

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

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**Test Report No.:** WRD/Q.C./F.6-4/ Aggr-T- 9410, 9411, 9412 & 9413, Sand-T-4900 & 4901, Cement-T-1096 /Lab/ **274** /2019-20 Dated:20/09/2019.

**Laboratory:** Bicholim

**Sub Div V/ (QC) / WRD / Bicholim**

**Sub:** Improvement to the RBMC of TIP by Providing 100 mm thick RCC lining from ch 0.00 kms to 6.020 km excluding Hassapur aquaduct and Kalna aquaduct between Ch 4.165 km to 4.227 km and 4.772 to 5.117 kms at village Ankane-Hassapur and Hali in Pernem Taluka.

**Ref to requisition No:** SD I/ WDVII / WRD/ F.353/19-20/96 Dated: 09/08/2019

**Qty. Received:** 1 bags each **Date of Receipt:** 16/09/2019 **Tested on:** 16 & 17/09/2019 **Ref to Specification:** CPWD 2002, Vol. I & IS: 4031, 1968

**Sample:** 20mm( 2Nos), 12mm size aggrt( 2Nos). Sand( 2Nos), Birla Shakti cement 43 grade **O.S. No. :** 1082/AF to 1088/AF **Lab. Sample No.:** 6767 TO 6773

**Tested by:** Mr. Anil R. Fadte , J.E.

**REPORT**

Sr. No.	Description of sample	Tested for	Results	Max. /Min. value permissible	Remarks
1.	<b><u>20 mm Size Aggregate:</u></b> ( L. S. No. 6767)	Particle size distribution:	It is single sized aggregate of 20 mm nominal size (Qty. rep.)		
2.	<b><u>12 mm Size Aggregate:</u></b> ( L. S. No. 6769)	Particle size distribution:	It is single sized aggregate of 12.5 mm nominal size. (Qty. rep.)		
<b><u>REMARK:</u> After blending 20 mm aggregate with 12 mm aggregates at the ratio of <u>1:2</u> by weight; it is satisfying the required criteria for graded aggregate of 20 mm nominal size.</b>					
3.	<b><u>20 mm Size Aggregate:</u></b> ( L. S. No. 6768)	Particle size distribution:	It is single sized aggregate of 20 mm nominal size (Qty. rep.)		
4.	<b><u>12 mm Size Aggregate:</u></b> ( L. S. No. 6770)	Particle size distribution:	It is not a single sized aggregate of 12.5 mm nominal size. (Qty. rep.)		

**REMARK: After blending 20 mm aggregate with 12 mm aggregates at the ratio of 1:2 by weight; it is satisfying the required criteria for graded aggregate of 20 mm nominal size**

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5. **Sand:** i) Silt & Clay by S.A. method : - 3.80% (Qty. rep.)  
 ( L. S. No. 6771 ) ii) Silt by sedimentation : - 4.65 %  
 iii) Fineness Modulus : - 2.41  
 iv) Grading Zone : - III

**REMARK: The observed results are within the permissible limits of the coarse sand.**

6. **Sand:** i) Silt & Clay by S.A. method : - 3.40% (Qty. rep.)  
 ( L.S.No.6772 ) ii) Silt by sedimentation : - 4.76 %  
 iii) Fineness Modulus : - 2.31  
 iv) Grading Zone : - III

**REMARK: The observed results are within the permissible limits of the coarse sand.**

7. **Cement:** ( L. S. No. 6773) i) Fineness of Cement : 1.18 % ----- (It should not be more than 10%)  
 Birla Shakti cement, bearing IS: 269 ii) Consistency of cement : 31.00% (It should be in the neighborhood of 35%)  
 Ordinary Portland cement, iii) Initial Setting Time : 120 minutes ---- (It should not be less than 30 minutes)  
 Manuf. date: Week 35, Month 08, Year'2019. iv) Final Setting Time : 290 minutes -- (It should not be more than 600 minutes)  
 CM/L =2318142  
 Qty. rep. To be used for – NOT SPECIFIED

**REMARK: The observed results are within the permissible limit for tested Ordinary Portland cement.**

- Copy to: 1. The Assistant Engineer, S. D. I, WD VII, WRD, Dhargal– Goa.  
 2. Submitted to The Superintending Engineer, CPO, WRD, Porvorim – Goa for kind information.  
 3. Submitted to The Executive Engineer, W.D. VII, WRD, Dhargal – Goa  
 4. Q.C. Lab file                      5. Bill File

Junior Engineer

Assistant Engineer