

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

Test Report No.: WRD/QC/F.6-2/Cube -T : 9390 To 9400, 9411 To 9416, 9418 To 9425,9434 To 9441,9456 To 9458./ Lab / **07** / 2020 - 21 Dated:- 16 / 04/ 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.215/2019-20/ **785** Dated :- 30-03-2020

Qty. Recived. : 36 Sets of cube Date of Receipt: -30/03/2020. Tested on:- 02/04/2020 To 14/04/2020 as per due dates. Ref to CPWD :2009, Vol. I

Sample: RCC 1 : 1.5 : 3 Mix O.S No. : 721,722,729,731,732,737,738,743/SP. Lab. Sample No.: 8520 To 8555 Tested By: - Mr. 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	Reinforced Cement concrete cube of mix <b>1:1.5:3</b> , cast on 05/03/2020. RCC for Pier P-1, forth lift.	28th day compressive strength	276.36	Kg/Cm <sup>2</sup>	265.00 Kg/Cm <sup>2</sup>	4.86	Represents Qty. 13.50 Cum.
			255.97	Kg/Cm <sup>2</sup>			
			301.28	Kg/Cm <sup>2</sup>			
		Average	<b>277.87</b>	<b>Kg/Cm<sup>2</sup></b>			
2	Reinforced Cement concrete cube of mix <b>1:1.5:3</b> , cast on 05/03/2020. RCC for Pier P-1, forth lift.	28th day compressive strength	305.81	Kg/Cm <sup>2</sup>	265.00 Kg/Cm <sup>2</sup>	7.42	Represents Qty. 13.50 Cum.
			287.69	Kg/Cm <sup>2</sup>			
			260.51	Kg/Cm <sup>2</sup>			
		Average	<b>284.67</b>	<b>Kg/Cm<sup>2</sup></b>			
3	Reinforced Cement concrete cube of mix <b>1:1.5:3</b> , cast on 05/03/2020. RCC for Pier P-2, forth lift.	28th day compressive strength	269.57	Kg/Cm <sup>2</sup>	265.00 Kg/Cm <sup>2</sup>	9.70	Represents Qty. 13.50 Cum.
			310.34	Kg/Cm <sup>2</sup>			
			292.22	Kg/Cm <sup>2</sup>			
		Average	<b>290.71</b>	<b>Kg/Cm<sup>2</sup></b>			
4	Reinforced Cement concrete cube of mix <b>1:1.5:3</b> , cast on 05/03/2020. RCC for Pier P-2, forth lift.	28th day compressive strength	251.44	Kg/Cm <sup>2</sup>	265.00 Kg/Cm <sup>2</sup>	5.43	Represents Qty. 13.50 Cum.
			303.55	Kg/Cm <sup>2</sup>			
			283.16	Kg/Cm <sup>2</sup>			
		Average	<b>279.38</b>	<b>Kg/Cm<sup>2</sup></b>			
5	Reinforced Cement concrete cube of mix <b>1:1.5:3</b> , cast on 05/03/2020. RCC for Pier P-3 , forth lift.	28th day compressive strength	265.04	Kg/Cm <sup>2</sup>	265.00 Kg/Cm <sup>2</sup>	8.56	Represents Qty. 13.50 Cum.
			287.69	Kg/Cm <sup>2</sup>			
			310.34	Kg/Cm <sup>2</sup>			
		Average	<b>287.69</b>	<b>Kg/Cm<sup>2</sup></b>			

