

No : H 129251

Date : 13.01.2017



NATIONAL COUNCIL FOR CEMENT AND BUILDING MATERIALS
INDEPENDENT TESTING LABORATORIES, HYDERABAD



C.No. T-0954

TEST CERTIFICATE

Sample : Said to be OPC-53 Gr Condition of sample : Satisfactory
Customer's Name & Address : M/s. Emami Cement Ltd., Works: Vill. Risda, Suhela Road, Baloda Bazar, Dist. Baloda Bazar (C.G.)- 493 332
Laboratory Mark : TSH-161103 Identification : Yr Ltr dated 01.12.2016
Date of performance of Test : 08.12.2016 to 05.01.2017 Date of Receipt : 05.12.2016
Tested as per : IS: 4031-1988 Specification : IS: 269-2015

Sl.No	Tests Carried Out	Specified requirements	Results obtained	
1.	Fineness (Blaine)	225 (Min)	333	m ² /kg
2.	Setting Time	- Initial - Final	30 (Min) 600 (Max)	125 minutes 145 minutes
3.	Soundness	- Le Chatelier Expansion - Autoclave Expansion	10 (Max) 0.8 (Max)	1.00 mm 0.16 Percent
4.	Compressive strength at	- 72 ± 1 hrs - 168 ± 2 hrs - 672 ± 4 hrs	27.0 (Min) 37.0 (Min) 53.0 (Min)	37.5 MPa 54.0 MPa 62.7 MPa

Conditions:

1. Results given above refer only to the sample supplied.
2. This report is being issued on the specific understanding that NCB will not in any way be involved in any action following interpretation of the above results.
3. This report shall not be reproduced except in full without written approval from NCB.
4. Corresponding requirements in accordance with recognized standards are available from NCB on specific request.
5. The balance quantity of the tested sample wherever possible shall be retained only for a period of **Two months** from the date of issue of the Test Certificate.

- End -

T. Mohan Rao
(T. MOHAN RAO)
Authorised Signatory

K.S. Durga Prasad
K.S. DURGA PRASAD
QUALITY MANAGER
Centre for Cement Research
and Independent Testing

NCB Bhavan, Old Bombay Road, Hyderabad 500 008 (TS), INDIA

emami **DOUBLE BULL** CEMENT

Mazbooti Ummeed Se Zyada.

No : H 129249

Date : 13.01.2017



NATIONAL COUNCIL FOR CEMENT AND BUILDING MATERIALS
INDEPENDENT TESTING LABORATORIES, HYDERABAD



C. No. T-0954

TEST CERTIFICATE

Sample : Said to be PPC Condition of sample : Satisfactory
 Customer's Name & Address : M/s. Emami Cement Ltd., Works: Vill. Risda, Suhela Road, Baloda Bazar, Dist. Baloda Bazar (C.G.)- 493 332
 Laboratory Mark : TSH-161101 Identification : Yr Ltr dated 01.12.2016
 Date of performance of Test : 07.12.2016 to 11.01.2017 Date of Receipt : 05.12.2016
 Tested as per : IS: 4031-1988 Specification : 1489(Part-1)-2015

Sl.No.	Tests Carried Out	Specified requirements	Results obtained
1	Fineness (Blaine)	300 (Min)	384 m ² /kg
2	Setting Time	- Initial - Final	30 (Min) 600 (Max) 160 minutes 205 minutes
3	Soundness	- Le Chatelier Expansion - Autoclave Expansion	10 (Max) 0.8 (Max) 1.00 mm 0.04 Percent
4	Compressive strength at	- 72 ± 1 hrs - 168 ± 2 hrs - 672 ± 4 hrs	16.0 (Min) 22.0 (Min) 33.0 (Min) 28.5 MPa 39.5 MPa 54.5 MPa
5	Drying shrinkage	0.15 (Max)	0.07 Percent

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-- End --

J Mohan Rao
(J. MOHAN RAO)
Authorised Signatory

K.S. Durga Prasad
K.S. DURGA PRASAD
QUALITY MANAGER
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NCB Bhavan, Old Bombay Road, Hyderabad 500 008 (TS), INDIA

emami **DOUBLE BULL** CEMENT

Mazbooti Ummeed Se Zyada.

