



**WORK TEST CERTIFICATE**

**53 Grade Ordinary Portland Cement**

Despatched during Week No.	14	From	2-Apr-2022	To	8-Apr-2022
Test Certificate No.	14	Reference No.		WCW/IMS/QA/FM/17	
Dated	7-May-2022				

S.N.	Parameters	Results Obtained	Requirement as per IS 269 : 2015 (Variety: OPC 53)
<b>Chemical Composition</b>			
1	Lime Saturation Factor ( $\text{CaO} - 0.7 * \text{SO}_3$ ) / ( $2.8 * \text{SiO}_2 + 1.2 * \text{Al}_2\text{O}_3 + 0.65 * \text{Fe}_2\text{O}_3$ )	0.91	Not greater than 1.02 and not less than 0.80
	Ratio of % Alumina to that of Iron Oxide $\text{Al}_2\text{O}_3 / \text{Fe}_2\text{O}_3$	1.27	Not less than 0.66
	Insoluble Residue (% by mass)	0.93	Not more than 5.0 %
	Magnesia (% by mass)	0.91	Not more than 6.0 %
	Sulphuric Anhydride (% by mass)	2.93	Not More than 3.5 %
	Total loss on Ignition (%)	1.99	Not More than 4.0 %
	Chloride Content (%)	0.010	Not more than 0.1 % for general purpose & not more than 0.05 % for pre-stressed structures
	<b>Physical Analysis</b>		
2	<b>Fineness</b>		
	Blaine's Specific Surface Area (m <sup>2</sup> / kg)	308	Not Less than 225
3	<b>Compressive Strength (MPa)</b>		
	72 ± 1h (3 Days)	36.6	Not less than 27.0
	168 ± 2h (7 Days)	46.9	Not less than 37.0
	672 ± 4h (28 Days) *	58.6	Not less than 53.0
4	<b>Setting Time (Minutes)</b>		
	Initial	120	Not less than 30
	Final	180	Not more than 600
5	<b>Soundness</b>		
	Le-Chatelier Expansion (mm)	2.00	Not more than 10.0
	Auto-Clave Expansion (%)	0.060	Not more than 0.8
6	Normal Consistency (%)	27.75	
	Temp. During Testing (0C)	27.00	(27 ± 2)0C

The above cement complies with the requirements of IS 269 : 2015 (Variety: OPC 53) for 53 Grade Ordinary Portland Cement

Manager (QA)

DGM QC