Junior Engineer

Assistant Engineer

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SR.NO.	DISCRIPTION OF SAMPLE	TESTED FOR	RESULTS		Max./Min.Value permissible	% above or below	REMARK
6	Reinforced Cement concrete cube of mix <b>1:1.5:3</b> , cast on 05/03/2020. RCC for Pier P-3 , forth lift.	28th day compressive strength	271.83	Kg/Cm <sup>2</sup>	265.00 Kg/Cm <sup>2</sup>	8.85	Represents Qty. 13.50 Cum.
			294.48	Kg/Cm <sup>2</sup>			
			299.01	Kg/Cm <sup>2</sup>			
		Average	<b>288.44</b>	<b>Kg/Cm<sup>2</sup></b>			
7	Reinforced Cement concrete cube of mix <b>1:1.5:3</b> , cast on 06/03/2020. RCC for Pier P-4 , forth lift.	28th day compressive strength	289.95	Kg/Cm <sup>2</sup>	265.00 Kg/Cm <sup>2</sup>	7.99	Represents Qty. 13.50 Cum.
			283.16	Kg/Cm <sup>2</sup>			
			285.42	Kg/Cm <sup>2</sup>			
		Average	<b>286.18</b>	<b>Kg/Cm<sup>2</sup></b>			
8	Reinforced Cement concrete cube of mix <b>1:1.5:3</b> , cast on 06/03/2020. RCC for Pier P-4 , forth lift.	28th day compressive strength	287.69	Kg/Cm <sup>2</sup>	265.00 Kg/Cm <sup>2</sup>	8.85	Represents Qty. 13.50 Cum.
			301.28	Kg/Cm <sup>2</sup>			
			276.36	Kg/Cm <sup>2</sup>			
		Average	<b>288.44</b>	<b>Kg/Cm<sup>2</sup></b>			
9	Reinforced Cement concrete cube of mix <b>1:1.5:3</b> , cast on 06/03/2020. RCC for retaining wall on LHS, D/ s floor third lift.	28th day compressive strength	305.81	Kg/Cm <sup>2</sup>	265.00 Kg/Cm <sup>2</sup>	7.71	Represents Qty. 20.00 Cum.
			258.24	Kg/Cm <sup>2</sup>			
			292.22	Kg/Cm <sup>2</sup>			
		Average	<b>285.42</b>	<b>Kg/Cm<sup>2</sup></b>			
10	Reinforced Cement concrete cube of mix <b>1:1.5:3</b> , cast on 06/03/2020. RCC for retaining wall on LHS, D/ s floor third lift.	28th day compressive strength	262.77	Kg/Cm <sup>2</sup>	265.00 Kg/Cm <sup>2</sup>	6.85	Represents Qty. 20.00 Cum.
			289.95	Kg/Cm <sup>2</sup>			
			296.75	Kg/Cm <sup>2</sup>			
		Average	<b>283.16</b>	<b>Kg/Cm<sup>2</sup></b>			
11	Reinforced Cement concrete cube of mix <b>1:1.5:3</b> , cast on 06/03/2020. RCC for retaining wall on LHS, D/ s floor third lift.	28th day compressive strength	301.28	Kg/Cm <sup>2</sup>	265.00 Kg/Cm <sup>2</sup>	6.57	Represents Qty. 20.00 Cum.
			276.36	Kg/Cm <sup>2</sup>			
			269.57	Kg/Cm <sup>2</sup>			
		Average	<b>282.40</b>	<b>Kg/Cm<sup>2</sup></b>			
12	Reinforced Cement concrete cube of mix <b>1:1.5:3</b> , cast on 09/03/2020. RCC for Pier P-1 , fifth lift.	28th day compressive strength	285.42	Kg/Cm <sup>2</sup>	265.00 Kg/Cm <sup>2</sup>	10.84	Represents Qty. 13.50 Cum.
			289.95	Kg/Cm <sup>2</sup>			
			305.81	Kg/Cm <sup>2</sup>			
		Average	<b>293.73</b>	<b>Kg/Cm<sup>2</sup></b>			
13	Reinforced Cement concrete cube of mix <b>1:1.5:3</b> , cast on 09/03/2020. RCC for Pier P-1 , fifth lift.	28th day compressive strength	314.87	Kg/Cm <sup>2</sup>	265.00 Kg/Cm <sup>2</sup>	10.84	Represents Qty. 13.50 Cum.
			287.69	Kg/Cm <sup>2</sup>			
			278.63	Kg/Cm <sup>2</sup>			
		Average	<b>293.73</b>	<b>Kg/Cm<sup>2</sup></b>			

