Accreditation Standard ISO/IEC 17025: 2005

Discipline **Chemical Testing** Issue Date 14.11.2014

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| S.N | o. Product / Material of Test | Specific Test Performed | Test Method Specification against which tests are performed | Range of Testing / Limits of Detection |
|-----|----------------------------------|-----------------------------|--|---|
| I. | BUILDING MATERI | ALS | | |
| 1. | Cement | Loss on ignition | IS 4032 : 1985 (RA 2009) | 0.1 % to 12 % |
| | | Magnesium oxide | IS 4032 : 1985 (RA 2009) | 0.1 % to 10 % |
| | | Sulphuric Anhydride | IS 4032 : 1985 (RA 2009) | 0.1 % to 5 % |
| | | Insoluble Residue | IS 4032 : 1985 (RA 2009) | 0.01 % to 45 % |
| | | Silicon dioxide | IS 4032 : 1985 (RA 2009) | 16 % to 26 % |
| | | Aluminum oxide | IS 4032 : 1985 (RA 2009) | 0.2 % to 10 % |
| | | Iron oxide | IS 4032 : 1985 (RA 2009) | 1 % to 10 % |
| | | Calcium oxide | IS 4032 : 1985 (RA 2009) | 55 % to 70 % |
| | | Lime saturation factor | IS 8112 : 1989 (RA 2009) IS 12269 : 1987 (RA 2008) IS 269 : 1989 (RA 2008) | 0.66 to 1.02 |
| | | Alumina to Iron oxide Ratio | IS 8112 : 1989 (RA 2009) IS 12269 : 1987 (RA 2008) | 0.5 to 1.5 |
| | | Sulphide Sulphur | IS 4032 : 1985 (RA 2009) | 0.1 % to 3.0 % |
| | | Chlorides | IS 4032 : 1985 (RA 2009) (Amendment No. 2) | 0.001 % to 1.0 % |

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|-------|------------------------------------|---|---|---|
| 2. | Glazed Stoneware Pipes | Alkali Resistance | IS 651 : 2007 | Qualitative |
| | T PCS | Acid Resistance | IS 651: 2007 | 0.01 % to 50 % |
| 3. | Glazed/Ceramic/ Vitrified Tiles | Resistance to staining. | IS 13630 (Part 8): 2006 ISO 10545 (Part 14): 1995 | Qualitative |
| | | Resistance to household chemicals/Swimming pool salts | IS 13630 (Part 7& 8): 2006 ISO 10545 (Part 13): 1995 | Qualitative |
| | | Resistance to acids and alkalis | IS 13630 (Part 7& 8): 2006 ISO 10545 (Part 13): 1995 | Qualitative |
| 4. | Soil | pH Value | IS 2720 (Part 26): 1987 (RA 2007) | 1 to 13 |
| 5. | Concrete Admixture | Dry material content in liquid admixture | IS 9103 : 1999 | 0.5 % to 40 % |
| | | Ash content | IS 9103 : 1999 | 0.1 % to 20 % |
| | | Relative density | IS 9103 : 1999 | 0.9 to 1.40 |
| | | Chloride content | IS 6925 : 1973 (Turbidimetric method) | 0.01 % to 1 % |
| | | pH | IS 9103 : 1999 | 1 to 13 |

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|------|----------------------------------|--|---|---|
| II. | WATER | | | |
| 1. | 1. Construction Water | Acidity (Neutralisation value using Phenolphthalein indicator) | IS 3025 (Part 22): 1986 (Clause 8.1) | (0.1 to 10) ml/100 ml |
| | | Alkalinity (Neutralisation value using mixed indicator) | IS 3025 (Part 23): 1986 (Clause 8.0) | (0.1 to 50) ml/100 ml |
| | | Organic matter Volatile residue | IS 3025 (Part 18): 1984 | 10 mg/L to 500 mg/L |
| | | Inorganic matter Fixed residue | IS 3025 (Part 18): 1984 | 10 mg/L to 5000 mg/L |
| | | Sulphate | IS 3025 (Part 24): 1986 (Gravimetric method) | 10 mg/L to 1000 mg/L |
| | | Chlorides | IS 3025 (Part 32): 1988 (Argentometric method) | 10 mg/L to 3000 mg/L |
| | | Suspended matter | IS 3025 (Part 17): 1984 (Gravimetric method) | 10 mg/L to 3000 mg/L |
| | | pН | IS 3025 (Part 11): 1983 | 1 to 13 |

| Laboratory | Material Testing House (India) Limited, 50-96-4, North Extension, |
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| Laboratory | material resting risass (maia) Emiliou, ob so 4, North Extension, |