: H 129821
: 19.06.2017



NATIONAL COUNCIL FOR CEMENT AND BUILDING MATERIALS
INDEPENDENT TESTING LABORATORIES, HYDERABAD



C.No.T-0953

TEST CERTIFICATE

Sample : Said to be PSC Condition of sample : Satisfactory
Customer's Name & Address : M/s. Emami Cement Ltd., Emami Tower, 687 Anandapur, EM Bypass,
Kolkata – 700107.
Laboratory Mark : TSH-170067 Identification : Yr Ltr dated 05.04.2017
Date of performance of Test : 16.05.2017 to 15.06.2017 Date of Receipt : 28.04.2017
Tested as per : IS: 4032-1985 Specification : IS : 455-2015

Sl.No.	Tests Carried Out	Results Obtained
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CHEMICAL ANALYSIS


<u>Constituents Determined</u>		<u>Percentage by Weight</u>	
		<u>Specific requirements</u>	<u>Results obtained</u>
1	Magnesia (MgO)	10.0 (max)	5.09
2	Sulphuric Anhydride (SO ₃)	3.50 (max)	2.16
3	Sulphide Sulphur (S)	1.50 (max)	0.30
4	Loss on Ignition	5.0 (max)	0.62
5	Insoluble Residue	4.0 (max)	1.87
6	Total Chlorides	0.1 (max)	0.005

Conditions:

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4. Corresponding requirements in accordance with recognized standards are available from NCB on specific request.
5. The balance quantity of the tested sample wherever possible shall be retained only for a period of **Two months** from the date of issue of the Test Certificate.

-- End --


(T. MOHAN RAO)
Authorised Signatory


K.S. DURGA PRASAD
QUALITY MANAGER
Centre for Cement Research
and Independent Testing

NCB Bhavan, Old Bomhay Road, Hyderabad 500 008 (TS), INDIA

emami **DOUBLE BULL** CEMENT



Mazbooti Ummeed Se Zyada.

No : H 129820

Date : 19.06.2017



NATIONAL COUNCIL FOR CEMENT AND BUILDING MATERIALS
INDEPENDENT TESTING LABORATORIES, HYDERABAD



C.No.T-0954

TEST CERTIFICATE

Sample : Said to be PSC Condition of sample : Satisfactory
 Customer's Name & Address : M/s. Emami Cement Ltd., Emami Tower, 687 Anandapur, EM Bypass,
 Kolkata – 700107.
 Laboratory Mark : TSH-170066 Identification : Yr Ltr dated 05.04.2017
 Date of performance of Test : 03.05.2017 to 31.05.2017 Date of Receipt : 28.04.2017
 Tested as per : IS: 4031-1988 Specification : IS: 455-2015

Sl.No	Tests Carried Out	Results Obtained		
		Specific requirements	Results obtained	
1.	Fineness (Blaine)	225 (min)	411	m ² /kg
2.	Setting Time	- Initial	30 (min)	155 Minutes
		- Final	600 (max)	195 minutes
3.	Soundness	- Le Chatelier Expansion	10 (max)	1.00 mm
		- Autoclave Expansion	0.8 (max)	-0.03 Percent
4.	Compressive strength at	- 72 ± 1 hrs	16 (min)	26.0 MPa
		- 168 ± 2 hrs	22 (min)	38.5 MPa
		- 672 ± 4 hrs	33 (min)	52.5 MPa

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- 4 Corresponding requirements in accordance with recognised standards are available from NCB on specific request.
- 5 The balance quantity of the tested sample wherever possible shall be retained only for a period of **Two months** from the date of issue of the Test Certificate.

-- End --

(P. MOHAN RAO)
Authorised Signatory

K.S. DURGA PRASAD
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emami **DOUBLE BULL** CEMENT

Mazbooti Ummeed Se Zyada.



EMAMI CEMENT LIMITED, RISDA

(A Unit of Emami Group)

Village : - Risda, Suhela Road

Dist : Baloda Bazar- 493 332 (C.G.)



