

Laboratory JK Lakshmi Cement Ltd., Surat Grinding Unit, Kadodara Bardoli Highway, Village-Dastan, Tal. Palsana, Surat, Gujarat

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-8013

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Validity 23.10.2018 to 22.10.2020

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 |
|-----|----------------------------|-------------------------|---|--|
|-----|----------------------------|-------------------------|---|--|

**CHEMICAL TESTING**

| I. | BUILDING MATERIAL  |   |                        |                  |
|----|--------------------|---|------------------------|------------------|
| 1. | Cement (OPC & PPC) | Loss on Ignition (LOI)                            | IS 4032:1985 (RA 2014) | 0.1 % to 10.0 %  |
|    |                    | Silicon Dioxide (SiO <sub>2</sub> )               | IS 4032:1985 (RA 2014) | 15.0 % to 40.0 % |
|    |                    | Calcium Oxide (CaO)                               | IS 4032:1985 (RA 2014) | 30.0 % to 70.0 % |
|    |                    | Magnesium Oxide (MgO)                             | IS 4032:1985 (RA 2014) | 1.0 % to 5.0 %   |
|    |                    | Iron Oxide (Fe <sub>2</sub> O <sub>3</sub> )      | IS 4032:1985 (RA 2014) | 2.0 % to 10.0 %  |
|    |                    | Aluminium Oxide (Al <sub>2</sub> O <sub>3</sub> ) | IS 4032:1985 (RA 2014) | 3.0 % to 15.0 %  |
|    |                    | Insoluble Residue (IR)                            | IS 4032:1985 (RA 2014) | 0.1 % to 45.0 %  |
|    |                    | Sulphur Anhydride (SO <sub>3</sub> )              | IS 4032:1985 (RA 2014) | 1.0 % to 10.0 %  |

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**MECHANICAL TESTING**

| I. | <b>BUILDING MATERIALS</b> |                                       |                                   |  |
|----|---------------------------|---------------------------------------|-----------------------------------|--|
| 1. | <b>Cement</b>             | Fineness by air permeability (Blaine) | IS 4031 (Part 2): 1999 (RA 2017)  | 150 m <sup>2</sup> /kg to 500 m <sup>2</sup> /kg |
|    |                           | Soundness by Le Chatelier Test        | IS 4031 (Part 3): 1988 (RA 2013)  | 0.5 mm to 10 mm                                  |
|    |                           | Soundness by Autoclave Test           | IS 4031 (Part 3): 1988 (RA 2013)  | 0.01 % to 0.8 %                                  |
|    |                           | Normal Consistency                    | IS 4031 (Part 4): 1988 (RA 2013)  | 22 % to 45 %                                     |
|    |                           | <b>Setting Time:</b>                  |                                   |  |
|    |                           | Initial Setting Time                  | IS 4031 (Part 5): 1988 (RA 2013)  | 30 min. to 300 min.                              |
|    |                           | Final Setting Time                    | IS 4031 (Part 5): 1988 (RA 2013)  | 30 min. to 600 min.                              |
|    |                           | <b>Compressive Strength:</b>          |                                   |  |
|    |                           | 3 Days                                | IS 4031 (Part 6): 1988 (RA 2013)  | 10 MPa to 80 MPa                                 |
|    |                           | 7 Days                                |                                   | 10 MPa to 80 MPa                                 |
|    |                           | 28 Days                               |                                   | 10 MPa to 80 MPa                                 |
|    |                           | Drying Shrinkage                      | IS 4031 (Part 10): 1988 (RA 2013) | 0.01 % to 0.15 %                                 |