

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

Test Report No.: WRD/QC/F.6-2/Cube -T : 9651 To 9654,9677 To 9680,9706 To 9709,9749 To 9752,9758 To 9761,9770 To 9773, / Lab / **60** / 2020 - 21 Dated:- 19/ 06/ 2020
9796 To 9799,9836 To 9839,9873,9874,9922 To 9924,9940 To 9942,9960,9961,9990 & 9991 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. Part III : Construction of Bank protection wall for upstream of barrage at Ganjem.

Ref. to Requisition No.: MI/WDI/WRD/SDII /F.62/26/2019-20 Dated :- 21-05-2020

Qty. Recived. : 44 Sets of cubes Date of Receipt: -23 /05/2020. Tested on:- 26/05/2020 TO 14/06/2020 as per due dates. Ref to CPWD :2009, Vol. I

Sample: PCC 1 : 1.5 : 3 Mix O.S No. : 3696,3706,3718/SS,746/SP,3748,3754,3768,3796,3822,3855,3865,3882 & 3904/SS.

Lab. Sample No.: 8859 To 8902 Tested By: - Mr. S.M.Patri. A.E. & Mrs. S.B. Naik Shirodkar, J.E.

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SR.NO.	DISCRIPTION OF SAMPLE	TESTED FOR	RESULTS		Max./Min.Value permissible	% above or below	REMARK
1	Cement concrete cube of mix 1:1.5:3 , cast on 28/04/2020. PCC for wall IV- Ganjem U/s of P.H. LHS wall -bed. Ch. 0 to 85 mts.	28th day compressive strength	280.89	Kg/Cm ²	265.00 Kg/Cm ²	5.43	Represents Qty. 26.00 Cum.
			294.48	Kg/Cm ²			
			262.77	Kg/Cm ²			
			Average	279.38			
2	Cement concrete cube of mix 1:1.5:3 , cast on 28/04/2020. PCC for wall IV- Ganjem U/s of P.H. LHS wall -bed. Ch. 0 to 85 mts.	28th day compressive strength	283.16	Kg/Cm ²	265.00 Kg/Cm ²	8.56	Represents Qty. 29.00 Cum.
			299.01	Kg/Cm ²			
			280.89	Kg/Cm ²			
			Average	287.69			
3	Cement concrete cube of mix 1:1.5:3 , cast on 28/04/2020. PCC for wall IV- Ganjem U/s of P.H. LHS wall -bed. Ch. 0 to 85 mts.	28th day compressive strength	317.14	Kg/Cm ²	265.00 Kg/Cm ²	15.97	Represents Qty. 26.50 Cum.
			292.22	Kg/Cm ²			
			312.61	Kg/Cm ²			
			Average	307.32			
4	Cement concrete cube of mix 1:1.5:3 , cast on 28/04/2020. PCC for wall IV- Ganjem U/s of P.H. LHS wall -bed. Ch. 0 to 85 mts.	28th day compressive strength	305.81	Kg/Cm ²	265.00 Kg/Cm ²	15.12	Represents Qty. 27.00 Cum.
			285.42	Kg/Cm ²			
			323.93	Kg/Cm ²			
			Average	305.06			
5	Cement concrete cube of mix 1:1.5:3 , cast on 29/04/2020. PCC for wall IV- Ganjem U/s of P.H. LHS wall -bed. Ch. 0 to 85 mts.	28th day compressive strength	271.83	Kg/Cm ²	265.00 Kg/Cm ²	4.00	Represents Qty. 27.50 Cum.
			278.63	Kg/Cm ²			
			276.36	Kg/Cm ²			
			Average	275.61			
6	Cement concrete cube of mix 1:1.5:3 , cast on 29/04/2020. PCC for wall IV- Ganjem U/s of P.H. LHS wall -bed. Ch. 0 to 85 mts.	28th day compressive strength	283.16	Kg/Cm ²	265.00 Kg/Cm ²	6.00	Represents Qty. 28.00 Cum.
			267.30	Kg/Cm ²			
			292.22	Kg/Cm ²			
			Average	280.89			