Junior Engineer

Assistant Engineer

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SR.NO.	DISCRIPTION OF SAMPLE	TESTED FOR	RESULTS		Max./Min.Value permissable	% above or below	REMARK
14	Reinforced Cement concrete cube of mix <b>1:1.5:3</b> , cast on 09/03/2020. RCC for Pier P-2 , fifth lift.	28th day compressive strength	310.34	Kg/Cm <sup>2</sup>	265.00 Kg/Cm <sup>2</sup>	8.85	Represents Qty. 13.50 Cum.
			283.16	Kg/Cm <sup>2</sup>			
			271.83	Kg/Cm <sup>2</sup>			
		Average	<b>288.44</b>	<b>Kg/Cm<sup>2</sup></b>			
15	Reinforced Cement concrete cube of mix <b>1:1.5:3</b> , cast on 09/03/2020. RCC for Pier P-2 , fifth lift.	28th day compressive strength	299.01	Kg/Cm <sup>2</sup>	265.00 Kg/Cm <sup>2</sup>	10.27	Represents Qty. 13.50 Cum.
			287.69	Kg/Cm <sup>2</sup>			
			289.95	Kg/Cm <sup>2</sup>			
		Average	<b>292.22</b>	<b>Kg/Cm<sup>2</sup></b>			
16	Reinforced Cement concrete cube of mix <b>1:1.5:3</b> , cast on 09/03/2020. RCC for Pier P-3 , fifth lift.	28th day compressive strength	289.95	Kg/Cm <sup>2</sup>	265.00 Kg/Cm <sup>2</sup>	8.85	Represents Qty. 13.50 Cum.
			280.89	Kg/Cm <sup>2</sup>			
			294.48	Kg/Cm <sup>2</sup>			
		Average	<b>288.44</b>	<b>Kg/Cm<sup>2</sup></b>			
17	Reinforced Cement concrete cube of mix <b>1:1.5:3</b> , cast on 09/03/2020. RCC for Pier P-3 , fifth lift.	28th day compressive strength	285.42	Kg/Cm <sup>2</sup>	265.00 Kg/Cm <sup>2</sup>	9.70	Represents Qty. 13.50 Cum.
			280.89	Kg/Cm <sup>2</sup>			
			305.81	Kg/Cm <sup>2</sup>			
		Average	<b>290.71</b>	<b>Kg/Cm<sup>2</sup></b>			
18	Reinforced Cement concrete cube of mix <b>1:1.5:3</b> , cast on 11/03/2020. RCC for Pier P-4 , fifth lift.	28th day compressive strength	255.97	Kg/Cm <sup>2</sup>	265.00 Kg/Cm <sup>2</sup>	4.29	Represents Qty. 13.50 Cum.
			296.75	Kg/Cm <sup>2</sup>			
			276.36	Kg/Cm <sup>2</sup>			
		Average	<b>276.36</b>	<b>Kg/Cm<sup>2</sup></b>			
19	Reinforced Cement concrete cube of mix <b>1:1.5:3</b> , cast on 11/03/2020. RCC for Pier P-4 , fifth lift.	28th day compressive strength	301.28	Kg/Cm <sup>2</sup>	265.00 Kg/Cm <sup>2</sup>	5.43	Represents Qty. 13.50 Cum.
			249.18	Kg/Cm <sup>2</sup>			
			287.69	Kg/Cm <sup>2</sup>			
		Average	<b>279.38</b>	<b>Kg/Cm<sup>2</sup></b>			
20	Reinforced Cement concrete cube of mix <b>1:1.5:3</b> , cast on 12/03/2020. RCC for Pier P-1 , Sixth lift.	28th day compressive strength	258.24	Kg/Cm <sup>2</sup>	265.00 Kg/Cm <sup>2</sup>	5.43	Represents Qty. 13.50 Cum.
			294.48	Kg/Cm <sup>2</sup>			
			285.42	Kg/Cm <sup>2</sup>			
		Average	<b>279.38</b>	<b>Kg/Cm<sup>2</sup></b>			
21	Reinforced Cement concrete cube of mix <b>1:1.5:3</b> , cast on 12/03/2020. RCC for Pier P-1 , Sixth lift.	28th day compressive strength	262.77	Kg/Cm <sup>2</sup>	265.00 Kg/Cm <sup>2</sup>	6.85	Represents Qty. 13.50 Cum.
			294.48	Kg/Cm <sup>2</sup>			
			292.22	Kg/Cm <sup>2</sup>			
		Average	<b>283.16</b>	<b>Kg/Cm<sup>2</sup></b>			

