

GOVERNMENT OF GOA  
QUALITY CONTROL LABORATORY  
WATER RESOURCES DEPARTMENT

**Test Report No: WRD/QC/F.6-2/Cube -T : 5565 To 5569, 5572 To 5576, 5589 To 5593/Lab/234/2022 - 23 Dated:- 07/01/2023. Laboratory : Bicholim - Goa.**

**5602 To 5606, 5613 To 5617, 5621 To 5625, 5636 To 5640.**

**Sub Division V (QC)/WRD/ Bicholim- Goa.**

**Name of work : Construction of 10cm thick PCC lining for canal from ch. 15.000 km to ch. 18.000 km of LBMC of TIP in Thivim and Sircaim villages of Bardez Taluka.**

Ref. to Requisition No : S.D.II/W.D.VIII/W.R.D/F.154/2022-23/101 Dt.:- 28/12/2022

Qty. Recived. : 35 Sets of cube Date of Receipt:- 28/12/2022. Tested on: 28,29,31/12/2022 & 02,03,04,05/01/2023. as per due dates. Ref to CPWD :2009, Vol. I

Sample: Cube Mix **1:2:4** O.S No: 887,888,889,890,891,894,895,896,897,898,903,904,905,906,907/RK & 9598,9599,9600,9601,9602,9615,9616,9617,9618,9619,9626,9627,9628  
9629,9630,9637,9638,9639,9640,9641/SS Lab. Sample No: 5584 to 5618 Tested By: Mrs. S. B. Naik Shirodkar J.E. & Mrs. R.R. Kadam A.E.

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SR. NO	DISCRIPTION OF SAMPLE	TESTED FOR	RESULTS		Max./Min.Value permissable	% above or below	REMARK
1	Cement concrete cube of mix <b>1:2:4</b> , cast on 30/11/2022. for Relining ch.17.050 To ch. 17.157.	28 th day compressive strength	219.73	Kg/Cm <sup>2</sup>	210.00 Kg/cm <sup>2</sup>	4.27	Qty represents - 130.54 cum for Five sets of cube.
			210.67	Kg/Cm <sup>2</sup>			
			226.53	Kg/Cm <sup>2</sup>			
		<b>Average</b>	<b>218.98</b>	<b>Kg/Cm<sup>2</sup></b>			
2	Cement concrete cube of mix <b>1:2:4</b> , cast on 30/11/2022. for Relining ch.17.050 To ch. 17.157.	28 th day compressive strength	226.53	Kg/Cm <sup>2</sup>	210.00 Kg/cm <sup>2</sup>	5.35	---do--
			224.26	Kg/Cm <sup>2</sup>			
			212.93	Kg/Cm <sup>2</sup>			
		<b>Average</b>	<b>221.24</b>	<b>Kg/Cm<sup>2</sup></b>			
3	Cement concrete cube of mix <b>1:2:4</b> , cast on 30/11/2022. for Relining ch.17.050 To ch. 17.157.	28 th day compressive strength	208.40	Kg/Cm <sup>2</sup>	210.00 Kg/cm <sup>2</sup>	3.20	---do--
			224.26	Kg/Cm <sup>2</sup>			
			217.47	Kg/Cm <sup>2</sup>			
		<b>Average</b>	<b>216.71</b>	<b>Kg/Cm<sup>2</sup></b>			
4	Cement concrete cube of mix <b>1:2:4</b> , cast on 30/11/2022. for Relining ch.17.050 To ch. 17.157.	28 th day compressive strength	219.73	Kg/Cm <sup>2</sup>	210.00 Kg/cm <sup>2</sup>	7.15	---do--
			226.53	Kg/Cm <sup>2</sup>			
			228.79	Kg/Cm <sup>2</sup>			
		<b>Average</b>	<b>225.02</b>	<b>Kg/Cm<sup>2</sup></b>			