Junior Engineer

Assistant Engineer

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SR.NO.	DISCRIPTION OF SAMPLE	TESTED FOR	RESULTS		Max./Min.Value permissable	% above or below	REMARK
7	Cement concrete cube of mix 1:1.5:3 , cast on 29/04/2020. PCC for wall IV- Ganjem U/s of P.H. LHS wall -bed. Ch. 0 to 85 mts.	28th day compressive strength	289.95	Kg/Cm ²	265.00 Kg/Cm ²	9.13	Represents Qty. 26.00 Cum.
			269.57	Kg/Cm ²			
			308.08	Kg/Cm ²			
			Average	289.20			
8	Cement concrete cube of mix 1:1.5:3 , cast on 29/04/2020. PCC for wall IV- Ganjem U/s of P.H. LHS wall -bed. Ch. 0 to 85 mts.	28th day compressive strength	294.48	Kg/Cm ²	265.00 Kg/Cm ²	9.99	Represents Qty. 25.50 Cum.
			303.55	Kg/Cm ²			
			276.36	Kg/Cm ²			
			Average	291.46			
9	Cement concrete cube of mix 1:1.5:3 , cast on 30/04/2020. PCC for wall IV- Ganjem U/s of P.H. LHS wall -bed. Ch. 0 to 85 mts.	28th day compressive strength	289.95	Kg/Cm ²	265.00 Kg/Cm ²	12.55	Represents Qty. 28.50 Cum.
			278.63	Kg/Cm ²			
			326.20	Kg/Cm ²			
			Average	298.26			
10	Cement concrete cube of mix 1:1.5:3 , cast on 30/04/2020. PCC for wall IV- Ganjem U/s of P.H. LHS wall -bed. Ch. 0 to 85 mts.	28th day compressive strength	294.48	Kg/Cm ²	265.00 Kg/Cm ²	12.27	Represents Qty. 27.00 Cum.
			308.08	Kg/Cm ²			
			289.95	Kg/Cm ²			
			Average	297.50			
11	Cement concrete cube of mix 1:1.5:3 , cast on 30/04/2020. PCC for wall IV- Ganjem U/s of P.H. LHS wall -bed. Ch. 0 to 85 mts.	28th day compressive strength	292.22	Kg/Cm ²	265.00 Kg/Cm ²	9.99	Represents Qty. 29.50 Cum.
			303.55	Kg/Cm ²			
			278.63	Kg/Cm ²			
			Average	291.46			
12	Cement concrete cube of mix 1:1.5:3 , cast on 30/04/2020. PCC for wall IV- Ganjem U/s of P.H. LHS wall -bed. Ch. 0 to 85 mts.	28th day compressive strength	317.14	Kg/Cm ²	265.00 Kg/Cm ²	11.70	Represents Qty. 25.50 Cum.
			299.01	Kg/Cm ²			
			271.83	Kg/Cm ²			
			Average	295.99			
13	Cement concrete cube of mix 1:1.5:3 , cast on 03/05/2020. PCC for wall IV- Ganjem U/s of P.H. LHS wall -Step -1. Ch. 0 to 85 mts.	28th day compressive strength	328.46	Kg/Cm ²	265.00 Kg/Cm ²	26.80	Represents Qty. 24.00 Cum.
			342.05	Kg/Cm ²			
			337.52	Kg/Cm ²			
			Average	336.01			
14	Cement concrete cube of mix 1:1.5:3 , cast on 03/05/2020. PCC for wall IV- Ganjem U/s of P.H. LHS wall -Step -1. Ch. 0 to 85 mts.	28th day compressive strength	323.93	Kg/Cm ²	265.00 Kg/Cm ²	20.53	Represents Qty. 26.00 Cum.
			344.32	Kg/Cm ²			
			289.95	Kg/Cm ²			
			Average	319.40			
15	Cement concrete cube of mix 1:1.5:3 , cast on 03/05/2020. PCC for wall IV- Ganjem U/s of P.H. LHS wall -Step -1. Ch. 0 to 85 mts.	28th day compressive strength	312.61	Kg/Cm ²	265.00 Kg/Cm ²	16.82	Represents Qty. 26.00 Cum.
			317.14	Kg/Cm ²			
			299.01	Kg/Cm ²			
			Average	309.59			
16	Cement concrete cube of mix 1:1.5:3 , cast on 03/05/2020. PCC for wall IV- Ganjem U/s of P.H. LHS wall -Step -1. Ch. 0 to 85 mts.	28th day compressive strength	328.46	Kg/Cm ²	265.00 Kg/Cm ²	11.41	Represents Qty. 25.00 Cum.
			271.83	Kg/Cm ²			
			285.42	Kg/Cm ²			
			Average	295.24			
17	Cement concrete cube of mix 1:1.5:3 , cast on 04/05/2020. PCC for wall IV- Ganjem U/s of P.H. LHS wall -Step -1. Ch. 0 to 85 mts.	28th day compressive strength	335.26	Kg/Cm ²	265.00 Kg/Cm ²	13.69	Represents Qty. 28.50 Cum.
			285.42	Kg/Cm ²			
			283.16	Kg/Cm ²			
			Average	301.28			

