1

REGIONAL LABORATORY
R.W.D., MUZAFFARPUR

GRADATION TEST OF GSB Gr. I

NAME OF WORK:- Construction of Road from Majhaur Bahera Road to Harijan Tola under MMGSY under Pupri Block.

RECEIPT 09.03.2020

NAME OF DIVISION: - R.W.D. WORKS DIVISION Pupri. DATE OF ~~COLLECTION~~ _____

Agreement No. 57/SBD/2019-20.

NAME OF AGENCY:- Ashutosh Chandra. DATE OF TEST 13.03.2020

REF.:- Vide L.No. 180/Enclosure/14.02.20 of AE, RWD, WSD = Pupri.

Sl. No	Sieve No. m.m	Weight Retained (kg)	% Wt. of Retained	Cumulative % Retained (kg)	% of passing (kg)	Required Limit %	Remarks
1	2	3	4	5	6	7	8
			CH. 30 M.				
		Wt. of Sample – 16.526 kg.					
	75	NIL	NIL	NIL	100	100	
	26.5	6.148	37.20	37.20	62.80	55–75	Permissible.
	4.75	6.955	42.08	79.28	20.72	10–30	
	0.075	3.313	20.05	99.33	0.67	< 10	

MEMO NO 391 DL 13/3/2020

COPY FORWARDED TO – EXCUTIVE ENGINEER
R.W.D., WORKS DIVISION Pupri.

13/03/20
L.T.

13/3/20
A.E.

कार्यपालक अभियंता
E.E

REGIONAL LABORATORY

R.W.D , MUZAFFARPUR

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

Name of Work :- Construction of Road from Majhaur Bahera Road to Harij Tola under MMGSY.

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

Name Of Agency:- Ashutosh Chandra.

Agreement No:- 57/SBD/2019-20

Date Of Collection/Receipt 09.03.2020

Date Of Test:- 13.03.2020

Ref ..... A.E.R.W.D Works Sub Div. Pupri LT.NO. 180/Enclosure/ DT. 14.02.2020

PHYSICAL TEST

SL.NO	A.I.V		WATER ABSORPTION		REMARKES
	TEST VALUE%	REQUIRED LIMIT%	TEST VALUE%	REQUIRED LIMIT%	
1.	21.42%.	40%.	0.836%.	3%.	Permissible.

GRADARION TEST

Sl. NO	Sieve No M.M	Weight Retained (KG)	% Wt of Retained	Cumulative %Retained	% of passing (KG)	Required limit%	Remarks
			CH. 30 m.				
		Wt. of Sample - 14.800 Kg.					
		Wt. of Screening - 3.034 "					
		Wt. of Stone Metal = 11.766 Kg.					
	63	NIL	NIL	NIL	100	100	Permissible
	53	0.605	5.14	5.14	94.86	95-100	
	45	3.125	26.56	31.70	68.30	65-90	
	22.4	6.853	58.24	89.94	10.06	0-10	
	11.2	1.103	9.37	99.31	0.69	0-5	
	Pan	0.080					

Memo No. 391 Date 13/3/2020

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

13/03/20
L.A

13/3/20
A.E

13.3.2020
E.E
ग्रामीण कार्य विभाग

REGIONAL LABORATORY

R.W.D , MUZFFARPUR

TEST RESULT OF CONCRETE CUBE

Name of Work :- Cube Test for ccp - M30.

Name of Road :- Majhaur Bahera Road to Harijan Tola under MMGSY under Nanpur Block.

Name of Division :- R.W.D Works Division Pupri Date of Collection/Receipt 30.09.2020

Name of Agency :- Ashutosh Chandra Date of Test :- 01.10.2020

Agreement No:- 57/SBD/2019-20 Package No :- MMGSY

Ref:- (PIU) A.E R.W.D Works Sub Div. Nanpur LT No:- 293/Enc:/ DT 08.07.2020

SL. No	Test after 7 days			Test after 28 days CH. 50 M.		
Dt. of Concreting				23.06.20	23.06.20	23.06.20
Dt. Of Test				01.10.20	01.10.20	01.10.20
I D Mark				A_1	A_2	A_3
Area C.M^2				225	225	225
Maximum Load KN				700.00	680.00	690.00
Crushing Strength Kg/CM^2				317.46	308.39	312.92
Remarks					M30	

Remarks :- M30.

