

GOVERNMENT OF GOA
QUALITY CONTROL LABORATORY
WATER RESOURCES DEPARTMENT

Test Report No.: WRD/QC/F.6-2/Cube -T : 7072 To 7085,7102 To 7115,7118 To 7131 / Lab / **174** / 2019 - 20 Dated:- 10 / 06 / 2019
Laboratory : Bicholim -Goa / Sub Division V (QC)/WRD/ Bicholim -Goa.

Name of Work: - Construction of Barrage and up gradation of Raw water pumping station at Ganjem on Mhadei River for Augmentation of Raw water for OPA water works Reg. Construction of Barrage , providing and laying 1000 mm dia. D.I. pipe Rising main and Break Pressure Tank at Ganjem in Sattari Taluka.

Ref. to Requisition No.: WRD/WDVI/SD I /F.W.215/2019-20/ **186** Dated :- 07-06-2019

Qty. Recived. : 42 Sets of cube Date of Receipt: - 07/06/2019. Tested on: - 07, 08, 09 /06/2019 Ref to CPWD :2002, Vol. I

Sample: RCC 1 : 1.5 : 3 Mix O.S No. : 2139 To 2152,2169 To 2182/SS, 587 To 600/SP. Lab. Sample No.: 6001 To 6042. Tested By: - Mrs. S. B. Naik Shirodkar. J.E. & S.M.Patri. A.E.

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SR.NO.	DISCRIPTION OF SAMPLE	TESTED FOR	RESULTS		Max./Min.Value permissible	% above or below	REMARK
1	Rinforced Cement concrete cube of mix 1 : 1.5 : 3, cast on 10 / 05 /2019, RCC for floor of barrage from Ch. 0 - 55 m.	28th day compressive strength	314.87	Kg/Cm ²	265.00 Kg/Cm ²	23.09	Represents Qty. 20.00 Cum.
			323.93	Kg/Cm ²			
			339.79	Kg/Cm ²			
			Average	326.20			
2	Rinforced Cement concrete cube of mix 1 : 1.5 : 3, cast on 10 / 05 /2019, RCC for floor of barrage from Ch. 0 - 55 m.	28th day compressive strength	262.77	Kg/Cm ²	265.00 Kg/Cm ²	6.85	--- do---
			283.16	Kg/Cm ²			
			303.55	Kg/Cm ²			
			Average	283.16			
3	Rinforced Cement concrete cube of mix 1 : 1.5 : 3, cast on 10 / 05 /2019, RCC for floor of barrage from Ch. 0 - 55 m.	28th day compressive strength	276.36	Kg/Cm ²	265.00 Kg/Cm ²	7.99	--- do---
			285.42	Kg/Cm ²			
			296.75	Kg/Cm ²			
			Average	286.18			
4	Rinforced Cement concrete cube of mix 1 : 1.5 : 3, cast on 10 / 05 /2019, RCC for floor of barrage from Ch. 0 - 55 m.	28th day compressive strength	342.05	Kg/Cm ²	265.00 Kg/Cm ²	21.38	--- do---
			337.52	Kg/Cm ²			
			285.42	Kg/Cm ²			
			Average	321.67			
5	Rinforced Cement concrete cube of mix 1 : 1.5 : 3, cast on 10 / 05 /2019, RCC for floor of barrage from Ch. 0 - 55 m.	28th day compressive strength	344.32	Kg/Cm ²	265.00 Kg/Cm ²	25.37	--- do---
			317.14	Kg/Cm ²			
			335.26	Kg/Cm ²			
			Average	332.24			
6	Rinforced Cement concrete cube of mix 1 : 1.5 : 3, cast on 10 / 05 /2019, RCC for floor of barrage from Ch. 0 - 55 m.	28th day compressive strength	328.46	Kg/Cm ²	265.00 Kg/Cm ²	20.24	--- do---
			310.34	Kg/Cm ²			
			317.14	Kg/Cm ²			
			Average	318.65			
7	Rinforced Cement concrete cube of mix 1 : 1.5 : 3, cast on 10 / 05 /2019, RCC for floor of barrage from Ch. 0 - 55 m.	28th day compressive strength	337.52	Kg/Cm ²	265.00 Kg/Cm ²	22.81	--- do---
			314.87	Kg/Cm ²			
			323.93	Kg/Cm ²			
			Average	325.44			