TEST CERTIFICATE ORDINARY PORTLAND CEMENT- 43 Grade

Date of Issue : 02-01-2018

Sample Description : W48 M11 (12) Y17

Despatch Period : 26/11/2017 to 02/12/2017

S.No.	Test Carried Out	Requirement as Per IS: 269-2015	Result Obtained
CHEMICAL TESTING			
1	Lime Saturation Factor	Not greater than 1.02 and not less than 0.66	0.92
	Ratio of % Alumina to that of Iron Oxide Al_2O_3 / Fe_2O_3	0.66 Minimum	1.32
	Total Loss on Ignition (% by mass)	5.0 Maximum	2.76
	Magnesia (% by mass)	6.0 Maximum	2.99
	Sulphuric Anhydride (% by mass)	3.5 Maximum	3.04
	Chloride (% by mass)	0.10 Maximum	0.011
	Insoluble Residue (% by mass)	5.0 Maximum	2.40
PHYSICAL TESTING			
3	Fineness (m^2 / Kg)	225 Minimum	296
	Normal Consistency (%)	-	27.75
4	Setting Time (minutes)		
	a) Initial	30 Minimum	140
	b) Final	600 Maximum	190
5	Soundness		
	a) Le-Chatlier Expansion (mm)	10 Maximum	1.0
	b) Autoclave Expansion (%)	0.8 Maximum	0.14
6	Compressive Strength (Mpa)		
	b. 72 +/- 1 hr. (3 days)	23 Minimum	37.2
	c. 168 +/- 2 hr.(7 days)	33 Minimum	46.5
	d. 672 +/- 4hr. (28 days) *	43 Minimum 58 Maximum	55.4

Environment condition during test , Temperature = $27 \pm 2^\circ C$ and RH > 65%

The above cement complies with the requirements of IS 269 : 2015 for 43 Grade Ordinary Portland Cement.

Vijay Gang
Prepared by

P.P. Samui
Authorised Signatory

Regd. Office : Emami Tower , 2nd Floor , 687 Anandpur, E.M. Bypass, Kolkata- 700107

emami* **DOUBLE BULL** CEMENT



Mazbooti Ummeed Se Zyada.



EMAMI CEMENT LIMITED, RISDA

(A Unit of Emami Group)

Village : - Risda, Suhela Road

Dist : Baloda Bazar- 493 332 (C.G.)



TEST CERTIFICATE ORDINARY PORTLAND CEMENT- 53 Grade

Date of Issue : 02-01-2018

Sample Description : W48 M 11 (12) Y17

Despatch Period : 26/11/2017 to 02/12/2017

S.No.	Test Carried Out	Requirement as Per IS: 269-2015	Result Obtained
CHEMICAL TESTING			
1	Lime Saturation Factor	Not greater than 1.02 and not less than 0.80	0.94
	Ratio of % Alumina to that of Iron Oxide Al ₂ O ₃ / Fe ₂ O ₃	0.66 Minimum	1.27
	Total Loss on Ignition (% by mass)	4.0 Maximum	2.71
	Magnesia (% by mass)	6.0 Maximum	2.94
	Sulphuric Anhydride (% by mass)	3.5 Maximum	3.07
	Chloride (% by mass)	0.10 Maximum	0.012
	Insoluble Residue (% by mass)	5.0 Maximum	1.95
PHYSICAL TESTING			
	Fineness (m ² / Kg)	225 Minimum	348
3	Normal Consistency (%)	-	27.75
4	Setting Time (minutes)		
	a) Initial	30 Minimum	125
	b) Final	600 Maximum	175
5	Soundness		
	a) Le-Chatlier Expansion (mm)	10 Maximum	1.0
	b) Autoclave Expansion (%)	0.8 Maximum	0.13
6	Compressive Strength (Mpa)		
	a. 24 hr. (1day)	NA	32.3
	b. 72 +/- 1 hr. (3 days)	27 Minimum	45.0
	c. 168 +/- 2 hr.(7 days)	37 Minimum	54.1
	d. 672 +/- 4hr. (28 days)	53 Minimum	63.5

Environment condition during test , Temperature =27±2°C and RH > 65%

The above cement complies with the requirements of IS 269 : 2015 for 53 Grade Ordinary Portland Cement.

Prepared by

P.P. Sengupta

Authorised Signatory

Regd. Office : Emami Tower , 2nd Floor , 687 Anandpur, E.M. Bypass, Kolkata- 700107

emami **DOUBLE BULL** CEMENT



Mazbooti Ummeed Se Zyada.



EMAMI CEMENT LIMITED, RISDA

(A Unit of Emami Group)

Village : - Risda, Suhela Road

Dist : Baloda Bazar- 493 332 (C.G.)