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<b>SR. NO</b>	<b>DISCRIPTION OF SAMPLE</b>	<b>TESTED FOR</b>	<b>RESULTS</b>		<b>Max./Min.Value permissable</b>	<b>% above or below</b>	<b>REMARK</b>
5	Cement concrete cube of mix <b>1:2:4</b> , cast on 30/11/2022. for Relining ch.17.050 To ch. 17.157.	28 th day compressive strength	233.32	Kg/Cm <sup>2</sup>	210.00 Kg/cm <sup>2</sup>	8.23	Qty represents - 130.54 cum for Five sets of cube.
			226.53	Kg/Cm <sup>2</sup>			
			222.00	Kg/Cm <sup>2</sup>			
			<b>Average</b>	<b>227.28</b>			
6	Cement concrete cube of mix <b>1:2:4</b> , cast on 01/12/2022. for Relining ch.17.157 To ch. 17.272.	28 th day compressive strength	260.51	Kg/Cm <sup>2</sup>	210.00 Kg/cm <sup>2</sup>	13.62	Qty represents - 140.00 cum for Five sets of cube.
			217.47	Kg/Cm <sup>2</sup>			
			237.85	Kg/Cm <sup>2</sup>			
			<b>Average</b>	<b>238.61</b>			
7	Cement concrete cube of mix <b>1:2:4</b> , cast on 01/12/2022. for Relining ch.17.157 To ch. 17.272.	28 th day compressive strength	224.26	Kg/Cm <sup>2</sup>	210.00 Kg/cm <sup>2</sup>	3.20	---do--
			208.40	Kg/Cm <sup>2</sup>			
			217.47	Kg/Cm <sup>2</sup>			
			<b>Average</b>	<b>216.71</b>			
8	Cement concrete cube of mix <b>1:2:4</b> , cast on 01/12/2022. for Relining ch.17.157 To ch. 17.272.	28 th day compressive strength	219.73	Kg/Cm <sup>2</sup>	210.00 Kg/cm <sup>2</sup>	2.48	---do--
			217.47	Kg/Cm <sup>2</sup>			
			208.40	Kg/Cm <sup>2</sup>			
			<b>Average</b>	<b>215.20</b>			
9	Cement concrete cube of mix <b>1:2:4</b> , cast on 01/12/2022. for Relining ch.17.157 To ch. 17.272.	28 th day compressive strength	226.53	Kg/Cm <sup>2</sup>	210.00 Kg/cm <sup>2</sup>	3.55	---do--
			215.20	Kg/Cm <sup>2</sup>			
			210.67	Kg/Cm <sup>2</sup>			
			<b>Average</b>	<b>217.47</b>			
10	Cement concrete cube of mix <b>1:2:4</b> , cast on 01/12/2022. for Relining ch.17.157 To ch. 17.272.	28 th day compressive strength	228.79	Kg/Cm <sup>2</sup>	210.00 Kg/cm <sup>2</sup>	6.43	---do--
			222.00	Kg/Cm <sup>2</sup>			
			219.73	Kg/Cm <sup>2</sup>			
			<b>Average</b>	<b>223.51</b>			
11	Cement concrete cube of mix <b>1:2:4</b> , cast on 03/12/2022. for Relining ch.17.272 To ch. 17.392.	28 th day compressive strength	217.47	Kg/Cm <sup>2</sup>	210.00 Kg/cm <sup>2</sup>	4.63	Qty represents - 146.40 cum for Five sets of cube.
			215.20	Kg/Cm <sup>2</sup>			
			226.53	Kg/Cm <sup>2</sup>			
			<b>Average</b>	<b>219.73</b>			
12	Cement concrete cube of mix <b>1:2:4</b> , cast on 03/12/2022. for Relining ch.17.272 To ch. 17.392.	28 th day compressive strength	249.18	Kg/Cm <sup>2</sup>	210.00 Kg/cm <sup>2</sup>	7.51	---do--
			210.67	Kg/Cm <sup>2</sup>			
			217.47	Kg/Cm <sup>2</sup>			
			<b>Average</b>	<b>225.77</b>			