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SR.NO.	DISCRIPTION OF SAMPLE	TESTED FOR	RESULTS		Max./Min.Value permissable	% above or below	REMARK
8	Rinforced Cement concrete cube of mix 1 : 1.5 : 3, cast on 10 / 05 /2019, RCC for floor of barrage from Ch. 0 - 55 m.	28th day compressive strength	321.67	Kg/Cm ²	265.00 Kg/Cm ²	18.82	Represents Qty. 20.00 Cum.
			305.81	Kg/Cm ²			
			317.14	Kg/Cm ²			
		Average	314.87	Kg/Cm²			
9	Rinforced Cement concrete cube of mix 1 : 1.5 : 3, cast on 10 / 05 /2019, RCC for floor of barrage from Ch. 0 - 55 m.	28th day compressive strength	310.34	Kg/Cm ²	265.00 Kg/Cm ²	16.82	--- do---
			294.48	Kg/Cm ²			
			323.93	Kg/Cm ²			
		Average	309.59	Kg/Cm²			
10	Rinforced Cement concrete cube of mix 1 : 1.5 : 3, cast on 10 / 05 /2019, RCC for floor of barrage from Ch. 0 - 55 m.	28th day compressive strength	321.67	Kg/Cm ²	265.00 Kg/Cm ²	21.67	--- do---
			317.14	Kg/Cm ²			
			328.46	Kg/Cm ²			
		Average	322.42	Kg/Cm²			
11	Rinforced Cement concrete cube of mix 1 : 1.5 : 3, cast on 10 / 05 /2019, RCC for floor of barrage from Ch. 0 - 55 m.	28th day compressive strength	317.14	Kg/Cm ²	265.00 Kg/Cm ²	24.52	--- do---
			339.79	Kg/Cm ²			
			332.99	Kg/Cm ²			
		Average	329.97	Kg/Cm²			
12	Rinforced Cement concrete cube of mix 1 : 1.5 : 3, cast on 10 / 05 /2019, RCC for floor of barrage from Ch. 0 - 55 m.	28th day compressive strength	335.26	Kg/Cm ²	265.00 Kg/Cm ²	22.24	--- do---
			310.34	Kg/Cm ²			
			326.20	Kg/Cm ²			
		Average	323.93	Kg/Cm²			
13	Rinforced Cement concrete cube of mix 1 : 1.5 : 3, cast on 10 / 05 /2019, RCC for floor of barrage from Ch. 0 - 55 m.	28th day compressive strength	305.81	Kg/Cm ²	265.00 Kg/Cm ²	19.96	--- do---
			321.67	Kg/Cm ²			
			326.20	Kg/Cm ²			
		Average	317.89	Kg/Cm²			
14	Rinforced Cement concrete cube of mix 1 : 1.5 : 3, cast on 10 / 05 /2019, RCC for floor of barrage from Ch. 0 - 55 m.	28th day compressive strength	328.46	Kg/Cm ²	265.00 Kg/Cm ²	20.53	--- do---
			323.93	Kg/Cm ²			
			305.81	Kg/Cm ²			
		Average	319.40	Kg/Cm²			
15	Plain Cement concrete cube of mix 1 : 2 : 4, cast on 11 / 05 /2019, PCC for plum concrete below barrage floor from Ch. 50 - 95 m.	28th day compressive strength	271.83	Kg/Cm ²	210.00 Kg/Cm ²	23.69	--- do---
			258.24	Kg/Cm ²			
			249.18	Kg/Cm ²			
		Average	259.75	Kg/Cm²			
16	Plain Cement concrete cube of mix 1 : 2 : 4, cast on 11 / 05 /2019, PCC for plum concrete below barrage floor from Ch. 50 - 95 m.	28th day compressive strength	246.91	Kg/Cm ²	210.00 Kg/Cm ²	15.06	--- do---
			242.38	Kg/Cm ²			
			235.59	Kg/Cm ²			
		Average	241.63	Kg/Cm²			

