

R.W.D, MUZAFFARPUR

GRADATION TEST OF GSB Gr. I

Name of works:- Construction of Road from Narayanpur Bazar Main Road to Paiswan Tola under MMGSY under Purni Block.

Name of Division:-R.W.D , Works Division.....Pupri..... Date of Collection.....09.07.2020

Name of Agency :-.....Manoj..Kumar.....

Date of Test... 13.07.2020

Agreement No :- 45/SAD/2019-20

Package No:-...M.M.G.S.Y.....

Ref:-(PIU) A.E , R.W.D , Works Sub Div. Pupri.....LT. No:- 245/Enc. / Dt. 26.05.2020

[illegible]

Memo No:- 880 Date:- 13/07/2020

Copy forwarded to – Executive Engineer

R.W.D , Works Division ... Pupri:

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L.A

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13/07/20
A.E

E.E. 13.7.20
R.W.D

REGIONAL LABORATORY
MUZAFFARPUR

कार्यपालक अशिवन्द
सामाजिक कार्य विभाग
क्षेत्रीय प्रमुख

REGIONAL LABORATORY

R.W.D, MUZAFFARPUR

PHYSICAL & GRADATION TEST OF W.B.M. Gr. IIIName of Work: Construction of Road from Narayanpur Bazar Main Road to Paswan Tola under M.M.G.Sy under Pupri Block.Name of Division: R.W.D Works Division Pupri Date of Collection/ Receipt: 09.07.2020Name of Agency: Manoj Kumar Date of Test: 13.07.2020Agreement No: 45/SBP/2019-20 Package No: M.M.G.SyRef: (PIU) A.E, R.W.D, Works Sub Div Pupri LT No: 245/Enc. 1 DT 26.05.2020

PHYSICAL TEST

SL.NO	A.I.V		WATER ABSORPTION		REMARKS
	TEST VALUE %	REQUIRED LIMIT %	TEST VALUE %	REQUIRED LIMIT %	
1.	22.41 %	40 %	0.836 %	3 %	Permissible.

GRADATION TEST

SL.NO	Sieve No. mm	Weight Retained (KG)	% Wt. of Retained	Cumulative % Retained	% of passing (KG)	Required limit %	Remarks
		<u>CH - 100 M.</u>					
		<u>Wt. of Sample - 32.010 kg.</u>					
		<u>Wt. of Screening - 7.362 "</u>					
		<u>Wt. of Stone Metal = 24.648 kg.</u>					
	63	NIL	NIL	NIL	100	100	
	53	1.238	5.02	5.02	94.98	95-100	
	45	6.379	25.88	30.90	69.10	65-90	
	22.4	14.562	59.08	89.98	10.02	0-10	
	11.2	2.409	9.77	99.75	0.25	0-5	Permissible

Memo No: 880 Date: 13/07/2020Copy to: E.E, R.W.D, Works Div Pupri21/07/20
13/7/20
L.A13.07.20
A.E21/07/20
13.7.20
E.E
कार्यपालक अभियन्ता
ग्रामीण कार्य विभाग
क्षेत्रीय प्रयोगशाला, मुजफ्फरपुर

REGIONAL LABORATORY

R.W.D, MUZFFARPUR

TEST RESULT OF CONCRETE CUBE

Name of Work :- Cube Test for CCP-M30.
 Name of Road :- Narayanpur Bazar Main Road to Paswan Tola
under M M GSY under Pupri Block.
 Name of Division :- R.W.D Works Division Pupri Date of Collection/Receipt 09.07.2020
 Name of Agency :- Manoj Kumar Date of Test :- 13.07.2020
 Agreement No :- 45/SBD/2019-20 Package No :- M M GSY
 Ref:- (PIU) A.E R.W.D Works Sub Div Pupri LT No:- 245/Eng/DT.26.05.2020

SL. No	Test after 7 days			Test after 28 days CH. 400 M.		
Dt. of Concreting				26.05.20	26.05.20	26.05.20
Dt. Of Test				13.07.20	13.07.20	13.07.20
I D Mark				M ₁	M ₂	M ₃
Area C.M ²				225	225	225
Maximum Load KN				700.00	680.00	700.00
Crushing Strength Kg/CM ²				317.46	308.39	317.46
Remarks				— M30 —		

Remarks :- M30.

Memo No. 880 Date 13/07/2020

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24/07/20
L.A

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A.E

24/07/20
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 Muzaffarpur
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.....Substantial Testing for Quality Work

NABL ACCREDITED & ISO 9001:2015 CERTIFIED LABORATORY

(H.D. Office) Abhiyanta Nagar, Z-Sector Plot 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, 7903542027 Email: mstesthouse@gmail.com

TEST REPORT

Issued To:

Manoj Kumar

At-Po-Pupri, PS-Pupri, Dist-Sitamarhi

Description of Sample: Design Mix

Grade:- M-30

Sub: - Mix Design of concrete for the construction of Road and CD works with Maintenance for Narayanpur Bazar Main Road to Paswan Tola Under MMGSY

Report No: MSTH-19121901940

Date of Receipt: 19.12.2019

Date of Testing: 20.12.19-17.01.20

Date of Report: 18.01.2020

Ref.No.-, Dated: 18.12.2019

The method of concrete mix design consists of selection of optimum proportions of water, cement, fine & coarse aggregate and admixture of produce concrete of specified properties most economically. The proportion of concrete mix is obtained by experimentally evolved relationship between the factors in the choice of mix design. It provides reasonably accurate guide to arrive at optimum proportions of ingredients. The final mix proportions are obtained on the basis of trial mixes. The mix design has been carried out as per stipulation of India standards specification IS: 10262 guidelines keeping in view the recommended mix standard deviations and targeted mean strength. The Recommended mix proportions should be tested at site for their workability & strength before it is adopted.