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SR. NO	DISCRIPTION OF SAMPLE	TESTED FOR	RESULTS		Max./Min.Value permissable	% above or below	REMARK
13	Cement concrete cube of mix <b>1:2:4</b> , cast on 03/12/2022. for Relining ch.17.272 To ch. 17.392.	28 th day compressive strength	262.77	Ka/Cm <sup>2</sup>	210.00 Kg/cm <sup>2</sup>	16.86	Qty represents - 146.40 cum for Five sets of cube.
			246.91	Ka/Cm <sup>2</sup>			
			226.53	Ka/Cm <sup>2</sup>			
		<b>Average</b>	<b>245.40</b>	<b>Ka/Cm<sup>2</sup></b>			
14	Cement concrete cube of mix <b>1:2:4</b> , cast on 03/12/2022. for Relining ch.17.272 To ch. 17.392.	28 th day compressive strength	244.65	Ka/Cm <sup>2</sup>	210.00 Kg/cm <sup>2</sup>	8.95	---do--
			226.53	Ka/Cm <sup>2</sup>			
			215.20	Ka/Cm <sup>2</sup>			
		<b>Average</b>	<b>228.79</b>	<b>Ka/Cm<sup>2</sup></b>			
15	Cement concrete cube of mix <b>1:2:4</b> , cast on 03/12/2022. for Relining ch.17.272 To ch. 17.392.	28 th day compressive strength	219.73	Ka/Cm <sup>2</sup>	210.00 Kg/cm <sup>2</sup>	11.47	---do--
			237.85	Ka/Cm <sup>2</sup>			
			244.65	Ka/Cm <sup>2</sup>			
		<b>Average</b>	<b>234.08</b>	<b>Ka/Cm<sup>2</sup></b>			
16	Cement concrete cube of mix <b>1:2:4</b> , cast on 05/12/2022. for Relining ch.17.392 To ch. 17.509.	28 th day compressive strength	212.93	Ka/Cm <sup>2</sup>	210.00 Kg/cm <sup>2</sup>	5.71	Qty represents - 142.74 cum for Five sets of cube.
			219.73	Ka/Cm <sup>2</sup>			
			233.32	Ka/Cm <sup>2</sup>			
		<b>Average</b>	<b>222.00</b>	<b>Ka/Cm<sup>2</sup></b>			
17	Cement concrete cube of mix <b>1:2:4</b> , cast on 05/12/2022. for Relining ch.17.392 To ch. 17.509.	28 th day compressive strength	222.00	Ka/Cm <sup>2</sup>	210.00 Kg/cm <sup>2</sup>	4.27	---do--
			226.53	Ka/Cm <sup>2</sup>			
			208.40	Ka/Cm <sup>2</sup>			
		<b>Average</b>	<b>218.98</b>	<b>Ka/Cm<sup>2</sup></b>			
18	Cement concrete cube of mix <b>1:2:4</b> , cast on 05/12/2022. for Relining ch.17.392 To ch. 17.509.	28 th day compressive strength	210.67	Ka/Cm <sup>2</sup>	210.00 Kg/cm <sup>2</sup>	6.79	---do--
			224.26	Ka/Cm <sup>2</sup>			
			237.85	Ka/Cm <sup>2</sup>			
		<b>Average</b>	<b>224.26</b>	<b>Ka/Cm<sup>2</sup></b>			
19	Cement concrete cube of mix <b>1:2:4</b> , cast on 05/12/2022. for Relining ch.17.392 To ch. 17.509.	28 th day compressive strength	212.93	Ka/Cm <sup>2</sup>	210.00 Kg/cm <sup>2</sup>	3.91	---do--
			231.06	Ka/Cm <sup>2</sup>			
			210.67	Ka/Cm <sup>2</sup>			
		<b>Average</b>	<b>218.22</b>	<b>Ka/Cm<sup>2</sup></b>			
20	Cement concrete cube of mix <b>1:2:4</b> , cast on 05/12/2022. for Relining ch.17.392 To ch. 17.509.	28 th day compressive strength	226.53	Ka/Cm <sup>2</sup>	210.00 Kg/cm <sup>2</sup>	3.20	---do--
			212.93	Ka/Cm <sup>2</sup>			
			210.67	Ka/Cm <sup>2</sup>			
		<b>Average</b>	<b>216.71</b>	<b>Ka/Cm<sup>2</sup></b>			

