

**GOVERNMENT OF GOA
QUALITY CONTROL LABORATORY
WATER RESOURCES DEPARTMENT**

Test Report No.: WRD/QC/F.6-2/Cube -T : 9545 To 9556, 9570 To 9581, 9593 To 9604 / Lab / **32** / 2020 - 21

Dated:- 28 / 05/ 2020

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.215/2020-21/ **53** Dated :- 21-05-2020

Qty. Recived. : 36 Sets of cube Date of Receipt: -21 /05/2020. Tested on:- 21, 22 & 23/05/2020 as per due dates. Ref to CPWD :2009, Vol. I

Sample: RCC 1 : 1.5 : 3 Mix O.S No. : 3646,3647,3659,3660,3672 & 3673/SS. Lab. Sample No.: 8818 To 8853 Tested By: - Mrs. S.B. Naik Shirodkar, J.E.

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SR.NO.	DISCRIPTION OF SAMPLE	TESTED FOR	RESULTS		Max./Min.Value permissable	% above or below	REMARK
1	Reinforced Cement concrete cube of mix 1:1.5:3 , cast on 23/04/2020, for floor of barrage from ch. 88 m - 113 m.	28th day compressive strength	269.57	Kg/Cm ²	265.00 Kg/Cm ²	4.29	Represents Qty. 15.00 Cum.
			276.36	Kg/Cm ²			
			283.16	Kg/Cm ²			
		Average	276.36	Kg/Cm²			
2	Reinforced Cement concrete cube of mix 1:1.5:3 , cast on 23/04/2020, for floor of barrage from ch. 88 m - 113 m.	28th day compressive strength	271.83	Kg/Cm ²	265.00 Kg/Cm ²	6.00	--- do ---
			278.63	Kg/Cm ²			
			292.22	Kg/Cm ²			
		Average	280.89	Kg/Cm²			
3	Reinforced Cement concrete cube of mix 1:1.5:3 , cast on 23/04/2020, for floor of barrage from ch. 88 m - 113 m.	28th day compressive strength	285.42	Kg/Cm ²	265.00 Kg/Cm ²	5.43	--- do ---
			280.89	Kg/Cm ²			
			271.83	Kg/Cm ²			
		Average	279.38	Kg/Cm²			
4	Reinforced Cement concrete cube of mix 1:1.5:3 , cast on 23/04/2020, for floor of barrage from ch. 88 m - 113 m.	28th day compressive strength	283.16	Kg/Cm ²	265.00 Kg/Cm ²	8.28	--- do ---
			280.89	Kg/Cm ²			
			296.75	Kg/Cm ²			
		Average	286.93	Kg/Cm²			
5	Reinforced Cement concrete cube of mix 1:1.5:3 , cast on 23/04/2020, for floor of barrage from ch. 88 m - 113 m.	28th day compressive strength	289.95	Kg/Cm ²	265.00 Kg/Cm ²	7.42	--- do ---
			301.28	Kg/Cm ²			
			262.77	Kg/Cm ²			
		Average	284.67	Kg/Cm²			
6	Reinforced Cement concrete cube of mix 1:1.5:3 , cast on 23/04/2020, for floor of barrage from ch. 88 m - 113 m.	28th day compressive strength	271.83	Kg/Cm ²	265.00 Kg/Cm ²	5.71	--- do ---
			289.95	Kg/Cm ²			
			278.63	Kg/Cm ²			
		Average	280.14	Kg/Cm²			

