part 2) | 0.1% to 50% |
| | | Efflorescence | IS 3495(Part 3) | Qualitative |
| | | Dimension: Length | IS 1077 | 4000 mm to 5000 mm |
| | | Dimension: Width | | 2100 mm to 2400 mm |
| | | Dimension: Height | | 1300 mm to 1600 mm |
| 7. | Bentonite | Moisture | IS 6186 | 0.1% to 50% |
| | | Sand Content | IS 6186 | 0.1% to 20% |
| | | Free Swelling Index | IS 2720(Part 40) | 50% to 800% |
| | | Marsh Funnel Viscosity | ASTM D 6910 | 20 s to 100 s |
| | | Density | IS 6186 | 1 to 2 |
| | | Liquid Limit | IS 2720(Part V) | 200% to 600% |
| 8. | Timber | Moisture Content | IS 1708(Part 1) | 1% to 80% |
| | | Density | IS 1708(Part 2) | 25 kg/m ³ to 1000 kg/m ³ |
| 9. | Water Proofing Compound | Initial Setting Time | IS 4031(Part 5) | 10 minutes to 600 minutes |

Ram Ashray
Convenor

Battal Singh
Program Manager

Laboratory **Anshutech Labs (P) Ltd., RZ-24, Plot No.-323, Gali No.-3, Dabri Village, New Delhi**

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

Certificate Number **TC-6886**

Page 6 of 7

Validity **07.02.2018 to 06.02.2020**

Last Amended on **06.09.2019**

| Sl. | Product / Material of Test | Specific Test Performed | Test Method Specification against which tests are performed | Range of Testing / Limits of Detection |
|------------|--|-------------------------|---|---|
| | | Final Setting Time | IS 4031(Part 5) | 10 minutes to 600 minutes |
| 9. | Precast Paving Block | Compressive Strength | IS 2645 | 5 N/mm ² to 100 N/mm ² |
| | | Compressive Strength | IS 15658 | 10 N/mm ² to 70 N/mm ² |
| | | Water Absorption | IS 15658 | 0.1% to 20% |
| 10. | Building Stone/ Granite/ Marble | Compressive Strength | IS 1121(Part 1) | 10 N/mm ² to 150 N/mm ² |
| | | Specific Gravity | IS 1122(Part 1) | 1.0 to 3.5 |
| | | Water Absorption | IS 1124 | 0.1% to 10% |
| 11. | Hardened Concrete /CC Core/Cube | Compressive Strength | IS 516 | 10 N/mm ² to 80 N/mm ² |
| | | Water Permeability | DIN 1048-5 | 0.5 mm to 150 mm |
| | | Split Tensile Strength | IS 5816 | 0.5 N/mm ² to 40 N/mm ² |
| II. | MECHANICAL PROPERTIES OF METALS | | | |
| 1. | Metal & Ferrous Alloy | Mass per meter | IS 1786 | 0.01 kg/m to 8 kg/m |
| | | Tensile Strength | IS 1608 | 100 N/mm ² to 700 N/mm ² |
| | | Elongation | IS 1608 | 2% to 50% |
| | | Yield Stress | IS 1608 | 100 N/mm ² to 700 N/mm ² |
| | | Bend | IS 1599 | Qualitative (Mandrel Diameter 32, 40, 48, 64, 80, 125, 140, 160 mm) |
| | | Re-bend | IS 1786 | Qualitative (Mandrel Diameter 48, 60, 96, 128, 160, 200, 224, 250 mm) |
| | | Rockwell Hardness | IS 1586 | 20 HRB to 100 HRB 20 HRC to 70 HRC |

Ram Ashray
Convenor

Battal Singh
Program Manager

Laboratory Anshutech Labs (P) Ltd., RZ-24, Plot No.-323, Gali No.-3, Dabri Village,
New Delhi

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6886

Page 7 of 7

Validity 07.02.2018 to 06.02.2020

Last Amended on 06.09.2019

| Sl. | Product / Material of Test | Specific Test Performed | Test Method Specification against which tests are performed | Range of Testing / Limits of Detection |
|------|----------------------------|--|---|---|
| III. | SOIL & ROCK | | | |
| 1. | Soil | Light Compaction Maximum Dry Density Optimum Moisture Content | IS 2720(Part VII) | 1 g/cm ³ to 3 g/ cm ³ 1% to 40% |
| | | Heavy Compaction Maximum Dry Density Optimum Moisture Content | IS 2720(Part VIII) | 1 g/ cm ³ to 3 g/ cm ³ 1% to 40% |
| | | Plastic Limit | IS 2720(Part V) | upto 30% |
| | | Liquid Limit | IS 2720(Part V) | 1% to 50% |
| | | Free Swelling Index | IS 2720(Part I) | 10% to 80% |

Ram Ashray
Convenor

Battal Singh
Program Manager