Junior Engineer

Assistant Engineer

SR.NO.	DISCRIPTION OF SAMPLE	TESTED FOR	RESULTS		Max./Min.Value permissible	% above or below	REMARK
18	Cement concrete cube of mix 1:1.5:3 , cast on 04/05/2020. PCC for wall IV- Ganjem U/s of P.H. LHS wall -Step -1. Ch. 0 to 85 mts.	28th day compressive strength	271.83	Kg/Cm ²	265.00 Kg/Cm ²	11.41	Represents Qty. 23.00 Cum.
			308.08	Kg/Cm ²			
			305.81	Kg/Cm ²			
			Average	295.24			
19	Cement concrete cube of mix 1:1.5:3 , cast on 04/05/2020. PCC for wall IV- Ganjem U/s of P.H. LHS wall -Step -1. Ch. 0 to 85 mts.	28th day compressive strength	280.89	Kg/Cm ²	265.00 Kg/Cm ²	5.43	Represents Qty. 25.00 Cum.
			294.48	Kg/Cm ²			
			262.77	Kg/Cm ²			
			Average	279.38			
20	Cement concrete cube of mix 1:1.5:3 , cast on 04/05/2020. PCC for wall IV- Ganjem U/s of P.H. LHS wall -Step -1. Ch. 0 to 85 mts.	28th day compressive strength	271.83	Kg/Cm ²	265.00 Kg/Cm ²	13.41	Represents Qty. 26.50 Cum.
			335.26	Kg/Cm ²			
			294.48	Kg/Cm ²			
			Average	300.52			
21	Cement concrete cube of mix 1:1.5:3 , cast on 05/05/2020. PCC for wall IV- Ganjem U/s of P.H. LHS wall -Step -1. Ch. 0 to 85 mts.	28th day compressive strength	280.89	Kg/Cm ²	265.00 Kg/Cm ²	7.71	Represents Qty. 19.00 Cum.
			292.22	Kg/Cm ²			
			283.16	Kg/Cm ²			
			Average	285.42			
22	Cement concrete cube of mix 1:1.5:3 , cast on 05/05/2020. PCC for wall IV- Ganjem U/s of P.H. LHS wall -Step -1. Ch. 0 to 85 mts.	28th day compressive strength	308.08	Kg/Cm ²	265.00 Kg/Cm ²	15.12	Represents Qty. 15.00 Cum.
			289.95	Kg/Cm ²			
			317.14	Kg/Cm ²			
			Average	305.06			
23	Cement concrete cube of mix 1:1.5:3 , cast on 05/05/2020. PCC for wall IV- Ganjem U/s of P.H. LHS wall -Step -1. Ch. 0 to 85 mts.	28th day compressive strength	303.55	Kg/Cm ²	265.00 Kg/Cm ²	13.69	Represents Qty. 23.00 Cum.
			305.81	Kg/Cm ²			
			294.48	Kg/Cm ²			
			Average	301.28			
24	Cement concrete cube of mix 1:1.5:3 , cast on 05/05/2020. PCC for wall IV- Ganjem U/s of P.H. LHS wall -Step -1. Ch. 0 to 85 mts.	28th day compressive strength	283.16	Kg/Cm ²	265.00 Kg/Cm ²	9.99	Represents Qty. 18.00 Cum.
			299.01	Kg/Cm ²			
			292.22	Kg/Cm ²			
			Average	291.46			
25	Cement concrete cube of mix 1:1.5:3 , cast on 06/05/2020. PCC for wall IV- Ganjem U/s of P.H. LHS wall -Step -2. Ch. 0 to 85 mts.	28th day compressive strength	292.22	Kg/Cm ²	265.00 Kg/Cm ²	7.14	Represents Qty. 19.00 Cum.
			280.89	Kg/Cm ²			
			278.63	Kg/Cm ²			
			Average	283.91			
26	Cement concrete cube of mix 1:1.5:3 , cast on 06/05/2020. PCC for wall IV- Ganjem U/s of P.H. LHS wall -Step -2. Ch. 0 to 85 mts.	28th day compressive strength	289.95	Kg/Cm ²	265.00 Kg/Cm ²	6.28	Represents Qty. 23.50 Cum.
			271.83	Kg/Cm ²			
			283.16	Kg/Cm ²			
			Average	281.65			
27	Cement concrete cube of mix 1:1.5:3 , cast on 06/05/2020. PCC for wall IV- Ganjem U/s of P.H. LHS wall -Step -2. Ch. 0 to 85 mts.	28th day compressive strength	262.77	Kg/Cm ²	265.00 Kg/Cm ²	5.71	Represents Qty. 26.00 Cum.
			301.28	Kg/Cm ²			
			276.36	Kg/Cm ²			
			Average	280.14			

