

REGIONAL LABORATORY
R.W.D, MUZAFFARPUR

PHYSICAL & GRADATION TEST OF W.B.M. Gr. III

Name of Work: Construction of Road from Md. Masim House to PMGSY Road
Sirsi in Nanpur Block under MMGSY (Gen)
Name of Division: R.W.D Works Division, Purni Date of Collection/ Receipt: 14.09.2020
Name of Agency: Ankeshwar Kumar Date of Test: 20.10.2020
Agreement No: 24/SBD/2020-21 Package No: MMGSY
Ref: (PIU) A.E., R.W.D, Works Sub Div Nanpur LT No: 0/Enclosure/DT 12.09.2020

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. mm	Weight Retained (KG)	% Wt. of Retained	Cumulative % Retained	% of passing (KG)	Required limit %	Remarks
		<u>CH — 50 M.</u>					
		<u>Wt. of Sample — 32.106 Kg.</u>					
		<u>Wt. of Screening — 6.903 "</u>					
		<u>Wt. of Stone Metal = 25.203 Kg.</u>					
	63	NIL	NIL	NIL	100	100	
	53	1.198	4.75	4.75	95.25	95-100	
	45	7.095	28.15	32.90	67.10	65-90	
	22.4	14.358	56.97	89.87	10.13	0-10	
	11.2	2.502	9.93	99.80	0.20	0-5	Permissible.

Memo No: 1426 Date: 10/10/20

Copy to: E.E., R.W.D, Works Div. Purni

21/10/20
L.A.

10/10/20
A.E.

10-10-20
E.E.
रजिस्ट्रार जनरल
राज्यीय कार्य विभाग
रजिस्ट्रार जनरल, मुजफ्फरपुर

REGIONAL LABORATORY

R.W.D, MUZFFARPUR

TEST RESULT OF CONCRETE CUBE

Name of Work :- Cube Test for CCP-M30.
 Name of Road :- Md. Mosim House to PMGSY Road Sirsi In Nanpur
Block under MMGSY (Gren)
 Name of Division :- R.W.D Works Division Pupri. Date of Collection/Receipt 14.09.20
 Name of Agency :- Ankeshwar Kumar. Date of Test :- 10.10.2020
 Agreement No. :- 24/SBD/2020-21 Package No :- MMGSY
 Ref. :- (PIU) A.E R.W.D Works Sub Div Nanpur LT No :- 0/Enc./DT 12.09.20

SL. No	Test after 7 days	Test after 28 days CH-50 M.		
Dt. of Concreting		12.09.20	12.09.20	12.09.20
Dt. Of Test		10.10.20	10.10.20	10.10.20
ID Mark		A ₁	A ₂	A 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. 1026 Date 10/10/20

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

10/10/20
LA

10/10/20
A.E

10/10/20
E.E
R.W.D
Regional Laboratory
Muzaffarpur



MS TEST HOUSE

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, Email: - mstesthouse@gmail.com

Page 1 of 4

TEST REPORT

Issued To:

Assistant Engineer
Rural Works Department
Sub Division - Nanpur

Description of Sample: Design Mix

Grade:- M-30

Sub:- Mix Design of concrete for the construction of Road From Md. Mosim
House to PMGSY Road Sirsi Under MMGSY.

Ref.No.-307, Dated- 11.08.2020

Report No: MSTH-120820905

Date of Receipt: 12.08.2020

Date of Testing: 13.08.20-10.09.20

Date of Report: 11.09.2020

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	75-100 mm
E	Degree of quality control	Medium
F	Type of Exposure	Moderate
2. Test Data For The Materials Used		
A	Type of Cement	Grade-OPC- 43 (Ultra tech)
B	Consistency, %	29.4
C	Initial Setting Time (Minutes)	166
D	Final Setting Time(Minutes)	240
E	Compressive Strength (3 days) MPa	27.6
F	Compressive Strength (7 days) MPa	37.6
G	Compressive Strength (28 days) MPa	49.7
H	Specific Gravity	3.15
I	Minimum Cement Content	320 Kg/m ³
J	Specific Gravity of Admixture	1.08
K	Type of Admixture	

Authorized Signatory
Kanwaleshwar Kumar
(Tech. Manager)

Sample as received in the Laboratory by Agency.
Result listed refer only to the tested sample & applicable parameters. Endorsement of product is neither intended nor implied.
Sample will be 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.
This Report is not to be reproduced wholly or in part and cannot be used as evidence in the court of law and should not be used in any advertising media without special permission in writing.



