



| REPORT NO. 12121       |   |                                 | ULR NO.                        |              |
|------------------------|---|---------------------------------|--------------------------------|--------------|
| Issued To              | : | hii                             | Date of Receipt                | : 12-11-2025 |
|                        |   |                                 | Date of start of analysis      | : 12-11-2025 |
| Letter REF. NO. & Date | : | 45745475 & 2025-11-18           | Date of completion of analysis | : 12-11-2025 |
| Sample Description     | : | Cement, OPC-43, Make- Ultratech | Date of issue                  | : 12-11-2025 |
| Name of work           | : | Avinash Kumar Jha               |                                |              |

| S.No.  | Tests  | Test Methods       | Requirements as per IS 269:2015 With Amendment No. 1 | Results | Conformity |
|--|--|--------------------|--|---------|------------|
| Discipline : Mechanical, Group : Buildings Materials |  |                    |  |         |            |
| Physical Requirements                                |  |                    |  |         |            |
| 1.   | Consistency, %   | IS 4031(P-4):1988  | -  |         |            |
| 2.   | Density, g/cc  | IS 4031(P-11):1988 | -  |         |            |
| 3.   | Fineness, m <sup>2</sup> / kg  | IS 4031(P-2):1999  | 225 Min.   |         |            |
| 4.   | Initial Setting Time, Minutes  | IS 4031(P-5):1988  | 30 Min.  |         |            |
| 5.   | Final Setting Time, Minutes  | IS 4031(P-5):1988  | 600 Max.   |         |            |
| 6.   | Soundness By Le-Chatelier Method, mm   | IS 4031(P-3):1988  | 10 Max.  |         |            |
| 7.   | Soundness By Autoclave Test Method, %  | IS 4031(P-3):1988  | 0.8 Max.   |         |            |
| 8.   | Compressive Strength at 3 Days (72±1 Hours), MPa   | IS:4031(P-6):1988  | 23 Min.  |         |            |
| 9.   | Compressive Strength at 7 Days (168±2 Hours), MPa  | IS 4031(P-6):1988  | 33 Min.  |         |            |
| 10.  | Compressive Strength at 28 Days (672±4 Hours), MPa   | IS 4031(P-6):1988  | 43 - 58  |         |            |
| Discipline : Chemical, Group : Building Material     |  |                    |  |         |            |
| Chemical Requirements                                |  |                    |  |         |            |
| 1.   | Ratio of % of lime to % of SiO <sub>2</sub> , Al <sub>2</sub> O <sub>3</sub> & Fe <sub>2</sub> O <sub>3</sub> as per formula<br>( $\frac{\text{CaO}}{2.8\text{SiO}_2 + 1.2\text{Al}_2\text{O}_3 + 0.65\text{Fe}_2\text{O}_3} - 0.7\text{SO}_3$ ) | IS 4032:1985       | 0.66 -1.02   |         |            |



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|    |  |              |  |  |  |
|----|--|--------------|--|--|--|
| 2. | Ratio of % of Alumina to that of Iron oxide  | IS 4032:1985 | 0.66 Min.  |  |  |
| 3. | Insoluble Residue, % by mass   | IS 4032:1985 | 5.0 Max.   |  |  |
| 4. | Magnesia as MgO, % by mass   | IS 4032:1985 | 6.0 Max.   |  |  |
| 5. | Total Sulphur Content Calculated as Sulphuric Anhydride (SO <sub>3</sub> ), % by mass          | IS 4032:1985 | 3.5 Max.   |  |  |
| 6. | Loss on Ignition. % by mass  | IS 4032:1985 | 5.0 Max.   |  |  |
| 7. | Chloride Content, % by mass  | IS 4032:1985 | 0.1 Max.<br>0.05 Max. (For Prestressed Structures) |  |  |
| 8. | Alkali Content expressed as Sodium Oxide (Na <sub>2</sub> O+0.658 K <sub>2</sub> O), % by mass | IS 4032:1985 | 0.6 Max.   |  |  |

Analyst