

# REGIONAL LABORATORY

R.W.D , MUZZFARPUR

## TEST RESULT OF CONCRETE CUBE

Name of Work :- *Cube Test for CCP-M30.*

Name of Road :- *Budhan Ram's House to Abadh Mandal's House L032  
under Sursand Block under M.M.G.S.Y.*

Name of Division :- *R.W.D Works Division Pupri.* Date of Collection/Receipt :- *23.11.2020*

Name of Agency :- *Baba Neemkarole Construction* Date of Test :- *26.11.2020*

Agreement No :- *76/SBD/2019-20.* Package No :- *M.M.G.S.Y.*

Ref:- (PIU) A.E R.W.D Works Sub Div. *Sursand* LT No:- *0/Enclosure/* DT *24.05.2020*

SL. No	Test after 7 days	Test after 28 days <span style="float: right;">CH. 30 M.</span>		
Dt. of Concreting		24.06.20	24.06.20	24.06.20
Dt. Of Test		26.11.20	26.11.20	26.11.20
I D Mark		B <sub>1</sub>	B <sub>2</sub>	B <sub>3</sub>
Area C.M <sup>2</sup>		225	225	225
Maximum Load KN		690.00	670.00	690.00
Crushing Strength Kg/CM <sup>2</sup>		312.92	303.85	312.92
Remarks		— M30 —		

Remarks :- *M30.*

Memo No. *1324* Date *28/11/2020*

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

*21/11/20*  
26/11/20  
L.A

*26/11/20*  
A.E

*26/11/20*  
E.E  
R.W.D

Regional Laboratory

किसान विकास विभाग  
ग्रामीण कार्य विभाग  
क्षेत्रीय प्रयोगशाला, मुजफ्फरपुर

**REPORT ON**  
**CONCRETE MIX DESIGN (M-30)**

FOR THE PROPOSED

C/O

**ROAD FROM & CD WORKS WITH MAINTENANCE FOR  
BUDHAN RAM'S HOUSE TO ABADH MANDAL'S HOUSE L032**

UNDER SCHEME: MMGSY

AGREEMENT NO.: 76 S.B.D. OF 2019-20

**SUBMITTED TO:**  
**EXECUTIVE ENGINEER**  
**R.W.D. WORKS DIVISION, PUPRI**

**AGENCY NAME:**  
**M/S BABA NEEMKAROLI CONSTRUCTION**  
A-2/201 KOKIL CAMPUS, MANNA SINGH LANE,  
PATLIPUTRA, PATNA, BIHAR



**TESTING DONE BY**  
**OM SAI CONSULTANTS**

**(AN ISO 9001:2015 & ISO/IEC 17025: 2017 CERTIFIED, NABL ACCREDITED LAB)**

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## ----CONCRETE MIX DESIGN----

<b>Report No:</b> OSC/MIX/070620/04	<b>Date of Receiving:</b> 08/05/2020
<b>Job Description:</b> Concrete Mix Design M-30 with O.P Cement 43 Grade and Plasticizer	<b>Date of Testing:</b> 08/05/2020 TO 07/06/2020
<b>Letter No:</b> N/A	<b>Date of Reporting:</b> 07/06/2020

### PROTOCOL: IS: 10262:2019 & SP-23 GUIDELINE & MORTH

The method of concrete mix design consists of selection of optimum proportion of water, cement, fine/coarse aggregate & admixture to produce concrete of specified properties most economically. The proportion of concrete mix is obtained experimentally evolved relationship between the factors in the choice of mix design.

It provides reasonably accurate guide to arrive at an optimum proportion of ingredients. The final Mix proportion is obtained on the basis of trial mix. The mix design has been carried out as per **IS:10262** guideline keeping in the view. The recommended mix design deviation and targeted mean strength. The recommended mix proportion should be tested at site their workability and strength.

1	Grade of Concrete	M-30
2	Characteristic Strength At 28 Days, N/Mm <sup>2</sup>	30.0 N/mm <sup>2</sup>
3	Targeted Strength At 28 Days, N/Mm <sup>2</sup>	38.25 N/mm <sup>2</sup>
4	Degree of Quality Control	Good
5	Exposure Condition	Severe
6	Slump Required	(80±5) mm
7	Nominal Size of Aggregate	20 mm
8	Type of Cement	O.P. Cement – 43 grade
9	Minimum Cement Content	320 kg/m <sup>3</sup>
10	Admixture Type	Plasticizer

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-----CONCRETE MIX DESIGN-----

## OBSERVATION DATA OF INGREDIENTS

1(i)	Compressive Strength of Cement at 3 days, N/mm <sup>2</sup>	27.2
(ii)	Compressive Strength of Cement at 7 days, N/mm <sup>2</sup>	37.7
(iii)	Compressive Strength of Cement at 28 days, N/mm <sup>2</sup>	47.5

	Name of Test	Cement	Fine Aggregate	Coarse Aggregate		Admixture
				20 mm	10 mm	
2.	Fineness, m <sup>2</sup> /kg	289				
3.	Setting Time, minutes					
(a.)	-Initial	121				
(b.)	-Final	252				
4.	Specific Gravity	3.15	2.65	2.73	2.71	1.11
5.	Bulk Density, g/cc		1.63	1.49	1.53	
6.	Water Absorption, %		1.23	0.41	0.56	
7.	Moisture Contents, %		0.15	-	-	
8.	Silt Content, % (by Vol.)		3.7	-	-	

9. Sieve Analysis Material Passing Through IS Sieve					
		Fine Aggregate	Coarse Aggregate		Mix Ratio of Coarse Aggregate
			20 mm	10 mm	
					60:40
	40mm		100		100
	20 mm		93.1		95.1
	12.5 mm		-	100	-
	10mm	100	9.4	92.8	40.5
	4.75 mm	92.2	0.7	9.2	4.3
	2.36 mm	81.5		1.5	-
	1.18 mm	62.8			
	600 micron	42.0			
	300 micron	15.7			
	150 micron	3.4			

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## -----CONCRETE MIX DESIGN-----

10.	Gradation of Fine Aggregate	Zone -II
11.	Gradation of Coarse Aggregate	Graded Separately & Combined
12.	Mix Ratio of Coarse Aggregate	60:40
13.	Water Cement Ratio	0.41
14.	Workability (Slump)	75 mm
15.	Admixture (%)	1.0

16. Mixed Ratio of ingredients by weight (for 1 m<sup>3</sup>):-

Cement	Fine Aggregate	Coarse Aggregate		Water	Admixture
		20 mm	10 mm		
385	671	754	501	158	3.85

17. Ratio By wt :-

Cement	Fine Aggregate	Coarse Aggregate		Water	Admixture
		20 mm	10 mm		
1	1.74	1.96	1.30	0.41	0.010

18. Quantity of Material Required For one Bag Cement (50 Kg) is as Follows:-

Cement (kg)	Fine Aggregate (kg)	Coarse Aggregate (kg)		Water, (kg)	Admixture (kg)
		20 mm	10 mm		
50	87.16	97.90	65.03	20.52	0.50

19. Compressive Strength of the Above Mix Concrete:-

(a.)	Compressive Strength At 7 Days	27.6 N/mm <sup>2</sup>
(b.)	Compressive Strength At 28 Days	39.2 N/mm <sup>2</sup>

.....End of Result.....

**Checked By**

**Authorized Signatory**

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