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SR. NO	DISCRIPTION OF SAMPLE	TESTED FOR	RESULTS		Max./Min.Value permissable	% above or below	REMARK
21	Cement concrete cube of mix <b>1:2:4</b> , cast on 06/12/2022. for Relining ch.17.509 To ch. 17.635.	28 th day compressive strength	240.12	Kg/Cm <sup>2</sup>	210.00 Kg/cm <sup>2</sup>	12.18	Qty represents - 153.72 cum for Five sets of cube.
			249.18	Kg/Cm <sup>2</sup>			
			217.47	Kg/Cm <sup>2</sup>			
			<b>Average</b>	<b>235.59</b>			
22	Cement concrete cube of mix <b>1:2:4</b> , cast on 06/12/2022. for Relining ch.17.509 To ch. 17.635.	28 th day compressive strength	208.40	Kg/Cm <sup>2</sup>	210.00 Kg/cm <sup>2</sup>	3.91	---do--
			219.73	Kg/Cm <sup>2</sup>			
			226.53	Kg/Cm <sup>2</sup>			
			<b>Average</b>	<b>218.22</b>			
23	Cement concrete cube of mix <b>1:2:4</b> , cast on 06/12/2022. for Relining ch.17.509 To ch. 17.635.	28 th day compressive strength	231.06	Kg/Cm <sup>2</sup>	210.00 Kg/cm <sup>2</sup>	8.59	---do--
			226.53	Kg/Cm <sup>2</sup>			
			226.53	Kg/Cm <sup>2</sup>			
			<b>Average</b>	<b>228.04</b>			
24	Cement concrete cube of mix <b>1:2:4</b> , cast on 06/12/2022. for Relining ch.17.509 To ch. 17.635.	28 th day compressive strength	235.59	Kg/Cm <sup>2</sup>	210.00 Kg/cm <sup>2</sup>	8.23	---do--
			219.73	Kg/Cm <sup>2</sup>			
			226.53	Kg/Cm <sup>2</sup>			
			<b>Average</b>	<b>227.28</b>			
25	Cement concrete cube of mix <b>1:2:4</b> , cast on 06/12/2022. for Relining ch.17.509 To ch. 17.635.	28 th day compressive strength	240.12	Kg/Cm <sup>2</sup>	210.00 Kg/cm <sup>2</sup>	7.15	---do--
			226.53	Kg/Cm <sup>2</sup>			
			208.40	Kg/Cm <sup>2</sup>			
			<b>Average</b>	<b>225.02</b>			
26	Cement concrete cube of mix <b>1:2:4</b> , cast on 07/12/2022. for Relining ch.17.635 To ch. 17.761.	28 th day compressive strength	208.40	Kg/Cm <sup>2</sup>	210.00 Kg/cm <sup>2</sup>	3.20	Qty represents - 149.00 cum for Five sets of cube.
			231.06	Kg/Cm <sup>2</sup>			
			210.67	Kg/Cm <sup>2</sup>			
			<b>Average</b>	<b>216.71</b>			
27	Cement concrete cube of mix <b>1:2:4</b> , cast on 07/12/2022. for Relining ch.17.635 To ch. 17.761.	28 th day compressive strength	217.47	Kg/Cm <sup>2</sup>	210.00 Kg/cm <sup>2</sup>	5.35	---do--
			226.53	Kg/Cm <sup>2</sup>			
			219.73	Kg/Cm <sup>2</sup>			
			<b>Average</b>	<b>221.24</b>			
28	Cement concrete cube of mix <b>1:2:4</b> , cast on 07/12/2022. for Relining ch.17.635 To ch. 17.761.	28 th day compressive strength	226.53	Kg/Cm <sup>2</sup>	210.00 Kg/cm <sup>2</sup>	4.63	---do--
			208.40	Kg/Cm <sup>2</sup>			
			224.26	Kg/Cm <sup>2</sup>			
			<b>Average</b>	<b>219.73</b>			

