



53 Grade Ordinary Portland Cement

Despatched during Week No.	2	From	08/01/19	To	14/01/19
Test Certificate No.	2	Reference No.		WCW/IMS/QA/FM/08	
Dated	22/01/19				

S.N.	Parameters	Results Obtained	Requirement as per IS 269 : 2015 (Variety: OPC 53)
Chemical Composition			
1	Lime Saturation Factor ($\text{CaO} - 0.7 * \text{SO}_3 / (2.8 * \text{SiO}_2 + 1.2 * \text{Al}_2\text{O}_3 + 0.65 * \text{Fe}_2\text{O}_3)$)	0.90	Not greater than 1.02 and not less than 0.80
	Ratio of % Alumina to that of Iron Oxide $\text{Al}_2\text{O}_3 / \text{Fe}_2\text{O}_3$	1.25	Not less than 0.66
	Insoluble Residue (% by mass)	0.50	Not more than 5.0 %
	Magnesia (% by mass)	1.00	Not more than 6.0 %
	Sulphuric Anhydride (% by mass)	2.90	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
Physical Analysis			
2	Fineness		
	Blaine's Specific Surface Area (m^2 / kg)	315	Not Less than 225
3	Compressive Strength (MPa)		
	72 ± 1h (3 Days)	37.6	Not less than 27.0
	168 ± 2h (7 Days)	47.4	Not less than 37.0
	672 ± 4h (28 Days) *	Awaited	Not less than 53.0
4	Setting Time (Minutes)		
	Initial	140	Not less than 30
	Final	205	Not more than 600
5	Soundness		
	Le-Chatelier Expansion (mm)	1.00	Not more than 10.0
	Auto-Clave Expansion (%)	0.010	Not more than 0.8
6	Normal Consistency (%)		
	Temp. During Testing ($^{\circ}\text{C}$)	27.00	$(27 \pm 2)^{\circ}\text{C}$

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

Manager (QA)



43 Grade Ordinary Portland Cement

Despatched during Week No.	2	From	08/01/19	To	14/01/19
Test Certificate No.	2	Reference No.			WCW/IMS/QA/FM/07
Dated	22/01/19				
S.N.	Parameters	Results Obtained	Requirement as per IS 269 : 2015 (Variety: OPC 43)		
Chemical Composition					
1	Lime Saturation Factor ($\text{CaO} - 0.7 * \text{SO}_3 / (2.8 * \text{SiO}_2 + 1.2 * \text{Al}_2\text{O}_3 + 0.65 * \text{Fe}_2\text{O}_3)$)	0.90	Not greater than 1.02 and not less than 0.66		
	Ratio of % Alumina to that of Iron Oxide $\text{Al}_2\text{O}_3 / \text{Fe}_2\text{O}_3$	1.26	Not less than 0.66		
	Insoluble Residue (% by mass)	0.60	Not more than 5.0 %		
	Magnesia (% by mass)	1.00	Not more than 6.0 %		
	Sulphuric Anhydride (% by mass)	2.70	Not More than 3.5 %		
	Total loss on Ignition (%)	1.80	Not More than 5.0 %		
	Chloride Content (%)	0.010	Not more than 0.1 % for general purpose & not more than 0.05 % for pre-stressed structures		
Physical Analysis					
2	Fineness				
	Blaine's Specific Surface Area (m^2 / kg)	287	Not Less than 225		
3	Compressive Strength (MPa)				
	$72 \pm 1\text{h}$ (3 Days)	30.6	Not less than 23.0		
	$168 \pm 2\text{h}$ (7 Days)	40.3	Not less than 33.0		
	$672 \pm 4\text{h}$ (28 Days) *	Awaited	Not less than 43.0 & not more than 58.0		
4	Setting Time (Minutes)				
	Initial	130	Not less than 30		
	Final	185	Not more than 600		
5	Soundness				
	Le-Chatelier Expansion (mm)	1.00	Not more than 10.0		
	Auto-Clave Expansion (%)	0.080	Not more than 0.8		
6	Normal Consistency (%)	27.25			
	Temp. During Testing ($^{\circ}\text{C}$)	27.00	$(27 \pm 2)^{\circ}\text{C}$		

The above cement complies with the requirements of IS 269 : 2015 (Variety: OPC 43) for 43 Grade Ordinary Portland Cement

Manager (QA)

IS 1489 (Part-1): 2015



CM/L 1209132

ACC

ACC Limited
Wadi Cement Works

WORK TEST CERTIFICATE

IS / ISO 9001



ACC SURAKSHA

Despatched during Week No.	2	From	08/01/19	To	14/01/19
Test Certificate No.	2	Reference No.		WCW/IMS/QA/FM/09	
Dated	22/01/19				

