



**WORK TEST CERTIFICATE**

**53 Grade Ordinary Portland Cement**

Despatched during Week No.	29	From	16-Jul-2019	To	22-Jul-2019
Test Certificate No.	29	Reference No.		WCW/IMS/QA/FM/08	
Dated	8/20/2019				
S.N.	Parameters	Results Obtained	Requirement as per IS 269 : 2015 (Variety: OPC 53)		
1	<b>Chemical Composition</b>				
	Lime Saturation Factor ( CaO – 0.7 *SO <sub>3</sub> ) / (2.8* SiO <sub>2</sub> + 1.2* Al <sub>2</sub> O <sub>3</sub> + 0.65* Fe <sub>2</sub> O <sub>3</sub> )	0.88	Not greater than 1.02 and not less than 0.80		
	Ratio of % Alumina to that of Iron Oxide Al <sub>2</sub> O <sub>3</sub> / Fe <sub>2</sub> O <sub>3</sub>	1.22	Not less than 0.66		
	Insoluble Residue (% by mass)	0.54	Not more than 5.0 %		
	Magnesia (% by mass)	0.96	Not more than 6.0 %		
	Sulphuric Anhydride (% by mass)	3.01	Not More than 3.5 %		
	Total loss on Ignition (%)	1.59	Not More than 4.0 %		
	Chloride Content (%)	0.013	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)	300	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)	47.5	Not less than 37.0		
	672 ± 4h (28 Days) *	59.5	Not less than 53.0		
4	<b>Setting Time (Minutes)</b>				
	Initial	132	Not less than 30		
	Final	192	Not more than 600		
5	<b>Soundness</b>				
	Le-Chatelier Expansion (mm)	1.07	Not more than 10.0		
	Auto-Clave Expansion (%)	0.077	Not more than 0.8		
6	Normal Consistency (%)	27.80			
	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)