1. Design Stipulations:		
A	Characteristic Compressive Strength of Concrete required in field after 28 days	30 N/mm ²
B	Target Strength at 28 days N/mm ²	38.25 N/mm ²
C	Maximum size of Aggregates	20 mm
D	Required Slump	100-120 mm
E	Degree of quality control	Medium
F	Type of Exposure	Moderate
2. Test Data For The Materials Used		
A	Type of Cement	OPC 43 Grade (UltraTech)
B	Consistency, %	30.2
C	Initial Setting Time (Minutes)	152
D	Final Setting Time(Minutes)	266
E	Compressive Strength (3 days) MPa	26.2
F	Compressive Strength (7 days) MPa	37.2
G	Compressive Strength (28 days) MPa	51.5
H	Specific Gravity	3.15
I	Minimum Cement Content	320 Kg/m ³
J	Specific Gravity of Admixture	1.08
K	Type of Admixture	Sikament

Authorized Signatory

① Sample as received in the Laboratory by Agency.

② Result listed refer only to the tested sample & applicable parameters. Endorsement of product is neither inferred nor implied.

③ Sample will be destroyed after one month from the date of issue of test certificates unless otherwise specified.

④ 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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TEST REPORT

3.	Source Of Material	
A	Coarse Aggregate (20mm & 10 mm)	Mirzachowki
B	Fine Aggregate (Sand)	Koilwar
4.	Specific Gravity	
A	Coarse Aggregate (20mm)	
B	Fine Aggregate	2.74
C	Impact Value, % Coarse Aggregate (20mm)	2.61
5.	Abrasion Value, %	14.5
A	Coarse Aggregate (20mm)	
6.	Water Absorption, %	21.2
A	Coarse Aggregate (20 mm)	
B	Fine Aggregate	0.32
7.	Free Moisture Content, %	1.26
A	Coarse Aggregate (20mm)	
8.	Bulk Density, Gm/Cc	Nil
A	Coarse Aggregate (20mm)	
B	Fine Aggregate	1.52
9.	Sieve Analysis	1.60
(i)	Coarse Aggregate:	
IS: Sieve Size (mm)	Analysis of Aggregate coarse fraction % finer (%)	As Per IS: 383 For Graded Aggregate Of Nominal Size
	20mm	10mm
40.0	100	100
20.0	98.2	100
12.5	-	100
10.0	10.8	92.6
4.75	1.5	12.2
2.36	-	2.2
(ii)	Fine Aggregate:	
IS : Sieve Size	Cumulative Percentage Passing	Cumulative percentage Finer as per IS: 383-2016 Zone-III
10.0 mm	100	100
4.75 mm	98.4	90-100
2.36 mm	90.7	85-100
1.18 mm	78.4	75-100
600 micron	65.6	60-79
300 micron	25.5	12-40
150 micron	9.3	0-10

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TEST REPORT

10. Determination Of Quantity Of Materials:

Water Cement ratio	0.40
Water:	175.0 Ltr./m ³
Sand content:	682 Kg/m ³
Coarse Aggregate:	1168 Kg/m ³
Cement Content:	440 Kg/m ³
Slump	110 mm

11. Ratio (By Weight)

Cement Content	Water	Fine Aggregate	Coarse Aggregate
1	0.40	1.55	2.65

Mix Proportion By Weight Are As Follows:

Mix Proportion By Weight Are As Follows:					
Cement Kg/m ³		Water Kg/m ³	Admixture (% by wt. of Cement), Kg/m ³ (0.9) %	Fine Aggregate Kg/m ³ (38%)	Total Coarse Aggregate (20mm) Kg/m ³ (62%)
Trial-1	450	185.0	4.05	666	1140
Trial-2	445	180.0	4.00	672	1151
Trial-3	440	175.0	3.96	682	1168

Mix Proportion By Weight Are As Follows:

Cement Kg/m ³	Water Kg/m ³	Admixture (% by wt. of Cement), Kg/m ³ (0.9)%	Fine Aggregate Kg/m ³ (38%)	Total Coarse Aggregate (20mm) Kg/m ³ (62%)
50	21.0	0.45	77.5	132.5

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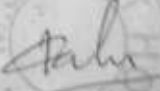
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12. A. Compressive Strength (7 Days)		DOC-20.12.2019	DOT-27.12.2019
S No.	Compressive Strength (N/mm ²)	Average Compressive Strength	
		(N/mm ²)	(Kg/cm ²)
1.	22.2	22.8	228
2.	23.5		
3.	22.8		
B. Compressive Strength (28 Days)		DOC-20.12.2019	DOT-17.01.2020
S No.	Compressive Strength (N/mm ²)	Average Compressive Strength	
		(N/mm ²)	(Kg/cm ²)
1.	40.8	40.2	402
2.	39.7		
3.	40.2		

Remarks: -

1. Trial-3 is recommended for the mix proportion at the Site for their Workability and Strength.
2. This mix design has been done at saturated condition.
3. Your material brought at site is dry or wet, than water can be decreased or increased according water Absorption.
4. Tap Water of our lab has been used, if water not supply, water should be pure and clean in concrete mix As Per IS: 456-2000 & IS: 3025
5. Admixture Used Sikament Brand.


Authorized Signatory