

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

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TEST REPORT

Issued To:

Executive Engineer
RWD, WD, Pupri

Description of Sample: Design Mix

Grade:- M-30

Sub: - Mix Design of concrete for the Construction of Harijan Tola Sanjoglal
Paswan's house to PMGSY Chaurath Path.

Ref.No.-, Dated: 22.09.2020

Report No: MSTH-2309201933

Date of Receipt: 23.09.2020

Date of Testing: 23.09.20-21.10.20

Date of Report: 22.10.2020

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	80-100 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 (Prism Champion)
B	Consistency, %	30.2
C	Initial Setting Time (Minutes)	150
D	Final Setting Time(Minutes).	265
E	Compressive Strength (3 days) MPa	27.4
F	Compressive Strength (7 days) MPa	36.6
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	
K	Type of Admixture	

Authorized Signatory
Kanwarashwar Kumar
(Tech. Manager)

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3. Source Of Material				
A	Coarse Aggregate (20mm & 10 mm)			Sheikhpura
B	Fine Aggregate (Sand)			Koilwar
4. Specific Gravity				
A	Coarse Aggregate (20mm)			2.69
B	Fine Aggregate			2.60
C	Impact Value, % Coarse Aggregate (20mm)			13.3
5. Abrasion Value, %				
A	Coarse Aggregate (20mm)			21.3
6 Water Absorption, %				
A	Coarse Aggregate (20 mm)			0.66
B	Fine Aggregate			1.19
7. Free Moisture Content, %				
A	Coarse Aggregate (20mm)			Nil
8. Bulk Density, Gm/Cc				
A	Coarse Aggregate (20mm)			1.50
B	Fine Aggregate			1.60
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	100
20.0	95.3	100	97.1	90-100
12.5	-	100	-	-
10.0	11.2	89.6	41.0	25-55
4.75	1.9	10.5	5.2	0-10
2.36	-	1.3	-	-
(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	97.7		90-100	
2.36 mm	91.2		85-100	
1.18 mm	79.3		75-100	
600 micron	69.4		60-79	
300 micron	21.6		12-40	
150 micron	7.8		0-10	



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10. Determination Of Quantity Of Materials:

Water Cement ratio	0.43
Water:	180.0 Ltr./m ³
Sand content:	674 Kg/m ³
Coarse Aggregate:	1138 Kg/m ³
Cement Content:	422 Kg/m ³
Slump	110 mm

11. Ratio (By Weight)

Cement Content	Water	Fine Aggregate	Coarse Aggregate
1	0.43	1.60	2.70

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	434	190.0	3.906	661	1115
Trial-2	428	185.0	3.852	667	1127
Trial-3	422	180.0	3.798	674	1138

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	21.5	0.45	80.0	135.0



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12. A. Compressive Strength (7 Days)		DOC-23.09.2020	DOT-30.09.2020
S No.	Compressive Strength (N/mm ²)	Average Compressive Strength	
		(N/mm ²)	(Kg/cm ²)
1.	22.9	23.4	234
2.	23.2		
3.	24.1		
B. Compressive Strength (28 Days)		DOC-23.09.2020	DOT-21.10.2020
S No.	Compressive Strength (N/mm ²)	Average Compressive Strength	
		(N/mm ²)	(Kg/cm ²)
1.	39.7	39.5	395
2.	38.6		
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 is Used.



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Issued To:

Executive Engineer
RWD, WD, Pupri

Description of Sample: Granular Sub Base (G.S.B)

Sub: Construction of Harijan Tola Sanjoglal Paswan's house to
PMGSY Chaurath Path

Ref. No., Dated: 18.09.2020

Report No: MSTH-180920517

Date of Receipt: 18.09.2020

Date of Testing: 18.09.20-20.09.20

Date of Report: 21.09.2020

SL no.	Test	Result	Test Method	Requirement as per MoRTH Table-400.1,2 GR-I
1.	IS Sieve (mm) Gradation,% passing			
a.	75.00	100.00	IS 2386(P-1)1963	100
b.	53.00	92.5		80-100
c.	26.50	76.8		55-90
d.	9.50	55.4		35-65
e.	4.75	38.7		25-55
f.	2.36	29.6		20-40
g.	0.425	11.2		10-15
h.	0.075	2.8		<5

End of Report



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Issued To:

Executive Engineer

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Description of Sample: Water Bound Macadam (W.B.M)

Sub: Construction of Harijan Tola Sanjoglal Paswan's house to
PMGSY Chaurath Path

Ref. No., Dated: 18.09.2020

Report No: MSTH-180920519

Date of Receipt: 18.09.2020

Date of Testing: 18.09.20-20.09.20

Date of Report: 21.09.2020

SL no.	Test	Result	Test Method	Requirement as per MoRTH Table-400.6 GR-III
1.	IS Sieve (mm) Gradation % passing			
a.	63.00	100.00	IS 2386(P-1)1963	100
b.	53.00	93.9		95-100
c.	45.00	85.6		65-90
d.	22.4	7.2		0-10
e.	11.2	0.8		0-5

End of Report

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