MS TEST HOUSE

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, Email: - mstesthouse@gmail.com

Page 2 of 4

TEST REPORT

3. Source Of Material			
A	Coarse Aggregate (20mm & 10 mm)		Pakur
B	Fine Aggregate (Sand)		Koilwar
4. Specific Gravity			
A	Coarse Aggregate (20mm)		2.75
B	Fine Aggregate		2.66
C	Impact Value, % Coarse Aggregate (20mm)		15.0
5. Abrasion Value, %			
A	Coarse Aggregate (20mm)		23.4
6. Water Absorption, %			
A	Coarse Aggregate (20 mm)		0.79
B	Fine Aggregate		1.15
7. Free Moisture Content, %			
A	Coarse Aggregate (20mm)		Nil
8. Bulk Density, Gm/Cc			
A	Coarse Aggregate (20mm)		1.52
B	Fine Aggregate		1.64
9. Sieve Analysis			
(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	62:38
40.0	100	100	100
20.0	95.8	100	97.4
12.5	-	100	-
10.0	11.1	90.7	41.3
4.75	2.1	10.9	5.4
2.36	-	1.4	-
(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	98.6		90-100
2.36 mm	92.4		85-100
1.18 mm	84.8		75-100
600 micron	65.7		60-79
300 micron	18.3		12-40
150 micron	8.0		0-10



Authorized Signatory
Kanwarshwar Kumar
(Tech. Manager)

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 be 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.
 This Report is not to be reproduced wholly or in part and cannot be used as evidence in the court of law and should not be used in any advertising media without special permission in writing.



MS TEST HOUSE

Substantial Testing for Quality Work

Page 3 of 4

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, Email: - mstesthouse@gmail.com

TEST REPORT

10. Determination Of Quantity Of Materials:					
Water Cement ratio		0.45			
Water:		185.0 Ltr./m ³			
Sand content:		689 Kg/m ³			
Coarse Aggregate:		1162 Kg/m ³			
Cement Content:		414 Kg/m ³			
Slump		100 mm			
11. Ratio (By Weight)					
Cement Content		Water	Fine Aggregate	Coarse Aggregate	
1		0.45	1.66	2.81	
Mix Proportion By Weight Are As Follows:					
Cement Kg/m ³		Water Kg/m ³	Admixture (% by wt. of Cement), Kg/m ³ (0.6) %	Fine Aggregate Kg/m ³ (38%)	Total Coarse Aggregate (20mm) Kg/m ³ (62%)
Trial-1	424	195.0	2.544	675	1139
Trial-2	419	190.0	2.514	682	1150
Trial-3	414	185.0	2.484	689	1162

Mix Proportion By Weight Are As Follows:				
Cement Kg/m ³	Water Kg/m ³	Admixture (% by wt. of Cement), Kg/m ³ (0.6)%	Fine Aggregate Kg/m ³ (38%)	Total Coarse Aggregate (20mm) Kg/m ³ (62%)
50	22.5	0.30	181.5	140.5



Authorized Signatory
Kanwarshwar Kumar
(Tech. Manager)

- 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.
- This Report is not to be reproduced wholly or in part and cannot be used as evidence in the court of law and should not be used in any advertising media without special permission in writing.



MS TEST HOUSE

Page 4 of 4

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, Email: - mstesthouse@gmail.com

TEST REPORT

12. A. Compressive Strength (7 Days)		DOC-13.08.2020	DOT-20.08.2020
S No.	Compressive Strength (N/mm ²)	Average Compressive Strength	
		(N/mm ²)	(Kg/cm ²)
1.	26.2	25.8	258
2.	25.7		
3.	25.4		
B. Compressive Strength (28 Days)		DOC-13.08.2020	DOT-10.09.2020
S No.	Compressive Strength (N/mm ²)	Average Compressive Strength	
		(N/mm ²)	(Kg/cm ²)
1.	39.8	40.8	408
2.	41.6		
3.	41.0		

Remarks: -

1. Trial-1 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
Kanwarshwar Kumar
(Tech. Manager)

- 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.
- This Report is not to be reproduced wholly or in part and cannot be used as evidence in the court of law and should not be used in any advertising media without special permission in writing.