Junior Engineer

Assistant Engineer

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SR.NO.	DISCRIPTION OF SAMPLE	TESTED FOR	RESULTS		Max./Min.Value permissable	% above or below	REMARK
17	Plain Cement concrete cube of mix 1 : 2 : 4, cast on 11 / 05 /2019, PCC for plum concrete below barrage floor from Ch. 50 - 95 m.	28th day compressive strength	258.24	Kg/Cm ²	210.00 Kg/Cm ²	18.30	Represents Qty. 20.00 Cum.
			249.18	Kg/Cm ²			
			237.85	Kg/Cm ²			
		Average	248.42	Kg/Cm²			
18	Plain Cement concrete cube of mix 1 : 2 : 4, cast on 11 / 05 /2019, PCC for plum concrete below barrage floor from Ch. 50 - 95 m.	28th day compressive strength	219.73	Kg/Cm ²	210.00 Kg/Cm ²	10.39	--- do---
			244.65	Kg/Cm ²			
			231.06	Kg/Cm ²			
		Average	231.81	Kg/Cm²			
19	Plain Cement concrete cube of mix 1 : 2 : 4, cast on 11 / 05 /2019, PCC for plum concrete below barrage floor from Ch. 50 - 95 m.	28th day compressive strength	235.59	Kg/Cm ²	210.00 Kg/Cm ²	12.18	--- do---
			244.65	Kg/Cm ²			
			226.53	Kg/Cm ²			
		Average	235.59	Kg/Cm²			
20	Plain Cement concrete cube of mix 1 : 2 : 4, cast on 11 / 05 /2019, PCC for plum concrete below barrage floor from Ch. 50 - 95 m.	28th day compressive strength	260.51	Kg/Cm ²	210.00 Kg/Cm ²	19.02	--- do---
			253.71	Kg/Cm ²			
			235.59	Kg/Cm ²			
		Average	249.93	Kg/Cm²			
21	Plain Cement concrete cube of mix 1 : 2 : 4, cast on 11 / 05 /2019, PCC for plum concrete below barrage floor from Ch. 50 - 95 m.	28th day compressive strength	265.04	Kg/Cm ²	210.00 Kg/Cm ²	22.61	--- do---
			249.18	Kg/Cm ²			
			258.24	Kg/Cm ²			
		Average	257.48	Kg/Cm²			
22	Plain Cement concrete cube of mix 1 : 2 : 4, cast on 11 / 05 /2019, PCC for plum concrete below barrage floor from Ch. 50 - 95 m.	28th day compressive strength	219.73	Kg/Cm ²	210.00 Kg/Cm ²	19.02	--- do---
			258.24	Kg/Cm ²			
			271.83	Kg/Cm ²			
		Average	249.93	Kg/Cm²			
23	Plain Cement concrete cube of mix 1 : 2 : 4, cast on 11 / 05 /2019, PCC for plum concrete below barrage floor from Ch. 50 - 95 m.	28th day compressive strength	265.04	Kg/Cm ²	210.00 Kg/Cm ²	17.94	--- do---
			246.91	Kg/Cm ²			
			231.06	Kg/Cm ²			
		Average	247.67	Kg/Cm²			
24	Plain Cement concrete cube of mix 1 : 2 : 4, cast on 11 / 05 /2019, PCC for plum concrete below barrage floor from Ch. 50 - 95 m.	28th day compressive strength	237.85	Kg/Cm ²	210.00 Kg/Cm ²	14.70	--- do---
			258.24	Kg/Cm ²			
			226.53	Kg/Cm ²			
		Average	240.87	Kg/Cm²			
25	Plain Cement concrete cube of mix 1 : 2 : 4, cast on 11 / 05 /2019, PCC for plum concrete below barrage floor from Ch. 50 - 95 m.	28th day compressive strength	244.65	Kg/Cm ²	210.00 Kg/Cm ²	16.50	--- do---
			237.85	Kg/Cm ²			
			251.44	Kg/Cm ²			
		Average	244.65	Kg/Cm²			