Junior Engineer

Assistant Engineer

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SR.NO.	DISCRIPTION OF SAMPLE	TESTED FOR	RESULTS		Max./Min.Value permissable	% above or below	REMARK
22	Reinforced Cement concrete cube of mix <b>1:1.5:3</b> , cast on 12/03/2020. RCC for Pier P-2 , Sixth lift.	28th day compressive strength	269.57	Kg/Cm <sup>2</sup>	265.00 Kg/Cm <sup>2</sup>	4.57	Represents Qty. 13.50 Cum.
			274.10	Kg/Cm <sup>2</sup>			
			287.69	Kg/Cm <sup>2</sup>			
			Average	<b>277.12</b>			
23	Reinforced Cement concrete cube of mix <b>1:1.5:3</b> , cast on 12/03/2020. RCC for Pier P-2 , Sixth lift.	28th day compressive strength	292.22	Kg/Cm <sup>2</sup>	265.00 Kg/Cm <sup>2</sup>	7.99	Represents Qty. 13.50 Cum.
			265.04	Kg/Cm <sup>2</sup>			
			301.28	Kg/Cm <sup>2</sup>			
			Average	<b>286.18</b>			
24	Reinforced Cement concrete cube of mix <b>1:1.5:3</b> , cast on 12/03/2020. RCC for Pier P-3 , Sixth lift.	28th day compressive strength	296.75	Kg/Cm <sup>2</sup>	265.00 Kg/Cm <sup>2</sup>	4.00	Represents Qty. 13.50 Cum.
			251.44	Kg/Cm <sup>2</sup>			
			278.63	Kg/Cm <sup>2</sup>			
			Average	<b>275.61</b>			
25	Reinforced Cement concrete cube of mix <b>1:1.5:3</b> , cast on 12/03/2020. RCC for Pier P-3 , Sixth lift.	28th day compressive strength	267.30	Kg/Cm <sup>2</sup>	265.00 Kg/Cm <sup>2</sup>	4.86	Represents Qty. 13.50 Cum.
			276.36	Kg/Cm <sup>2</sup>			
			289.95	Kg/Cm <sup>2</sup>			
			Average	<b>277.87</b>			
26	Reinforced Cement concrete cube of mix <b>1:1.5:3</b> , cast on 13/03/2020. RCC for Pier P-4 , Sixth lift.	28th day compressive strength	249.18	Kg/Cm <sup>2</sup>	265.00 Kg/Cm <sup>2</sup>	4.86	Represents Qty. 13.50 Cum.
			280.89	Kg/Cm <sup>2</sup>			
			303.55	Kg/Cm <sup>2</sup>			
			Average	<b>277.87</b>			
27	Reinforced Cement concrete cube of mix <b>1:1.5:3</b> , cast on 13/03/2020. RCC for Pier P-4 , Sixth lift.	28th day compressive strength	305.81	Kg/Cm <sup>2</sup>	265.00 Kg/Cm <sup>2</sup>	8.28	Represents Qty. 13.50 Cum.
			301.28	Kg/Cm <sup>2</sup>			
			253.71	Kg/Cm <sup>2</sup>			
			Average	<b>286.93</b>			
28	Reinforced Cement concrete cube of mix <b>1:1.5:3</b> , cast on 14/03/2020. RCC for Pier P-1 , Seventh lift.	28th day compressive strength	267.30	Kg/Cm <sup>2</sup>	265.00 Kg/Cm <sup>2</sup>	4.29	Represents Qty. 13.50 Cum.
			276.36	Kg/Cm <sup>2</sup>			
			285.42	Kg/Cm <sup>2</sup>			
			Average	<b>276.36</b>			
29	Reinforced Cement concrete cube of mix <b>1:1.5:3</b> , cast on 14/03/2020. RCC for Pier P-1 , Seventh lift.	28th day compressive strength	287.69	Kg/Cm <sup>2</sup>	265.00 Kg/Cm <sup>2</sup>	7.14	Represents Qty. 13.50 Cum.
			274.10	Kg/Cm <sup>2</sup>			
			289.95	Kg/Cm <sup>2</sup>			
			Average	<b>283.91</b>			
30	Reinforced Cement concrete cube of mix <b>1:1.5:3</b> , cast on 14/03/2020. RCC for Pier P-2 , Seventh lift.	28th day compressive strength	269.57	Kg/Cm <sup>2</sup>	265.00 Kg/Cm <sup>2</sup>	6.00	Represents Qty. 13.50 Cum.
			280.89	Kg/Cm <sup>2</sup>			
			292.22	Kg/Cm <sup>2</sup>			
			Average	<b>280.89</b>			