Junior Engineer

Assistant Engineer

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SR.NO.	DISCRIPTION OF SAMPLE	TESTED FOR	RESULTS		Max./Min.Value permissible	% above or below	REMARK
7	Reinforced Cement concrete cube of mix 1:1.5:3 , cast on 23/04/2020, for floor of barrage from ch. 88 m - 113 m.	28th day compressive strength	296.75	Kg/Cm ²	265.00 Kg/Cm ²	9.70	Represents Qty. 15.00 Cum.
			283.16	Kg/Cm ²			
			292.22	Kg/Cm ²			
		Average	290.71	Kg/Cm²			
8	Reinforced Cement concrete cube of mix 1:1.5:3 , cast on 23/04/2020, for floor of barrage from ch. 88 m - 113 m.	28th day compressive strength	271.83	Kg/Cm ²	265.00 Kg/Cm ²	4.57	--- do ---
			276.36	Kg/Cm ²			
			283.16	Kg/Cm ²			
		Average	277.12	Kg/Cm²			
9	Reinforced Cement concrete cube of mix 1:1.5:3 , cast on 23/04/2020, for floor of barrage from ch. 88 m - 113 m.	28th day compressive strength	278.63	Kg/Cm ²	265.00 Kg/Cm ²	5.14	--- do ---
			269.57	Kg/Cm ²			
			287.69	Kg/Cm ²			
		Average	278.63	Kg/Cm²			
10	Reinforced Cement concrete cube of mix 1:1.5:3 , cast on 23/04/2020, for floor of barrage from ch. 88 m - 113 m.	28th day compressive strength	292.22	Kg/Cm ²	265.00 Kg/Cm ²	6.28	--- do ---
			280.89	Kg/Cm ²			
			271.83	Kg/Cm ²			
		Average	281.65	Kg/Cm²			
11	Reinforced Cement concrete cube of mix 1:1.5:3 , cast on 23/04/2020, for floor of barrage from ch. 88 m - 113 m.	28th day compressive strength	276.36	Kg/Cm ²	265.00 Kg/Cm ²	10.27	--- do ---
			292.22	Kg/Cm ²			
			308.08	Kg/Cm ²			
		Average	292.22	Kg/Cm²			
12	Reinforced Cement concrete cube of mix 1:1.5:3 , cast on 23/04/2020, for floor of barrage from ch. 88 m - 113 m.	28th day compressive strength	278.63	Kg/Cm ²	265.00 Kg/Cm ²	9.99	--- do ---
			301.28	Kg/Cm ²			
			294.48	Kg/Cm ²			
		Average	291.46	Kg/Cm²			
13	Reinforced Cement concrete cube of mix 1:1.5:3 , cast on 24/04/2020, for floor of barrage from ch. 88 m - 113 m.	28th day compressive strength	274.10	Kg/Cm ²	265.00 Kg/Cm ²	6.00	--- do ---
			285.42	Kg/Cm ²			
			283.16	Kg/Cm ²			
		Average	280.89	Kg/Cm²			
14	Reinforced Cement concrete cube of mix 1:1.5:3 , cast on 24/04/2020, for floor of barrage from ch. 88 m - 113 m.	28th day compressive strength	278.63	Kg/Cm ²	265.00 Kg/Cm ²	6.85	--- do ---
			289.95	Kg/Cm ²			
			280.89	Kg/Cm ²			
		Average	283.16	Kg/Cm²			
15	Reinforced Cement concrete cube of mix 1:1.5:3 , cast on 24/04/2020, for floor of barrage from ch. 88 m - 113 m.	28th day compressive strength	269.57	Kg/Cm ²	265.00 Kg/Cm ²	4.00	--- do ---
			280.89	Kg/Cm ²			
			276.36	Kg/Cm ²			
		Average	275.61	Kg/Cm²			
16	Reinforced Cement concrete cube of mix 1:1.5:3 , cast on 24/04/2020, for floor of barrage from ch. 88 m - 113 m.	28th day compressive strength	296.75	Kg/Cm ²	265.00 Kg/Cm ²	6.28	--- do ---
			278.63	Kg/Cm ²			
			269.57	Kg/Cm ²			
		Average	281.65	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	Reinforced Cement concrete cube of mix 1:1.5:3 , cast on 24/04/2020, for floor of barrage from ch. 88 m - 113 m.	28th day compressive strength	280.89	Kg/Cm ²	265.00 Kg/Cm ²	5.14	Represents Qty. 15.00 Cum.
			287.69	Kg/Cm ²			
			267.30	Kg/Cm ²			
		Average	278.63	Kg/Cm²			
18	Reinforced Cement concrete cube of mix 1:1.5:3 , cast on 24/04/2020, for floor of barrage from ch. 88 m - 113 m.	28th day compressive strength	278.63	Kg/Cm ²	265.00 Kg/Cm ²	10.56	--- do ---
			292.22	Kg/Cm ²			
			308.08	Kg/Cm ²			
		Average	292.97	Kg/Cm²			
19	Reinforced Cement concrete cube of mix 1:1.5:3 , cast on 24/04/2020, for floor of barrage from ch. 88 m - 113 m.	28th day compressive strength	296.75	Kg/Cm ²	265.00 Kg/Cm ²	9.42	--- do ---
			292.22	Kg/Cm ²			
			280.89	Kg/Cm ²			
		Average	289.95	Kg/Cm²			
20	Reinforced Cement concrete cube of mix 1:1.5:3 , cast on 24/04/2020, for floor of barrage from ch. 88 m - 113 m.	28th day compressive strength	285.42	Kg/Cm ²	265.00 Kg/Cm ²	11.13	--- do ---
			305.81	Kg/Cm ²			
			292.22	Kg/Cm ²			
		Average	294.48	Kg/Cm²			
21	Reinforced Cement concrete cube of mix 1:1.5:3 , cast on 24/04/2020, for floor of barrage from ch. 88 m - 113 m.	28th day compressive strength	292.22	Kg/Cm ²	265.00 Kg/Cm ²	6.57	--- do ---
			283.16	Kg/Cm ²			
			271.83	Kg/Cm ²			
		Average	282.40	Kg/Cm²			
22	Reinforced Cement concrete cube of mix 1:1.5:3 , cast on 24/04/2020, for floor of barrage from ch. 88 m - 113 m.	28th day compressive strength	289.95	Kg/Cm ²	265.00 Kg/Cm ²	6.28	--- do ---
			278.63	Kg/Cm ²			
			276.36	Kg/Cm ²			
		Average	281.65	Kg/Cm²			
23	Reinforced Cement concrete cube of mix 1:1.5:3 , cast on 24/04/2020, for floor of barrage from ch. 88 m - 113 m.	28th day compressive strength	271.83	Kg/Cm ²	265.00 Kg/Cm ²	6.28	--- do ---
			283.16	Kg/Cm ²			
			289.95	Kg/Cm ²			
		Average	281.65	Kg/Cm²			
24	Reinforced Cement concrete cube of mix 1:1.5:3 , cast on 24/04/2020, for floor of barrage from ch. 88 m - 113 m.	28th day compressive strength	283.16	Kg/Cm ²	265.00 Kg/Cm ²	7.71	--- do ---
			292.22	Kg/Cm ²			
			280.89	Kg/Cm ²			
		Average	285.42	Kg/Cm²			
25	Reinforced Cement concrete cube of mix 1:1.5:3 , cast on 25/04/2020, for floor of barrage from ch. 88 m - 113 m.	28th day compressive strength	292.22	Kg/Cm ²	265.00 Kg/Cm ²	9.99	--- do ---
			305.81	Kg/Cm ²			
			276.36	Kg/Cm ²			
		Average	291.46	Kg/Cm²			