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SR.NO.	DISCRIPTION OF SAMPLE	TESTED FOR	RESULTS		Max./Min.Value permissable	% above or below	REMARK
26	Plain Cement concrete cube of mix 1 : 2 : 4, cast on 11 / 05 /2019, PCC for plum concrete below barrage floor from Ch. 50 - 95 m.	28th day compressive strength	258.24	Kg/Cm ²	210.00 Kg/Cm ²	22.97	Represents Qty. 20.00 Cum.
			271.83	Kg/Cm ²			
			244.65	Kg/Cm ²			
		Average	258.24	Kg/Cm²			
27	Plain Cement concrete cube of mix 1 : 2 : 4, cast on 11 / 05 /2019, PCC for plum concrete below barrage floor from Ch. 50 - 95 m.	28th day compressive strength	237.85	Kg/Cm ²	210.00 Kg/Cm ²	11.11	--- do---
			244.65	Kg/Cm ²			
			217.47	Kg/Cm ²			
		Average	233.32	Kg/Cm²			
28	Plain Cement concrete cube of mix 1 : 2 : 4, cast on 11 / 05 /2019, PCC for plum concrete below barrage floor from Ch. 50 - 95 m.	28th day compressive strength	240.12	Kg/Cm ²	210.00 Kg/Cm ²	19.02	--- do---
			260.51	Kg/Cm ²			
			249.18	Kg/Cm ²			
		Average	249.93	Kg/Cm²			
29	Plain Cement concrete cube of mix 1 : 2 : 4, cast on 12 / 05 /2019, PCC for plum concrete below barrage floor from Ch. 50 - 95 m.	28th day compressive strength	269.57	Kg/Cm ²	210.00 Kg/Cm ²	20.45	--- do---
			249.18	Kg/Cm ²			
			240.12	Kg/Cm ²			
		Average	252.95	Kg/Cm²			
30	Plain Cement concrete cube of mix 1 : 2 : 4, cast on 12 / 05 /2019, PCC for plum concrete below barrage floor from Ch. 50 - 95 m.	28th day compressive strength	260.51	Kg/Cm ²	210.00 Kg/Cm ²	24.41	--- do---
			274.10	Kg/Cm ²			
			249.18	Kg/Cm ²			
		Average	261.26	Kg/Cm²			
31	Plain Cement concrete cube of mix 1 : 2 : 4, cast on 12 / 05 /2019, PCC for plum concrete below barrage floor from Ch. 50 - 95 m.	28th day compressive strength	253.71	Kg/Cm ²	210.00 Kg/Cm ²	20.45	--- do---
			267.30	Kg/Cm ²			
			237.85	Kg/Cm ²			
		Average	252.95	Kg/Cm²			
32	Plain Cement concrete cube of mix 1 : 2 : 4, cast on 12 / 05 /2019, PCC for plum concrete below barrage floor from Ch. 50 - 95 m.	28th day compressive strength	262.77	Kg/Cm ²	210.00 Kg/Cm ²	23.69	--- do---
			269.57	Kg/Cm ²			
			246.91	Kg/Cm ²			
		Average	259.75	Kg/Cm²			
33	Plain Cement concrete cube of mix 1 : 2 : 4, cast on 12 / 05 /2019, PCC for plum concrete below barrage floor from Ch. 50 - 95 m.	28th day compressive strength	242.38	Kg/Cm ²	210.00 Kg/Cm ²	16.86	--- do---
			240.12	Kg/Cm ²			
			253.71	Kg/Cm ²			
		Average	245.40	Kg/Cm²			
34	Plain Cement concrete cube of mix 1 : 2 : 4, cast on 12 / 05 /2019, PCC for plum concrete below barrage floor from Ch. 50 - 95 m.	28th day compressive strength	240.12	Kg/Cm ²	210.00 Kg/Cm ²	21.53	--- do---
			269.57	Kg/Cm ²			
			255.97	Kg/Cm ²			
		Average	255.22	Kg/Cm²			