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<b>SR. NO</b>	<b>DISCRIPTION OF SAMPLE</b>	<b>TESTED FOR</b>	<b>RESULTS</b>		<b>Max./Min.Value permissable</b>	<b>% above or below</b>	<b>REMARK</b>
29	Cement concrete cube of mix <b>1:2:4</b> , cast on 07/12/2022. for Relining ch.17.635 To ch. 17.761.	28 th day compressive strength	215.20	Kg/Cm <sup>2</sup>	210.00 Kg/cm <sup>2</sup>	4.27	Qty represents - 149.00 cum for Five sets of cube.
			237.85	Kg/Cm <sup>2</sup>			
			203.87	Kg/Cm <sup>2</sup>			
		<b>Average</b>	<b>218.98</b>	<b>Kg/Cm<sup>2</sup></b>			
30	Cement concrete cube of mix <b>1:2:4</b> , cast on 07/12/2022. for Relining ch.17.635 To ch. 17.761.	28 th day compressive strength	235.59	Kg/Cm <sup>2</sup>	210.00 Kg/cm <sup>2</sup>	9.31	---do--
			244.65	Kg/Cm <sup>2</sup>			
			208.40	Kg/Cm <sup>2</sup>			
		<b>Average</b>	<b>229.55</b>	<b>Kg/Cm<sup>2</sup></b>			
31	Cement concrete cube of mix <b>1:2:4</b> , cast on 08/12/2022. for Relining ch.17.761 To ch. 17.875.	28 th day compressive strength	217.47	Kg/Cm <sup>2</sup>	210.00 Kg/cm <sup>2</sup>	4.63	Qty represents - 143.00 cum for Five sets of cube.
			210.67	Kg/Cm <sup>2</sup>			
			231.06	Kg/Cm <sup>2</sup>			
		<b>Average</b>	<b>219.73</b>	<b>Kg/Cm<sup>2</sup></b>			
32	Cement concrete cube of mix <b>1:2:4</b> , cast on 08/12/2022. for Relining ch.17.761 To ch. 17.875.	28 th day compressive strength	226.53	Kg/Cm <sup>2</sup>	210.00 Kg/cm <sup>2</sup>	6.43	---do--
			235.59	Kg/Cm <sup>2</sup>			
			208.40	Kg/Cm <sup>2</sup>			
		<b>Average</b>	<b>223.51</b>	<b>Kg/Cm<sup>2</sup></b>			
33	Cement concrete cube of mix <b>1:2:4</b> , cast on 08/12/2022. for Relining ch.17.761 To ch. 17.875.	28 th day compressive strength	203.87	Kg/Cm <sup>2</sup>	210.00 Kg/cm <sup>2</sup>	2.48	---do--
			226.53	Kg/Cm <sup>2</sup>			
			215.20	Kg/Cm <sup>2</sup>			
		<b>Average</b>	<b>215.20</b>	<b>Kg/Cm<sup>2</sup></b>			
34	Cement concrete cube of mix <b>1:2:4</b> , cast on 08/12/2022. for Relining ch.17.761 To ch. 17.875.	28 th day compressive strength	217.47	Kg/Cm <sup>2</sup>	210.00 Kg/cm <sup>2</sup>	8.59	---do--
			235.59	Kg/Cm <sup>2</sup>			
			231.06	Kg/Cm <sup>2</sup>			
		<b>Average</b>	<b>228.04</b>	<b>Kg/Cm<sup>2</sup></b>			
35	Cement concrete cube of mix <b>1:2:4</b> , cast on 08/12/2022. for Relining ch.17.761 To ch. 17.875.	28 th day compressive strength	206.14	Kg/Cm <sup>2</sup>	210.00 Kg/cm <sup>2</sup>	3.91	---do--
			215.20	Kg/Cm <sup>2</sup>			
			233.32	Kg/Cm <sup>2</sup>			
		<b>Average</b>	<b>218.22</b>	<b>Kg/Cm<sup>2</sup></b>			

Copy to: 1. The Assistant Engineer , SD II , WD VIII, WRD, Thivim Bardez - Goa.

2. Copy submitted to The Superintending Engineer ,CPO,WRD, Sinchai Bhavan, Porvorim Goa for kind Information.
3. Copy submitted to The Executive Engineer , WD VIII, WRD, Karaswada Bardez - Goa.
4. QC Lab File.      5. Bill File.

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