

REGIONAL LABORATORY

R.W.D , MUZAFFARPUR

PHYSICAL & GRADATION TEST OF..... WBM Gr. III
 Name of Work :- Construction of Road from Bikau Mallik House Haripur to PMGSY
 Road Kakan in Choraut Block under MMGSY.

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

Name Of Agency:- Abhay Kumar.

Date Of Collection /Receipt 03.02.20

Agreement No:- 17 SBD/2019-20

Date Of Test:- 05.02.20

Ref..... A.E.R.W.D Works Sub Div. Choraut LT. NO. 0/Enclosure/..... DT. 08.12.2019.

PHYSICAL TEST

SL.NO	A.I.V		WATER ABSORPTION		REMARKS
	TEST VALUE%	REQUIRED LIMIT%	TEST VALUE%	REQUIRED LIMIT%	
1.	21.59%	40%	0.790%	3%	Permissible.

GRADATION TEST

SL. NO	Sieve No M M	Weight Retained (KG)	% Wt of Retained	Cumulative % Retained	% of passing (KG)	Required limit%	Remarks
		CH.	260 M.				
		Wt. of Sample -	17.330 Kg.				
		Wt. of Screening -	3.639 "				
		Wt. of Stone Metal -	13.691 Kg.				
	63	NIL	NIL	NIL	100	100	
	53	0.682	4.98	4.98	95.02	95-100	
	45	3.433	25.07	30.05	69.95	65-90	
	22	8.305	60.66	90.71	9.29	< 10	
	11.2	1.201	8.77	99.48	0.52	< 5	Permissible.

Memo No..... 165..... Date..... 7.2.2020

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

214 @ 12
05/02/20
LA

05/02/20
A.E

05.2.2020
E.E

कार्यपालका अभियन्ता
ग्रामीण कार्य विभाग
क्षेत्रीय प्रयोगशाला मुजफ्फरपुर.

2

GRADATION TEST OF G.S.B Gr. I

NAME OF WORK: Construction of Road from Bikau Mallik House Haripur to
PMGSY Road Kokan under mmsy in Chorant Block.

RECEIPT
DATE OF COLLECTION 03,02,20

DATE OF TEST 05.02.20

NAME OF AGENCY: - Abhay Kumar.

REF: Vide L.No-0/camp-pupri/Enclosure/08.12.19 of AE, Choraut.

[illegible]

165

Dt. _____

7.2.2020

COPY FORWARDED TO - EXECUTIVE ENGINEER
R.W.D., WORKS DIVISION

Pupri.

21/11/20
05/02/20

05/02/20

कार्यपालिका श्रीमन्महा
श्रीमान् महर्षि विद्या
श्रीमान् प्रभोः महात्मन् महापुत्रम्



MS TEST HOUSE

....Substantial Testing for Quality Work

NABL ACCREDITED & ISO 9001:2015 CERTIFIED LABORATORY
(H.D. Office) Abhlyanta Nagar, Z-Sector Polt No.-09, Near R.J. Complex, Ashlana 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:

Abhay Kumar
At-Sadaur, Mahuwa, Vaishali, Hajipur.

Description of Sample: Design Mix
Grade- M-30

Sub:- Mix Design of concrete for the construction of Road and CD Works
with Maintenance for Bikau Mallik House Haripur to PMGSY Road
Kokan Under MMGSY.

Ref.:1530/Pupri, Dated: 07.11.2019

Report No: MSTH-0811191565

Date of Receipt: 08.11.2019

Date of Testing: 09.11.19-07.12.19

Date of Report: 08.12.2019

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	OPC- 43 grade (Ultratech)
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	22.9	N/mm^2
(ii)	Compressive Strength of Cement at 7 Days, N/mm^2	28.5	
(iii)	Compressive Strength of Cement at 28 Days, N/mm^2	42.6	

		Cement	Fine Aggregate	Coarse Aggregate		Admixture
				20 mm	10mm	
2.	Fineness, m^2/kg	245	-	-	-	-
3.	Setting Time, minute	-	-	-	-	-
(a)	Initial	150	-	-	-	-
(b)	Final	235	-	-	-	-
4.	Specific Gravity	3.15	2.65	2.72	2.71	1.14
5.	Bulk Density, g/cc	-	1.64	1.52	1.52	-
6.	Water Absorption, %	-	1.33	0.42	0.43	-
7.	Moisture Content, %	-	0.67	Nil	Nil	-
8.	Silt Content, % (by vol.)	-	4.5	-	-	-

Authorized Signatory

- Sample as received in the Laboratory by Agency.
- Result listed refer only to the tested sample & applicable parameters. Endorsement of product is neither inferred nor implied.
- Sample will destroyed after one month from the date of issue of test certificates unless otherwise specified.
- Liability of Laboratory is limited to the invoiced amount only any dispute arising out of this report shall be subject of Bihar Jurisdiction only.
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(B.R. Office) Raj Kumar Ganj, Near Poor Home, Darbhanga
Mobile no.: +91-900-6069-267, Email: - mstesthouse@gmail.com

TEST REPORT

9.	Sieve Analysis Material Passing Through IS Sieve	Fine Aggregate	Coarse Aggregate		Mix ratio of Coarse Aggregate
			20 mm	10 mm	
	40 mm	100	100	100	60:40
	20 mm	100	97.3	100	100
	12.5 mm	100	-	100	98.4
	10 mm	100	19.6	91.4	-
	4.75 mm	97.6	2.4	12.7	42.3
	2.36 mm	92.8		2:3	6.5
	1.18 mm	80.3		-	-
	600 mm	67.9		-	-
	300 micron	22.4		-	-
	150 micron	8.2		-	-

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	0.47
14.	Cement content, kg/m ³	395.0
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	401	722	671	448	191	4.01
2	398	726	676	450	188	3.98
3	395	730	679	453	185	3.95

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

(a)	Cement	50.0 kg
(b)	Fine Aggregate	92.5 kg
(c)	Coarse Aggregate (20 mm)	86.0 kg
	Coarse Aggregate (10 mm)	57.4 kg
(d)	Water	23.5 ltr
(e)	Admixture	0.5 ltr


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TEST REPORT

A. Mix PROPORTIONS FOR TRIAL- No- III

Cement	395.0 kg/m ³
Water	185.0 kg/m ³
Fine Aggregate	730.0 kg/m ³
Coarse Aggregate	1132.0 kg/m ³
Water/ Cement	0.47 kg/m ³

Ratio by wt

Cement	1.0
Fine Aggregate	1.85
Coarse Aggregate	2.87
Water/ Cement	0.46

Compressive Strength of the above mix concrete:-

DOC-09.11.2019			DOT-16.11.2019		
A	7 Days	Trial-1	24.7 N/mm ²		
		Trial-2	26.3 N/mm ²		
		Trial-3	25.5 N/mm ²		
DOC-09.11.2019			DOT-07.12.2019		Slump (mm)
B	28 Days	Trial-1	39.5 N/mm ²		collapse
		Trial-2	40.7 N/mm ²		86
		Trial-3	41.3 N/mm ²		81

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


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