Junior Engineer

Assistant Engineer

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SR.NO.	DISCRIPTION OF SAMPLE	TESTED FOR	RESULTS		Max./Min.Value permissable	% above or below	REMARK
28	Cement concrete cube of mix 1:1.5:3 , cast on 06/05/2020. PCC for wall IV- Ganjem U/s of P.H. LHS wall -Step -2. Ch. 0 to 85 mts.	28th day compressive strength	317.14	Kg/Cm ²	265.00 Kg/Cm ²	13.12	Represents Qty. 24.00 Cum.
			287.69	Kg/Cm ²			
			294.48	Kg/Cm ²			
		Average	299.77	Kg/Cm²			
29	Cement concrete cube of mix 1:1.5:3 , cast on 08/05/2020. PCC for wall IV- Ganjem U/s of P.H. LHS wall -Step -2. Ch. 0 to 85 mts.	28th day compressive strength	326.20	Kg/Cm ²	265.00 Kg/Cm ²	15.69	Represents Qty. 22.00 Cum.
			312.61	Kg/Cm ²			
			280.89	Kg/Cm ²			
		Average	306.57	Kg/Cm²			
30	Cement concrete cube of mix 1:1.5:3 , cast on 08/05/2020. PCC for wall IV- Ganjem U/s of P.H. LHS wall -Step -2. Ch. 0 to 85 mts.	28th day compressive strength	285.42	Kg/Cm ²	265.00 Kg/Cm ²	7.99	Represents Qty. 18.00 Cum.
			278.63	Kg/Cm ²			
			294.48	Kg/Cm ²			
		Average	286.18	Kg/Cm²			
31	Cement concrete cube of mix 1:1.5:3 , cast on 08/05/2020. PCC for wall IV- Ganjem U/s of P.H. LHS wall -Step -2. Ch. 0 to 85 mts.	28th day compressive strength	296.75	Kg/Cm ²	265.00 Kg/Cm ²	8.56	Represents Qty. 25.00 Cum.
			276.36	Kg/Cm ²			
			289.95	Kg/Cm ²			
		Average	287.69	Kg/Cm²			
32	Cement concrete cube of mix 1:1.5:3 , cast on 08/05/2020. PCC for wall IV- Ganjem U/s of P.H. LHS wall -Step -2. Ch. 0 to 85 mts.	28th day compressive strength	294.48	Kg/Cm ²	265.00 Kg/Cm ²	6.85	Represents Qty. 23.00 Cum.
			283.16	Kg/Cm ²			
			271.83	Kg/Cm ²			
		Average	283.16	Kg/Cm²			
33	Cement concrete cube of mix 1:1.5:3 , cast on 10/05/2020. PCC for wall IV- Ganjem U/s of P.H. LHS wall -Step -2. Ch. 0 to 85 mts.	28th day compressive strength	271.83	Kg/Cm ²	265.00 Kg/Cm ²	8.28	Represents Qty. 17.50 Cum.
			305.81	Kg/Cm ²			
			283.16	Kg/Cm ²			
		Average	286.93	Kg/Cm²			
34	Cement concrete cube of mix 1:1.5:3 , cast on 10/05/2020. PCC for wall IV- Ganjem U/s of P.H. LHS wall -Step -2. Ch. 0 to 85 mts.	28th day compressive strength	317.14	Kg/Cm ²	265.00 Kg/Cm ²	17.68	Represents Qty. 15.00 Cum.
			323.93	Kg/Cm ²			
			294.48	Kg/Cm ²			
		Average	311.85	Kg/Cm²			
35	Cement concrete cube of mix 1:1.5:3 , cast on 13/05/2020. PCC for wall IV- Ganjem U/s of P.H. LHS wall -Step -3. Ch. 0 to 85 mts.	28th day compressive strength	296.75	Kg/Cm ²	265.00 Kg/Cm ²	13.98	Represents Qty. 25.00 Cum.
			308.08	Kg/Cm ²			
			301.28	Kg/Cm ²			
		Average	302.03	Kg/Cm²			
36	Cement concrete cube of mix 1:1.5:3 , cast on 13/05/2020. PCC for wall IV- Ganjem U/s of P.H. LHS wall -Step -3. Ch. 0 to 85 mts.	28th day compressive strength	310.34	Kg/Cm ²	265.00 Kg/Cm ²	10.84	Represents Qty. 24.00 Cum.
