



**Duraton**  
**CEMENT**

India's Most Advanced Cement

Vill. Rajgarh, Near Shambu Barrier, Rajpura, Punjab 140417

<b>Despatched during Week No.</b>		<b>04</b>	<b>From</b>	<b>21/01/2019</b>	<b>To</b>	<b>27/01/2019</b>
<b>Test Certificate No./ Dated</b>		<b>04/ 07<sup>th</sup> Feb. 2019</b>	<b>Reference No.</b>		<b>AFCL/P&amp;QC/TC/19/0004</b>	
S.N.	Parameters	Results Obtained	Requirement as per IS 1489 (Part I):2015			
1	<b>Chemical Composition (% by mass)</b>					
	Loss on Ignition	2.7	Not More than 5.0			
	Magnesia (MgO)	1.8	Not More than 6.0			
	Sulphuric Anhydride (SO <sub>3</sub> )	2.6	Not More than 3.5			
	Chloride Content	0.01	Not More than 0.1 (for general purpose) & not more than 0.05 for pre-stressed structures			
Insoluble Residue	27.8	Max. Insoluble Residue Not More than $[X + 4.0 (100-X) / 100]$ ,				
		Min. Insoluble Residue Not less than $(0.6 X)$ ,				
		Where "X" is the declared Pozzolana content in cement.				
<b>Physical Analysis</b>						
2	<b>Fineness (m<sup>2</sup>/kg)</b>					
	Blaine's Specific Surface Area	425	Not Less than 300			
3	<b>Compressive Strength (MPa)</b>					
	72 ± 1h (3 Days)	28.0	Not less than 16.0			
	168 ± 2h (7 Days)	34.0	Not less than 22.0			
	672 ± 4h (28 Days)	53.9	Not less than 33.0			
4	<b>Setting Time (Minutes)</b>					
	Initial	150	Not less than 30			
	Final	190	Not more than 600			
5	<b>Soundness</b>					
	Le-Chatelier Expansion (mm)	1.0	Not more than 10.0			
	Auto-Clave Expansion (%)	0.25	Not more than 0.8			
6	Drying Shrinkage (%)	0.017	Not More than 0.15			
7	<b>Normal Consistency (%)</b>					
	Temp. During Testing (°C)	27.0	$(27 \pm 2)^{\circ}C$			

* Declared Pozzolana (Fly-Ash) Content in Cement is (%)	30.0
* Compressive Strength (in MPa) of 28 Days & Drying Shrinkage (in %) values are of Week No	01 & 52 (2018) respectively

The above cement complies with the requirements of IS 1489 (Part I): 2015 for Portland Pozzolana Cement.

K.S. Birdi

**P&QC Manager**

*Sanjay*

**Plant Head**