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SR.NO.	DISCRIPTION OF SAMPLE	TESTED FOR	RESULTS		Max./Min.Value permissable	% above or below	REMARK
35	Plain Cement concrete cube of mix 1 : 2 : 4, cast on 12 / 05 /2019, PCC for plum concrete below barrage floor from Ch. 50 - 95 m.	28th day compressive strength	246.91	Kg/Cm ²	210.00 Kg/Cm ²	16.14	Represents Qty. 20.00 Cum.
			251.44	Kg/Cm ²			
			233.32	Kg/Cm ²			
		Average	243.89	Kg/Cm²			
36	Plain Cement concrete cube of mix 1 : 2 : 4, cast on 12 / 05 /2019, PCC for plum concrete below barrage floor from Ch. 50 - 95 m.	28th day compressive strength	222.00	Kg/Cm ²	210.00 Kg/Cm ²	7.15	--- do---
			235.59	Kg/Cm ²			
			217.47	Kg/Cm ²			
		Average	225.02	Kg/Cm²			
37	Plain Cement concrete cube of mix 1 : 2 : 4, cast on 12 / 05 /2019, PCC for plum concrete below barrage floor from Ch. 50 - 95 m.	28th day compressive strength	237.85	Kg/Cm ²	210.00 Kg/Cm ²	13.26	--- do---
			246.91	Kg/Cm ²			
			228.79	Kg/Cm ²			
		Average	237.85	Kg/Cm²			
38	Plain Cement concrete cube of mix 1 : 2 : 4, cast on 12 / 05 /2019, PCC for plum concrete below barrage floor from Ch. 50 - 95 m.	28th day compressive strength	244.65	Kg/Cm ²	210.00 Kg/Cm ²	11.47	--- do---
			233.32	Kg/Cm ²			
			224.26	Kg/Cm ²			
		Average	234.08	Kg/Cm²			
39	Plain Cement concrete cube of mix 1 : 2 : 4, cast on 12 / 05 /2019, PCC for plum concrete below barrage floor from Ch. 50 - 95 m.	28th day compressive strength	262.77	Kg/Cm ²	210.00 Kg/Cm ²	21.17	--- do---
			246.91	Kg/Cm ²			
			253.71	Kg/Cm ²			
		Average	254.46	Kg/Cm²			
40	Plain Cement concrete cube of mix 1 : 2 : 4, cast on 12 / 05 /2019, PCC for plum concrete below barrage floor from Ch. 50 - 95 m.	28th day compressive strength	255.97	Kg/Cm ²	210.00 Kg/Cm ²	13.98	--- do---
			226.53	Kg/Cm ²			
			235.59	Kg/Cm ²			
		Average	239.36	Kg/Cm²			
41	Plain Cement concrete cube of mix 1 : 2 : 4, cast on 12 / 05 /2019, PCC for plum concrete below barrage floor from Ch. 50 - 95 m.	28th day compressive strength	262.77	Kg/Cm ²	210.00 Kg/Cm ²	17.58	--- do---
			246.91	Kg/Cm ²			
			231.06	Kg/Cm ²			
		Average	246.91	Kg/Cm²			
42	Plain Cement concrete cube of mix 1 : 2 : 4, cast on 12 / 05 /2019, PCC for plum concrete below barrage floor from Ch. 50 - 95 m.	28th day compressive strength	249.18	Kg/Cm ²	210.00 Kg/Cm ²	12.18	--- do---
			235.59	Kg/Cm ²			
			222.00	Kg/Cm ²			
		Average	235.59	Kg/Cm²			

Copy to: 1. The Assistant Engineer SD I , WD VI , WRD , Bicholim Goa.

2. Copy submitted to the Superintending Engineer ,CPO,WRD, Sinchai Bhavan, Porvorim Goa. For kind Information.

3. Copy submitted to the Executive Engineer ,WDVI,WRD, Bicholim-Goa.

4. QC Lab File. 5. Bill File.

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