Junior Engineer

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SR.NO.	DISCRIPTION OF SAMPLE	TESTED FOR	RESULTS		Max./Min.Value permissible	% above or below	REMARK
31	Reinforced Cement concrete cube of mix <b>1:1.5:3</b> , cast on 14/03/2020. RCC for Pier P-2 , Seventh lift.	28th day compressive strength	267.30	Kg/Cm <sup>2</sup>	265.00 Kg/Cm <sup>2</sup>	6.57	Represents Qty. 13.50 Cum.
			278.63	Kg/Cm <sup>2</sup>			
			301.28	Kg/Cm <sup>2</sup>			
		Average	<b>282.40</b>	<b>Kg/Cm<sup>2</sup></b>			
32	Reinforced Cement concrete cube of mix <b>1:1.5:3</b> , cast on 14/03/2020. RCC for Pier P-3 , Seventh lift.	28th day compressive strength	299.01	Kg/Cm <sup>2</sup>	265.00 Kg/Cm <sup>2</sup>	10.84	Represents Qty. 13.50 Cum.
			319.40	Kg/Cm <sup>2</sup>			
			262.77	Kg/Cm <sup>2</sup>			
		Average	<b>293.73</b>	<b>Kg/Cm<sup>2</sup></b>			
33	Reinforced Cement concrete cube of mix <b>1:1.5:3</b> , cast on 14/03/2020. RCC for Pier P-3 , Seventh lift.	28th day compressive strength	317.14	Kg/Cm <sup>2</sup>	265.00 Kg/Cm <sup>2</sup>	9.42	Represents Qty. 13.50 Cum.
			299.01	Kg/Cm <sup>2</sup>			
			253.71	Kg/Cm <sup>2</sup>			
		Average	<b>289.95</b>	<b>Kg/Cm<sup>2</sup></b>			
34	Reinforced Cement concrete cube of mix <b>1:1.5:3</b> , cast on 17/03/2020. RCC for retaining wall on LHS, D/ s floor Forth lift.	28th day compressive strength	269.57	Kg/Cm <sup>2</sup>	265.00 Kg/Cm <sup>2</sup>	6.85	Represents Qty. 20.00 Cum.
			278.63	Kg/Cm <sup>2</sup>			
			301.28	Kg/Cm <sup>2</sup>			
		Average	<b>283.16</b>	<b>Kg/Cm<sup>2</sup></b>			
35	Reinforced Cement concrete cube of mix <b>1:1.5:3</b> , cast on 17/03/2020. RCC for retaining wall on LHS, D/ s floor Forth lift.	28th day compressive strength	303.55	Kg/Cm <sup>2</sup>	265.00 Kg/Cm <sup>2</sup>	4.86	Represents Qty. 20.00 Cum.
			276.36	Kg/Cm <sup>2</sup>			
			253.71	Kg/Cm <sup>2</sup>			
		Average	<b>277.87</b>	<b>Kg/Cm<sup>2</sup></b>			
36	Reinforced Cement concrete cube of mix <b>1:1.5:3</b> , cast on 17/03/2020. RCC for retaining wall on LHS, D/ s floor Forth lift.	28th day compressive strength	267.30	Kg/Cm <sup>2</sup>	265.00 Kg/Cm <sup>2</sup>	6.00	Represents Qty. 20.00 Cum.
			294.48	Kg/Cm <sup>2</sup>			
			280.89	Kg/Cm <sup>2</sup>			
		Average	<b>280.89</b>	<b>Kg/Cm<sup>2</sup></b>			

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