Memo No. 1054 Date 01/10/2020

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

01/10/20
LA

01/10/20
A.E

1.10.20
E.E
R.W.D
Regional Laboratory
Muzaffarpur

क्षेत्रीय प्रयोगशाला
ग्रामीण कार्य विभाग
क्षेत्रीय प्रयोगशाला, मुजफ्फरपुर

MS TEST HOUSE

.....Substantial Testing for Quality Work
NABL ACCREDITED & ISO 9001:2015 CERTIFIED LABORATORY
(H.O. 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:

Ashutosh Chandra
Vill+Po- Koily, Ps-Nanpur, 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 Majhaur Bahera Road to Harijan Tola Under MMGSY.
Letter No.:- Dated: 30.12.2019

Report No: MSTH-31121901919
Date of Receipt: 31.12.2019
Date of Testing: 31.12.19-28.01.20
Date of Report: 28.01.2020

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	OPC-43 Grade(Birlagold)
B	Consistency, %	30.0
C	Initial Setting Time (Minutes)	134
D	Final Setting Time(Minutes)	145
E	Compressive Strength (3 days) MPa	26.6
F	Compressive Strength (7 days) MPa	36.8
G	Compressive Strength (28 days) MPa	49.8
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
3.	**SOURCE OF MATERIAL**	
A	Aggregate (20mm & 10 mm)	Mirza Chowki
B	Fine Aggregate (Sand)	Koilwar

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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TEST REPORT

4.	**SPECIFIC GRAVITY**	
A	Coarse Aggregate (20mm)	2.68
B	Fine Aggregate	2.58
C	Impact Value, % Coarse Aggregate (20mm)	15.0
5.	**ABRASION VALUE, %**	
A	Coarse Aggregate (20mm)	23.8
6	**WATER ABSORPTION, %**	
A	Coarse Aggregate (20 mm)	0.34
B	Fine Aggregate	1.24
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	96.9	100	98.1
12.5	-	100	-
10.0	10.2	90.8	40.8
4.75	1.4	10.4	4.8
2.36	-	2.3	-

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TEST REPORT

(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	88.5	85-100
1.18 mm	81.7	75-100
600 micron	69.2	60-79
300 micron	22.8	12-40
150 micron	7.3	0-10

10.DETERMINATION OF QUANTITY OF MATERIALS:	
Water Cement ratio	0.45
Water:	183.0 Ltr./m^3
Sand content:	674 Kg/m^3
Coarse Aggregate:	1142 Kg/m^3
Cement Content:	407 Kg/m^3
Slump	100 mm

11. RATIO (BY WEIGHT)

Cement Content	Water	Fine Aggregate	Coarse Aggregate
1	0.45	1.66	2.80

MIX PROPORTION BY WEIGHT ARE AS FOLOWS:

	Cement Kg/m^3	Water Kg/m^3	Admixture (% by wt. of Cement), Kg/m^3 (0.8)%	Fine Aggregate Kg/m^3 (38%)	Total Coarse Aggregate (20mm) Kg/m^3 (62%)
Trial-1	419	193	3.35	660	1119
Trial-2	413	188	3.30	667	1130
Trial-3	407	183	3.26	674	1142

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Cement Kg/m^3	Water Kg/m^3	Admixture (% by wt. of Cement), Kg/m^3 (0.8)%	Fine Aggregate Kg/m^3 (38%)	Total Coarse Aggregate (20mm) Kg/m^3 (62%)
50	22.5	0.4	83.0.	140.0

12 A. COMPRESSIVE STRENGTH (7 DAYS)		DOC- 31.12.2019	DOT-07.01.2020
S No.	Compressive Strength (N/mm^2)	Average Compressive Strength (N/mm^2)	Average Compressive Strength (Kg/cm^2)
1.	24.8	25.3	253
2.	25.7		
3.	25.6		

B. COMPRESSIVE STRENGTH (28 DAYS)		DOC- 31.12.2019	DOT-28.01.2020
S No.	Compressive Strength (N/mm^2)	Average Compressive Strength (N/mm^2)	Average Compressive Strength (Kg/cm^2)
1.	32.4	32.9	329
2.	33.7		
3.	32.6		

Remarks: -

A. Trial-3 is recommended for the mix proportion at the Site for their Workability and Strength.

B. This mix design has been done at saturated condition

C. Your material brought at site is dry or wet, than water can be decreased or increased according to water Absorption

D. 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

E. Admixture used Sikament Brand

***

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