GOVERNMENT OF GOA
QUALITY CONTROL LABORATORY
WATER RESOURCES DFEPARTMENT

Test Report No.: WRD/Q.C./F.6-4/ Aggr-T- 9416, 9417, 9418 & 9419, Sand-T-4904,4905,4906 & 4907, Cement-T-1098 /Lab/ 276 /2019-20 Dated:28/09/2019.

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

Sub: Improvement to the RBMC of TIP from ch 6.020 kms to 12.400 km including providing RCC lining for the bottom critical portion between Ch 9.550 km to 9650 km, 9.650 to 9.950 kms & 10.050 to 10.465 kms. at village Chandel, Casarvarnem in Pernem Taluka.

Ref to requisition No: SD I/ WDVII / WRD/ F.354/19-20/138 Dated: 16/09/2019

Qty. Received: 1 bags each **Date of Receipt**: 18/09/2019 **Tested on**: 18/09/19 & 19/09/2019 **Ref to Specification:** CPWD 2002, Vol. I & IS: 4031, 1968

Sample: 20mm(2Nos), 12mm size aggrt(2Nos). Sand(2Nos),M. Sand(2Nos), Dalmia cement 43 grade **O.S. No. :**1093/AF to 1101/AF **Lab. Sample No**.: 6779 TO 6787

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

R E P O RT

Sr. No.	Description of sample	Tested for	Results	Max. /Min. value permissible	Remarks
1.	**20 mm Size Aggregate:** (L. S. No. 6779)	Particle size distribution:	It is single sized aggregate of 20 mm nominal size (Qty. rep.)		
2.	**12 mm Size Aggregate**: (L. S. No. 6781)	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.				
3.	**20 mm Size Aggregate:** (L. S. No. 6780)	Particle size distribution:	It is single sized aggregate of 20 mm nominal size (Qty. rep.)		
4.	**12 mm Size Aggregate**: (L. S. No. 6782)	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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Junior Engineer Assistant Engineer

5. **Sand:** (L. S. No. 6783)
i) Silt & Clay by S.A. method : - 3.80% (Qty. rep.)
ii) Silt by sedimentation : - 4.76 % .
iii) Fineness Modulus : - 2.58
iv) Grading Zone : - II

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

6. **Sand:** (L.S.No.6784)
i) Silt & Clay by S.A. method : - 4.60% (Qty. rep.)
ii) Silt by sedimentation : - 6.81 % .
iii) Fineness Modulus : - 2.75
iv) Grading Zone : - II

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

7. M. **Sand:** (L. S. No. 6785)
i) Silt & Clay by S.A. method : - 14.80% (Qty. rep.)
ii) Silt by sedimentation : - 14.00 % .
iii) Fineness Modulus : - 3.00
iv) Grading Zone : - I

REMARK: The observed results are within the permissible limits of the coarse sand. (As per the prescribed limits for deleterious materials – Crushed sand vide IS:383:2016, Clause 5.2.1-Table 2)

8. M. **Sand:** (L.S.No.6786)
i) Silt & Clay by S.A. method : - 13.60% (Qty. rep.)
ii) Silt by sedimentation : - 13.73 % .
iii) Fineness Modulus : - 2.98
iv) Grading Zone : - I

REMARK: The observed results are within the permissible limits of the coarse sand. (As per the prescribed limits for deleterious materials – Crushed sand vide IS:383:2016, Clause 5.2.1-Table 2)

9. **Cement:** (L. S. No. 6773)
J.K.super cement, bearing IS: 269
Ordinary Portland cement,
Manuf. date: Week 34, Month 09, Year'2019.
CM/L =0200022577
Qty. rep.– Not Specified To be used for:PCC 1:3:6 & RCC 1:1.5:3

i) Fineness of Cement : 1.39 % ---------- (It should not be more than 10%)
ii) Consistency of cement : 30.00% (It should be in the neighborhood of 35%)
iii) Initial Setting Time : 150 minutes ---- (It should not be less than 30 minutes)
iv) Final Setting Time : 270 minutes -- (It should not be more than 600 minutes)

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