

2077
22.01.2023

REGIONAL LABORATORY

R.W.D , MUZAFFARPUR

PHYSICAL & GRADATION TEST OF..... WBM Gr. III

Name of Work :- Sargand Pupri Road to Musahari Tola Sargand West under Sargand Block under M M GSY.

Name of Division:- R.W.D Works Division..... Pupri.

Name Of Agency:- Sushil Kumar Jha.

Date Of Collection/Receipt 18.01.20

Agreement No:- 30 SBD/2019-20

Date Of Test:- 22.01.20

Ref..... A.E.R.W.D Works Sub Div. Sargand LT.NO. 0/ Enclosure / DT. 09.12.19

PHYSICAL TEST

SL.NO	A.I.V		WATER ABSORPTION		REMARKS
	TEST VALUE%	REQUIRED LIMIT%	TEST VALUE%	REQUIRED LIMIT%	
1.	21.14 %	40 %	0.769 %	3 %	Permissible.

GRADATION TEST

SL. NO	Sieve No MM	Weight Retained (KG)	% Wt of Retained	Cumulative % Retained	% of passing (KG)	Required limit%	Remarks
		CH. 340 M.					
		Wt. of Sample - 16.995 Kg.					
		" " Screening - 3.399 "					
		" " Stone Mch - 13.596 Kg					
	63	NIL	NIL	NIL	100	100	Permissible
	53	0.684	5.03	5.03	94.97	95-100	
	45	1.204	8.85	13.88	86.12	65-90	
	22.4	10.584	77.84	91.72	8.28	0-10	
	11.2	1.104	8.12	99.84	0.16	0-5	

Memo No..... 70 Date..... 22-1-2020

Copy To:- E.E.R.W.D Works Div..... Pupri.

[Signature]
22/01/20
A.E

[Signature]
22.01.2020
E.E

LA

कार्यपालक अभियन्ता



MS TEST HOUSE

.....Substantial Testing for Quality Work

NABL ACCREDITED & ISO 9001:2015 CERTIFIED LABORATORY

(H.D. Office) Abhiyanta Nagar, Z-Sector Polt No.-09, Near R.J. Complex, Ashiana Nagar, Patna-800025

(B.R. Office) Raj Kumar Ganj, Near Poor Home, Darbhanga

Mobile no.: +91-900-6069-267, Email: - mstesthouse@gmail.com

TEST REPORT



Issued To:

Executive Engineer
R.W.D.Work Div.Pupri

Sample Description: C.C. (M-30)

Sample No : 01&02

Report No: MSTH-25121901724

Date of Casting: 27.11.2019

Date of Receipt: 25.12.2019

Agency: Sushil Kumar Jha

Date of Testing: 25.12.2019

Sub: Construction of Road and C.D.works with maintainence for Sursand
Pupri Road to Mushari Tola Sursand Paschim Under MMGSY.

Date of Report: 26.12.2019

Reff:, Date: 30.11.2019

Parameters	Units of Measurement	Test Results		Method of test
		Individual	Average	
Compressive Strength after 28 days	N/mm ²	35.4	35.1	IS: 516:1959
		34.6		
		35.2		

End of Report

MSTH

Sample as Received in the Lab By Agency.

M.S. Test House
Authorized Signatory



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TEST REPORT

Issued To:

Sushil Kumar Jha,
Dhaka, Motihari, East Champaran.

Description of Sample: Design Mix

Grade- M-30

Sub:- Mix Design of concrete for the construction of Road and CD works with Maintenance for Sursand Pupri Road to Mushari Tola Sursand Paschim under MMGSY.

