

## JSW OPC Cement : 53 GRADE

**START STRONG.GROW STRONGER.**

### TEST CERTIFICATE

Ordinary Portland Cement as per IS 269:2015

REF.: JSW/QA/2019 32

DATE : 10-09-2019

WEEK NO. : 32

06-08-2019 12-08-2019

CHARACTERISTIC	RESULTS OBTAINED	REQUIREMENT OF IS 269:2015
<b>(A) CHEMICAL COMPOSITION</b>		
(i) Lime Saturation Factor	0.85	0.80 to 1.02
(ii) Alumina Modulus, % by mass	1.95	0.66 Minimum
(iii) Insoluble residue (IR) % by mass	0.38	5.0 Maximum
(iv) Magnesia (MgO) % by mass	2.63	6.0 Maximum
(v) Sulphuric Anhydrite % by mass	2.58	3.5 Maximum
(vi) Loss on ignition (LOI), % by mass	2.71	4.0 Maximum
(vi) Chloride , % by mass	0.017	0.10 Maximum
<b>(B) PHYSICAL TESTING</b>		
<b>1. Fineness of Cement</b>		
Sp.Surface blaine (m <sup>2</sup> /kg)	328	225 minimum
<b>2. Soundness</b>		
Le-Chatelier Expansion (mm)	1.50	10 Maximum
Autoclave Expansion (%)	0.062	0.8 Maximum
<b>3. Setting Time</b>		
Initial (in Minutes)	170	30 Minimum
Final (in Minutes)	200	600 Maximum
<b>4. Compressive Strength (MPa)</b>		
(a) At 72 ± 1 Hrs.	40.17	27 MPa Minimum
(b) At 168 ± 2 Hrs.	46.98	37 MPa Minimum
(c) At 672 ± 4 Hrs.	55.62	53 MPa Minimum

**Remarks :**

- Temperature during testing - 27 ± 2° c.
- Ordinary Portland Cement conforms to the requirements of IS 269-2015 in all respects.

**Address:**

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Associated General Manager