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SR.NO.	DISCRIPTION OF SAMPLE	TESTED FOR	RESULTS		Max./Min.Value permissible	% above or below	REMARK
26	Reinforced Cement concrete cube of mix 1:1.5:3 , cast on 25/04/2020, for floor of barrage from ch. 88 m - 113 m.	28th day compressive strength	283.16	Kg/Cm ²	265.00 Kg/Cm ²	8.56	Represents Qty. 15.00 Cum.
			294.48	Kg/Cm ²			
			285.42	Kg/Cm ²			
		Average	287.69	Kg/Cm²			
27	Reinforced Cement concrete cube of mix 1:1.5:3 , cast on 25/04/2020, for floor of barrage from ch. 88 m - 113 m.	28th day compressive strength	278.63	Kg/Cm ²	265.00 Kg/Cm ²	4.86	--- do ---
			283.16	Kg/Cm ²			
			271.83	Kg/Cm ²			
		Average	277.87	Kg/Cm²			
28	Reinforced Cement concrete cube of mix 1:1.5:3 , cast on 25/04/2020, for floor of barrage from ch. 88 m - 113 m.	28th day compressive strength	289.95	Kg/Cm ²	265.00 Kg/Cm ²	6.28	--- do ---
			274.10	Kg/Cm ²			
			280.89	Kg/Cm ²			
		Average	281.65	Kg/Cm²			
29	Reinforced Cement concrete cube of mix 1:1.5:3 , cast on 25/04/2020, for floor of barrage from ch. 88 m - 113 m.	28th day compressive strength	271.83	Kg/Cm ²	265.00 Kg/Cm ²	7.14	--- do ---
			280.89	Kg/Cm ²			
			299.01	Kg/Cm ²			
		Average	283.91	Kg/Cm²			
30	Reinforced Cement concrete cube of mix 1:1.5:3 , cast on 25/04/2020, for floor of barrage from ch. 88 m - 113 m.	28th day compressive strength	287.69	Kg/Cm ²	265.00 Kg/Cm ²	4.86	--- do ---
			278.63	Kg/Cm ²			
			267.30	Kg/Cm ²			
		Average	277.87	Kg/Cm²			
31	Reinforced Cement concrete cube of mix 1:1.5:3 , cast on 25/04/2020, for floor of barrage from ch. 88 m - 113 m.	28th day compressive strength	296.75	Kg/Cm ²	265.00 Kg/Cm ²	7.14	--- do ---
			283.16	Kg/Cm ²			
			271.83	Kg/Cm ²			
		Average	283.91	Kg/Cm²			
32	Reinforced Cement concrete cube of mix 1:1.5:3 , cast on 25/04/2020, for floor of barrage from ch. 88 m - 113 m.	28th day compressive strength	265.04	Kg/Cm ²	265.00 Kg/Cm ²	2.86	--- do ---
			271.83	Kg/Cm ²			
			280.89	Kg/Cm ²			
		Average	272.59	Kg/Cm²			
33	Reinforced Cement concrete cube of mix 1:1.5:3 , cast on 25/04/2020, for floor of barrage from ch. 88 m - 113 m.	28th day compressive strength	305.81	Kg/Cm ²	265.00 Kg/Cm ²	11.98	--- do ---
			289.95	Kg/Cm ²			
			294.48	Kg/Cm ²			
		Average	296.75	Kg/Cm²			