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| o. Product / Material of Test | Specific Test Performed | Test Method Specification against which tests are performed | Range of Testing / Limits of Detection |
|------------------------------------|--|---|---|
| METALLIC COAT | INGS AND TREATMENT SOI | LUTIONS | |
| Galvanised iron and steel | Mass of Zinc coating | IS 6745 : 1972 | $10 \text{ g/m}^2 \text{ to } 2000 \text{ g/m}^2$ |
| | Adhesion test | IS 2629: 1985 (Clause 6.4) | Qualitative |
| | Uniformity of coating | IS 2633 : 1986 | Qualitative |
| METALS AND ALL | LOYS | | |
| Plain Carbon steels | Carbon | IS 228 (Part 1): 1987 | 0.05 % to 2.5 % |
| | Manganese | IS 228 (Part 2): 1987 | 0.1 % to 1.5 % |
| | Phosphorous | IS 228 (Part 3): 1987 | 0.01 % to 0.15 % |
| | Silicon | IS 228 (Part 8): 1989 | 0.05 % to 5.0 % |
| | Sulphur | IS 228 (Part 9): 1989 | 0.01 % to 0.15 % |
| Plain Carbon & Low alloy Steels | Carbon | IS 8811 : 1998 | 0.01 % to 2.0 % |
| | Silicon | IS 8811 : 1998 | 0.05 % to 2.0 % |
| | Manganese | IS 8811 : 1998 | 0.01 % to 2.0 % |
| | Phosphorus | IS 8811 : 1998 | 0.005 % to 0.1 % |
| | Sulphur | IS 8811 : 1998 | 0.005 % to 0.1 % |
| | Chromium | IS 8811 : 1998 | 0.05 % to 5.0 % |
| | METALLIC COATE Galvanised iron and steel METALS AND ALI Plain Carbon steels Plain Carbon & | METALLIC COATINGS AND TREATMENT SOIL Galvanised iron and steel Mass of Zinc coating Adhesion test Uniformity of coating METALS AND ALLOYS Plain Carbon steels Carbon Manganese Phosphorous Silicon Sulphur Plain Carbon & Carbon Low alloy Steels Silicon Manganese Phosphorus Silicon Sulphur Sulphur Sulphur | Material of Test against which tests are performed METALLIC COATINGS AND TREATMENT SOLUTIONS Galvanised iron and steel Mass of Zinc coating IS 2629: 1985 (Clause 6.4) Adhesion test IS 2629: 1985 (Clause 6.4) Uniformity of coating IS 2633: 1986 METALS AND ALL-VYS Plain Carbon steels Carbon IS 228 (Part 1): 1987 Manganese IS 228 (Part 2): 1987 Phosphorous IS 228 (Part 3): 1987 Silicon IS 228 (Part 9): 1989 Plain Carbon & Low alloy Steels Carbon IS 8811: 1998 Manganese IS 8811: 1998 Phosphorus IS 8811: 1998 Sulphur IS 8811: 1998 |

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|-------------------------------------|-------------------------|---|---|
| Plain Carbon & | Molybdenum | IS 8811 : 1998 | 0.01 % to 1.5 % |
| Low alloy Steels | Nickel | IS 8811 : 1998 | 0.05 % to 5.0 % |
| | Aluminum | IS 8811 : 1998 | 0.005 % to 0.15 % |
| | Copper | IS 8811 : 1998 | 0.01 % to 0.5 % |
| | Vanadium | IS 8811 : 1998 | 0.01 % to 1.0 % |
| | Cobalt | IS 8811 : 1998 | 0.01 % to 0.2 % |
| | Arsenic | IS 8811 : 1998 | 0.005 % to 0.05 % |