Letter No.: Dated: 29.11.2019

Report No: MSTH-3011190967

Date of Receipt: 30.11.2019

Date of Testing: 30.11.19-28.12.19

Date of Report: 28.12.2019

Protocol: IS10262:2009, IS 456:2000

1.	Grade of Concrete	M-30
2.	Characteristic Strength at 28 Days, N/mm ²	30.0 N/mm ²
3.	Targeted Strength at 28 Days, N/mm ²	38.25 N/mm ²
4.	Degree of Quality Control	Good
5.	Exposure Condition	Moderate
6.	Slump required	(75-125) mm
7.	Maximum size of Aggregate	20 mm
8.	Type of Cement	PSC (Konark)
9.	Minimum Cement Content	320.0 Kg/m ³ (As per IS 456)
10.	Type of Admixture	Sikkament
11.	Source of Material	
(a)	Aggregate (10 mm & 20 mm)	Pakur
(b)	Fine Aggregate, (Sand)	Koilwar

Test data of ingredients of Cement

1.(i)	Compressive Strength of Cement at 3 Days, N/mm ²	22.8	N/mm ²
(ii)	Compressive Strength of Cement at 7 Days, N/mm ²	28.7	
(iii)	Compressive Strength of Cement at 28 Days, N/mm ²	41.6	

		Cement	Fine Aggregate	Coarse Aggregate		Admixture
				20 mm	10mm	
2.	Fineness, m ² /kg	240	-	-	-	-
3.	Setting Time, minute		-	-	-	-
(a)	Initial	140	-	-	-	-
(b)	Final	235	-	-	-	-
4.	Specific Gravity	3.15	2.63	2.73	2.69	1.14
5.	Bulk Density, g/cc	-	1.63	1.52	1.54	-
6.	Water Absorption, %	-	1.34	0.44	0.48	-
7.	Moisture Content, %	-	0.68	Nil	Nil	-
8.	Silt Content, % (by vol.)	-	4.2		-	-

M. S. Jha
Authorized Signatory



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TEST REPORT

9.	Sieve Analysis Material Passing Through IS Sieve	Fine Aggregate	Coarse Aggregate		Mix ratio of Coarse Aggregate
			20 mm	10 mm	60:40
	40 mm	100	100	100	100
	20 mm	100	97.3	100	98.4
	12.5 mm	100	-	100	-
	10 mm	100	19.6	91.4	42.3
	4.75 mm	96.3	2.4	12.7	6.5
	2.36 mm	92.7		2.3	-
	1.18 mm	80.6		-	-
	600 mm	71.4		-	-
	300 micron	22.5	-	-	-
	150 micron	7.9		-	-

10.	Gradation of Fine Aggregate	Zone-III
11.	Gradation of Coarse Aggregate	Graded
12.	Mix ratio of Coarse Aggregate	60:40
13.	Water cement, kg/m ³	0.48
14.	Cement content, kg/m ³	393.0
15.	Workability (Slump), mm	(80±5)
16.	Admixture	1%

17. Mixed Ratio of Ingredients by weight (For 1m³, M-30)

Trial	Cement	Fine Aggregate	Coarse Aggregate		Water, Ltr	Admixture Ltr
			20 mm	10 mm		1%
1	399	715	668	445	193	3.99
2	396	719	671	448	190	3.96
3	393	723	676	450	187	3.93

Quantity of material for one bag of Cement (50 kgs) is as follows:-

(a)	Cement	50.0 kg
(b)	Fine Aggregate	92.0 kg
(c)	Coarse Aggregate (20 mm)	85.8 kg
	Coarse Aggregate (10 mm)	57.2 kg
(d)	Water	24.0 ltr
(e)	Admixture	0.5 ltr





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TEST REPORT

A. Mix PROPERTIES FOR TRIAL- No- III

Cement	393.0 kg/m ³
Water	187.0 kg/m ³
Fine Aggregate	723.0 kg/m ³
Coarse Aggregate	1126.0 kg/m ³
Water/ Cement	0.48 kg/m ³

Ratio by wt

Cement	1.0
Fine Aggregate	1.84
Coarse Aggregate	2.86
Water/ Cement	0.48

Compressive Strength of the above mix concrete:-

DOC-30.11.2019			DOT-07.12.2019		
A	7 Days	Trial-1	25.8 N/mm ²		
		Trial-2	26.6 N/mm ²		
		Trial-3	24.7 N/mm ²		
DOC-30.11.2019			DOT-28.12.2019		Slump (mm)
B	28 Days	Trial-1	40.5 N/mm ²		collapse
		Trial-2	41.4 N/mm ²		79
		Trial-3	40.3 N/mm ²		64

Remarks: Trial -3 is recommended for the mix Proportion at the site for their workability and strength.

Authorized Signatory