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SR.NO.	DISCRIPTION OF SAMPLE	TESTED FOR	RESULTS		Max./Min.Value permissable	% above or below	REMARK
34	Reinforced Cement concrete cube of mix 1:1.5:3 , cast on 25/04/2020, for floor of barrage from ch. 88 m - 113 m.	28th day compressive strength	292.22	Kg/Cm ²	265.00 Kg/Cm ²	8.85	Represents Qty. 15.00 Cum.
			283.16	Kg/Cm ²			
			289.95	Kg/Cm ²			
		Average	288.44	Kg/Cm²			
35	Reinforced Cement concrete cube of mix 1:1.5:3 , cast on 25/04/2020, for floor of barrage from ch. 88 m - 113 m.	28th day compressive strength	299.01	Kg/Cm ²	265.00 Kg/Cm ²	11.41	--- do ---
			305.81	Kg/Cm ²			
			280.89	Kg/Cm ²			
		Average	295.24	Kg/Cm²			
36	Reinforced Cement concrete cube of mix 1:1.5:3 , cast on 25/04/2020, for floor of barrage from ch. 88 m - 113 m.	28th day compressive strength	289.95	Kg/Cm ²	265.00 Kg/Cm ²	10.84	--- do ---
			283.16	Kg/Cm ²			
			308.08	Kg/Cm ²			
		Average	293.73	Kg/Cm²			

1. Copy to: 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.

Junior Engineer

Assistant Engineer