			276.36	Kg/Cm ²			
			294.48	Kg/Cm ²			
		Average	293.73	Kg/Cm²			
37	Cement concrete cube of mix 1:1.5:3 , cast on 13/05/2020. PCC for wall IV- Ganjem U/s of P.H. LHS wall -Step -3. Ch. 0 to 85 mts.	28th day compressive strength	283.16	Kg/Cm ²	265.00 Kg/Cm ²	11.13	Represents Qty. 26.50 Cum.
			305.81	Kg/Cm ²			
			294.48	Kg/Cm ²			
		Average	294.48	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
38	Cement concrete cube of mix 1:1.5:3 , cast on 14/05/2020. PCC for wall IV- Ganjem U/s of P.H. LHS wall -Step -3. Ch. 0 to 85 mts.	28th day compressive strength	317.14	Kg/Cm ²	265.00 Kg/Cm ²	12.55	Represents Qty. 23.00 Cum.
			294.48	Kg/Cm ²			
			283.16	Kg/Cm ²			
		Average	298.26	Kg/Cm²			
39	Cement concrete cube of mix 1:1.5:3 , cast on 14/05/2020. PCC for wall IV- Ganjem U/s of P.H. LHS wall -Step -3. Ch. 0 to 85 mts.	28th day compressive strength	278.63	Kg/Cm ²	265.00 Kg/Cm ²	13.41	Represents Qty. 26.00 Cum.
			310.34	Kg/Cm ²			
			312.61	Kg/Cm ²			
		Average	300.52	Kg/Cm²			
40	Cement concrete cube of mix 1:1.5:3 , cast on 14/05/2020. PCC for wall IV- Ganjem U/s of P.H. LHS wall -Step -3. Ch. 0 to 85 mts.	28th day compressive strength	296.75	Kg/Cm ²	265.00 Kg/Cm ²	12.27	Represents Qty. 18.00 Cum.
			292.22	Kg/Cm ²			
			303.55	Kg/Cm ²			
		Average	297.50	Kg/Cm²			
41	Cement concrete cube of mix 1:1.5:3 , cast on 15/05/2020. PCC for wall IV- Ganjem U/s of P.H. LHS wall -Step -4. Ch. 0 to 85 mts.	28th day compressive strength	285.42	Kg/Cm ²	265.00 Kg/Cm ²	13.12	Represents Qty. 18.00 Cum.
			308.08	Kg/Cm ²			
			305.81	Kg/Cm ²			
		Average	299.77	Kg/Cm²			
42	Cement concrete cube of mix 1:1.5:3 , cast on 15/05/2020. PCC for wall IV- Ganjem U/s of P.H. LHS wall -Step -4. Ch. 0 to 85 mts.	28th day compressive strength	326.20	Kg/Cm ²	265.00 Kg/Cm ²	17.96	Represents Qty. 18.00 Cum.
			294.48	Kg/Cm ²			
			317.14	Kg/Cm ²			
		Average	312.61	Kg/Cm²			
43	Cement concrete cube of mix 1:1.5:3 , cast on 17/05/2020. PCC for wall IV- Ganjem U/s of P.H. LHS wall -parapet. Ch. 0 to 85 mts.	28th day compressive strength	321.67	Kg/Cm ²	265.00 Kg/Cm ²	15.12	Represents Qty. 13.00 Cum.
			289.95	Kg/Cm ²			
			303.55	Kg/Cm ²			
		Average	305.06	Kg/Cm²			
44	Cement concrete cube of mix 1:1.5:3 , cast on 17/05/2020. PCC for wall IV- Ganjem U/s of P.H. LHS wall -parapet. Ch. 0 to 85 mts.	28th day compressive strength	267.30	Kg/Cm ²	265.00 Kg/Cm ²	7.99	Represents Qty. 9.00 Cum.
			283.16	Kg/Cm ²			
			308.08	Kg/Cm ²			
		Average	286.18	Kg/Cm²			

1. Copy to: The Assistant Engineer SD II , WD VI , WRD , Valpoi, Sattari - 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