



Louisiana Division
3320 Airline Drive
Metairie, LA 70001
Main: 504-834-3341
Fax: 504-836-6830

Date: 12/07/2016
Client: M NATAL CONTRACTOR INC
Attention:

DAMMON ENGINEERING INC

Date: 12-8-16 Project: ENB6 SUPERWALKS

Reviewed: _____
Reviewed as Noted _____
Revise and Resubmit _____
Rejected: _____
Other: _____

Corrections or comments made on the shop drawings during this review do not relieve the contractor from compliance with requirements of the drawings and specifications. This check is only for review of the general conformance with the design concept of the project and general compliance with the information given in the contract documents. This contractor is responsible for: confirming and correlating all quantities and dimensions; selecting fabrication processes and techniques of construction; coordinating his or her work with that of all other trades and performing all in a safe and satisfactory manner.

Item: CONCRETE MLK
Comments



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Concrete Mix Design

Date: 12/07/2016
Client: M NATAL CONTRACTOR INC
Project: SLIDELL - NEW SIDEWALKS

1.0 Cubic Yard by Weight - SSD

Mix Number: RMX93
Mix Description: 4000 PSI WRA AEA FIBERS
Strength @ 28 Days: 4000 psi
Usage: Paving/Cast in Place

Materials:	SSD Weights		
Cement	ASTM C-150	Type I/II	436 lbs
Fly Ash	ASTM C-618	Fly Ash	109 lbs
Coarse Aggregate	ASTM C-33	1" GRAVEL	1765 lbs
Fine Aggregate	ASTM C-33	Concrete Sand	1225 lbs
Water			250 lbs
Admixture	ASTM ASTM C 260	ASTM C 260	As Required
Admixture	ASTM C494	Water Reducer	2.0 to 5.0 oz/cwt CM

Total Weight:	3786	lbs	Fly Ash Replacement:	20.0 %
Unit Weight:	140.00	pcf	Slag Replacement:	0.0 %
Yield:	27.03	cu.ft.	Slump:	3.00 - 5.00 inches
w/cm Ratio:	0.46		Air Content:	3.5 - 6.0 %

Comments:

The cementitious content of the mix design is stated as a minimum and Lafarge reserves the right to increase cementitious content if needed.
 Chemical admixtures are added in accordance with the manufacturer's recommendations. Lafarge reserves the right to adjust dosages or change admixtures when required. Normal set water reducer is used in ambient temperature below 80 degrees F, set retarder is used above 80 degrees F.
 Please forward all compressive strength test results to Lafarge at:
 bj.eckholdt@lafargeholcim.com

Lafarge

B.J. Eckholdt III
 Manager, Quality Assurance



**LAFARGE CONSTRUCTION MATERIALS
CONCRETE COMPRESSIVE STRENGTH EVALUATION**

MIX ID: **93**

DESIGN STRENGTH: **4000**

SUMMARY OF STRENGTH ANALYSIS (ACI 214):

NUMBER OF TESTS AVERAGED: 18
SPEC. DESIGN STRENGTH (psi): 4,000
AVE. STRENGTH COMPUTED FROM TESTS (psi): 5,403
STANDARD DEVIATION (psi): 598 (GOOD)
COEFFICIENT OF VARIATION (%): 11.07
WITHIN TEST STANDARD DEVIATION (psi): 152
WITHIN TEST COEFFICIENT OF VARIATION (%): 2.82 (EXCELLENT)

SUMMARY OF PERFORMANCE (ACI 318):

STANDARD DEVIATION MODIFICATION FACTOR: 1.11
MODIFIED STANDARD DEVIATION (psi): 665
EQ. USED IN COMPUTATION: $f_c + 2.33s - 500 = 5,050$ psi
 $f_c + 1.34s = 4,891$ psi

ACI 318 REQUIRED AVERAGE STRENGTH (psi): **5,050**
OVER DESIGN STRENGTH (psi): **353**

MIX # 93

TEST NO.	DATE MADE	SLUMP (IN.)	AIR (%)	TEMP °F	7-DAY AVE. (psi)	28 - DAY (psi)	28 - DAY AVE. (psi)	CUM. AVE. (psi)	RANGE (psi)	MOVING 3 AVE. (psi)	CUM. STD. DEV. (psi)	CUM. C OF V (%)	7/28 DAY (%)
											#DIV/0!	#DIV/0!	
1	2/4/16	4.00	3.4	65	4,050	5,880	5,700	5,790	180				70
2	2/4/16	4.50	4.6	61	4,000	5,120	5,430	5,533	310		364	6.58	76
3	2/10/16	5.00	4.8	57	3,550	4,700	4,650	5,247	50	5,247	558	10.64	76
4	2/18/16	4.50	4.7	68	3,850	4,660	4,760	5,113	100	4,887	529	10.34	82
5	2/19/16	5.25	4.7	52	3,400	5,100	5,250	5,175	150	4,853	459	8.95	66
6	2/26/16	4.75	4.8	65	3,650	4,810	4,990	5,088	180	4,928	421	8.27	74
7	3/2/16	4.25	4.8	67	3,700	4,390	4,630	5,005	240	4,852	442	8.82	82
8	3/7/16	4.00	3.8	73	4,250	6,500	6,400	5,186	100	5,287	654	12.62	66
9	3/7/16	5.00	4.0	71	4,690	5,530	5,650	5,231	120	5,517	627	11.98	84
10	3/17/16	3.00	3.9	82	3,570	4,720	4,900	5,189	180	5,617	606	11.67	74
11	3/23/16	4.00	5.0	68	3,700	6,010	6,400	5,281	390	5,535	651	12.33	60
12	3/28/16	4.00	5.6	82	4,500	5,690	5,890	5,790	200	5,602	638	11.99	78
13	3/31/16	4.25	3.2	75	3,900	5,610	5,800	5,353	190	5,900	620	11.58	68
14	4/18/16	4.00	4.7	79	4,150	5,120	5,190	5,339	70	5,550	598	11.20	81
15	5/5/16	5.00	2.7	82	3,850	4,800	4,690	5,299	110	5,202	596	11.25	81
16	5/14/2016	5.00	3.1	86	4,410	6,250	6,170	5,356	80	5,370	619	11.57	71
17	5/18/16	5.00	4.9	90	4,460	5,930	5,730	5,384	200	5,595	611	11.34	77
18	6/7/16	4.25	3.3	89	4,400	5,850	5,610	5,403	240	5,923	598	11.07	77