



**WORK TEST CERTIFICATE**

**53 Grade Ordinary Portland Cement**

Despatched during Week No.	35	From	27-Aug-2019	To	2-Sep-2019
Test Certificate No.	35	Reference No.		WCW/IMS/QA/FM/08	
Dated	9/10/2019				

S.N.	Parameters	Results Obtained	Requirement as per IS 269 : 2015 (Variety: OPC 53)
<b>Chemical Composition</b>			
1	Lime Saturation Factor ( CaO – 0.7 *SO3) / (2.8* SiO2 + 1.2* Al2O3 + 0.65* Fe2O3)	0.90	Not greater than 1.02 and not less than 0.80
	Ratio of % Alumina to that of Iron Oxide Al2O3 / Fe2O3	1.26	Not less than 0.66
	Insoluble Residue (% by mass)	0.50	Not more than 5.0 %
	Magnesia (% by mass)	0.90	Not more than 6.0 %
	Sulphuric Anhydride (% by mass)	3.00	Not More than 3.5 %
	Total loss on Ignition (%)	1.60	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 (m2 / kg)	306	Not Less than 225
3	<b>Compressive Strength (MPa)</b>		
	72 ± 1h (3 Days)	36.5	Not less than 27.0
	168 ± 2h (7 Days)	46.8	Not less than 37.0
	672 ± 4h (28 Days) *	Awaited	Not less than 53.0
4	<b>Setting Time (Minutes)</b>		
	Initial	130	Not less than 30
	Final	195	Not more than 600
5	<b>Soundness</b>		
	Le-Chatelier Expansion (mm)	1.00	Not more than 10.0
	Auto-Clave Expansion (%)	0.060	Not more than 0.8
6	Normal Consistency (%)	27.50	
	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)