

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

TEST REPORT No.: WRD/Q.C./F.6-4/AGGR-T-9586 & 9587, SAND-T: 5004 & 5005, /LAB/ 491 /2019-20 DT:16/ 03//2020 Laboratory: Bicholim
CEMENT-T-1153 Sub Div: V (QC)/WRD/Bicholim Goa.

Sub: Construction of Barrage and up gradation of Raw Water Pumping Station at Ganjem on Madei River for Augmentation of Raw Water for Opa water works.

Part II Up gradation of pump house including supply and installation of pumps ,motors, Control panel and substation, P/L 1000 mm D.I.Pipe Gravity Main.

Ref to requisition No: SDI/WDVI/WRD /F.216/2019-20/730 Dated: 02-03-2020

Qty. Received: 1 bags each **Date of Receipt:** 06/03/2020 **Tested on:** 09,10 & 11/03/2020 **Ref to Specification:** CPWD 2009, Vol. I&IS: 4031-4-1968

Sample: 20mm, 12.50 mm size aggrt, M.Sand, **O.S. No.** 3426,3427,3429,3452 & 3406 /SS **Lab. Sample No.** 8349 TO 8353 **Tested by:** Mrs. S.B. Naik Shirodkar, JE.
Coarse sand, J.K. cement, **REPORT 01 OF 01**

Sr. No.	Description of sample	Tested for	Results	Max. /Min. value permissible	Remarks
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1.	20 mm Size Aggregate:	Particle size distribution:	It is single sized aggregate of 20 mm nominal size.	(Qty. rep. – m ³)	
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2.	12.5 mm Size Aggregate:	Particle size distribution:	It is not single sized aggregate of 12.5 mm nominal size.	(Qty. rep. – m ³)	
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REMARK: After blending 20 mm aggregate with 12.5 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.	Coarse Sand:	i) Silt & Clay by S.A. method	:- 4.20%		
		ii) Silt by sedimentation	:- 5.31%		
		iii) Fineness Modulus	:- 2.59		
		iv) Grading Zone	:- II		

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

4.	M. Sand:	i) Silt & Clay by S.A. method	:- 10.60%	(Limit of Deleterious material is 15.00% for crushed sand)	
		ii) Silt by sedimentation	:- 12.50%		
		iii) Fineness Modulus	:- 2.916		
		iv) Grading Zone	:- I		

REMARK: The observed results are within the permissible limits for crushed sand (Fine Aggregate) vide table 2 of IS 383: 2016(Clause 5.2.1).

5.	Cement:	i) Fineness of Cement	: 1.06%	----- (It should not be more than 10%)	
	J.K. cement , bearing IS:269	ii) Consistency of cement	: 31.50%	(It should be in the neighborhood of 35%)	
	CM/L = 0003401033 Qty. rep. –bags	iii) Initial Setting Time	: 150 minutes	---- (It should not be less than 30 minutes)	
	Manuf. date: Week 06, Month 02, Year'2020.	iv) Final Setting Time	: 275 minutes	-- (It should not be more than 600 minutes)	

To be used for – NOT SPECIFIED.

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

- Copy to:
1. The Assistant Engineer, SDI, WDVI, WRD, Bicholim- Goa.
 2. Copy Submitted to The Superintending Engineer, CPO, WRD, Porvorim – Goa for kind information.
 3. Copy Submitted to The Executive Engineer, W.D.VI, WRD, Bicholim – Goa.
 4. Q.C. Lab file
 5. Bill File

Junior Engineer

Assistant Engineer