TEST CERTIFICATE PORTLAND POZZOLANA CEMENT

Date of Issue : 02.01.2018

Sample Description : W47 M11 Y17

Despatch Period : 19/11/2017 to 25/11/2017

S.No.	Test Carried Out	Requirement as Per IS: 1489 (Part-1)- 2015	Result Obtained
CHEMICAL TESTING			
1	Total Loss on Ignition (% by mass)	5.0 Max	2.66
	Magnesia (% by mass)	6.0 Max	2.20
	Sulphuric Anhydride (% by mass)	3.50 Max	2.33
	Chloride (% by mass)	0.10 Max	0.010
	Insoluble Residue (% by mass)	Maximum $X + (4.0 (100-X) / 100)$ Minimum 0.6X Where "X" is the declared % of Fly Ash in given Portland Pozzolana Cement.	31.92
PHYSICAL TESTING			
	Fineness (m ² / Kg)	Minimum 300	375
3	Normal Consistency (%)		29.00
4	Setting Time (minutes)		
	a) Initial	Minimum 30	165
	b) Final	Maximum 600	225
5	Soundness		
	a) Le-Chatlier Expansion (mm)	Maximum 10	1.0
	b) Autoclave Expansion (%)	Maximum 0.8	0.07
6	Compressive Strength (Mpa)		
	a. 24.0 hr. (1 day)	NA	19.4
	b. 72 +/- 1 hr. (3 days)	Minimum 16	32.2
	c. 168 +/- 2 hr. (7 days)	Minimum 22	41.5
d. 672 +/- 4hr. (28 days)	Minimum 33	54.8	
7	Drying Shrinkage (%)	Maximum 0.15	0.032
8	Fly Ash in Cement (%)	Minimum 15 % and Maximum 35 %	34.00

Environment condition during test , Temperature =27±2°C and RH >65%

The above cement complies with the requirements of IS 1489 (Part-1) : 2015 for Portland Pozzolana Cement.

Vijay Garg
Prepared by

P.P. Sanyal
Authorised Signatory

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emami* **DOUBLE BULL** CEMENT



Mazbooti Ummeed Se Zyada.

IS 455 : 2015



CML - 5900018372

EMAMI CEMENT LIMITED, RISDA

(A Unit of Emami Group)

Village : - Risda, Suhela Road

Dist : Baloda Bazar- 493 332 (C.G.)



TEST CERTIFICATE PORTLAND SLAG CEMENT

Date of Issue : 02/01/2018

Sample Description : W48 M11 (12) Y17 Despatch Period : 26/11/2017 to 02/12/2017

S.No.	Test Carried Out	Requirement as Per IS: 455 - 2015	Result Obtained
CHEMICAL TESTING			
1	Total Loss on Ignition (% by mass)	5.0 Max	2.90
	Magnesia (% by mass)	10.0 Max	4.99
	Sulphuric Anhydride (% by mass)	3.5 Max	2.86
	Sulphide Sulphur (% by mass)	1.50 Max	0.57
	Chloride (% by mass)	0.10 Max	0.010
	Insoluble Residue (% by mass)	4.0 Max.	2.40
PHYSICAL TESTING			
2	Fineness (m ² / Kg)	Minimum 225	402
3	Normal Consistency (%)	-	29.50
Setting Time (minutes)			
4	a) Initial	Minimum 30	135
	b) Final	Maximum 600	190
Soundness			
5	a) Le-Chatlier Expansion (mm)	Maximum 10	1.0
	b) Autoclave Expansion (%)	Maximum 0.8	0.06
Compressive Strength (Mpa)			
6	a. 72 +/- 1 hr. (3 days)	Minimum 16	33.8
	b. 168 +/- 2 hr.(7 days)	Minimum 22	44.9
	c. 672 +/- 4hr. (28 days)	Minimum 33	54.8
7	Slag in Cement (%)	Minimum 25 and Maximum 70	50.00

Environment condition during test , Temperature = 27±2°C and RH >65%

The above cement complies with the requirements of IS 455 : 2015 for Portland Slag Cement.

Vijay Gang
Prepared by

P.P. Sengupta
Authorised Signatory

Regd. Office : Emami Tower , 2nd Floor , 687 Anandpur, E.M. Bypass, Kolkata- 700107

emami* **DOUBLE BULL** CEMENT

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