S.N.	Parameters	Results Obtained	Requirement as per IS 1489 (Part I) : 2015
Chemical Composition			
1	Loss on Ignition (% by mass)	2.00	Not More than 5.0 %
	Magnesia (% by mass)	1.00	Not more than 6.0 %
	Sulphuric Anhydride SO ₃ (% by mass)	2.60	Not More than 3.5 %
	Chloride Content (% by mass)	0.01	Not more than 0.1 % for general purpose & not more than 0.05 % for pre-stressed structures
	Insoluble Residue (% by mass)	27.80	Not More than $[X + 4.0 (100-X) / 100]$ & less than (0.6 X), Where "X" is the declared Pozzolana content in cement
Physical Analysis			
2	Fineness		
	Blaine's Specific Surface Area (m ² / kg)	337	Not Less than 300
3	Compressive Strength (MPa)		
	72 ± 1h (3 Days)	27.3	Not less than 16.0
	168 ± 2h (7 Days)	36.7	Not less than 22.0
	672 ± 4h (28 Days) *	Awaited	Not less than 33.0
4	Setting Time (Minutes)		
	Initial	155	Not less than 30
	Final	235	Not more than 600
5	Soundness		
	Le-Chatelier Expansion (mm)	1.00	Not more than 10.0
	Auto-Clave Expansion (%)	0.030	Not more than 0.8
6	Drying Shrinkage (%)*	Awaited	Not more than 0.15
7	Normal Consistency (%)	30.50	
	Temp. During Testing (°C)	27.00	(27 ± 2) ^o C

* Fly Ash Content in Cement is (%)	34.00
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The above cement complies with the requirements of IS 1489 (Part I): 2015 for Portland Pozzolana Cement.

Manager (QA)

IS 1489 (Part-1): 2015



CM/L 1209132

ACC

ACC Limited
Wadi Cement Works

WORK TEST CERTIFICATE

IS / ISO 9001



ACC CONCRETE+

Despatched during Week No.	2	From	08/01/19	To	14/01/19
Test Certificate No.	2	Reference No.		WCW/IMS/QA/FM/09	
Dated	22/01/19				

S.N.	Parameters	Results Obtained	Requirement as per IS 1489 (Part I) : 2015
Chemical Composition			
1	Loss on Ignition (% by mass)	2.00	Not More than 5.0 %
	Magnesia (% by mass)	1.00	Not more than 6.0 %
	Sulphuric Anhydride SO ₃ (% by mass)	2.80	Not More than 3.5 %
	Chloride Content (% by mass)	0.01	Not more than 0.1 % for general purpose & not more than 0.05 % for pre-stressed structures
	Insoluble Residue (% by mass)	21.80	Not More than $[X + 4.0 (100-X) / 100]$ & Not less than $(0.6 X)$, Where "X" is the declared Pozzolana content in cement
Physical Analysis			
2	Fineness		
	Blaine's Specific Surface Area (m ² / kg)	358	Not Less than 300
3	Compressive Strength (MPa)		
	72 ± 1h (3 Days)	32.80	Not less than 16.0
	168 ± 2h (7 Days)	42.40	Not less than 22.0
	672 ± 4h (28 Days) *	Awaited	Not less than 33.0
4	Setting Time (Minutes)		
	Initial	130	Not less than 30
	Final	205	Not more than 600
5	Soundness		
	Le-Chatelier Expansion (mm)	1.00	Not more than 10.0
	Auto-Clave Expansion (%)	0.040	Not more than 0.8
6	Drying Shrinkage (%)*	Awaited	Not more than 0.15
7	Normal Consistency (%)	29.75	
	Temp. During Testing (°C)	27.00	(27 ± 2)°C

* Fly Ash Content in Cement is (%)	26.00
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The above cement complies with the requirements of IS 1489 (Part I): 2015 for Portland Pozzolana Cement.

Special test of Premium product (If any)	1 Day Strength (MPa)	19.40
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Manager (QA)

Registered Office: Cement House, 121, Maharishi Karve Road, Mumbai - 400020

IS 1489 (Part-1): 2015



CM/L 1209132

ACC

ACC Limited
Wadi Cement Works

WORK TEST CERTIFICATE

IS / ISO 9001



Portland Pozzolana Cement

Despatched during Week No.	2	From	08/01/19	To	14/01/19
Test Certificate No.	2	Reference No.		WCW/IMS/QA/FM/09	
Dated	22/01/19				
S.N.	Parameters	Results Obtained	Requirement as per IS 1489 (Part I) : 2015		
Chemical Composition					
1	Loss on Ignition (% by mass)	2.00	Not More than 5.0 %		
	Magnesia (% by mass)	1.00	Not more than 6.0 %		
	Sulphuric Anhydride SO ₃ (% by mass)	2.60	Not More than 3.5 %		
	Chloride Content (% by mass)	0.01	Not more than 0.1 % for general purpose & not more than 0.05 % for pre-stressed structures		
	Insoluble Residue (% by mass)	27.80	Not More than $[X + 4.0 (100-X) / 100]$ & less than (0.6 X), Where "X" is the declared Pozzolana content in cement		
Physical Analysis					
2	Fineness				
	Blaine's Specific Surface Area (m ² / kg)	337	Not Less than 300		
3	Compressive Strength (MPa)				
	72 ± 1h (3 Days)	27.3	Not less than 16.0		
	168 ± 2h (7 Days)	36.7	Not less than 22.0		
	672 ± 4h (28 Days) *	Awaited	Not less than 33.0		
4	Setting Time (Minutes)				
	Initial	155	Not less than 30		
	Final	235	Not more than 600		
5	Soundness				
	Le-Chatelier Expansion (mm)	1.00	Not more than 10.0		
	Auto-Clave Expansion (%)	0.030	Not more than 0.8		
6	Drying Shrinkage (%)*	Awaited	Not more than 0.15		
7	Normal Consistency (%)	30.50			
	Temp. During Testing (°C)	27.00	(27 ± 2) ^o C		

* Fly Ash Content in Cement is (%)	34.00
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The above cement complies with the requirements of IS 1489 (Part I): 2015 for Portland Pozzolana Cement.

Manager (QA)