

**Must be typewritten.**

TR3: Technical Report  
Concrete Design Mix

# NMC BUILDINGS

|   |                                                                                                       |                                                                       |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                   |                                                 |                                            |                                                                         |                                                   |                                                                                     |                                                                       |                                                   |                                                     |                                                     |                                                                                                                                          |                                                                          |                            |
|---|-------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|-------------------------------------------------|--------------------------------------------|-------------------------------------------------------------------------|---------------------------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------|---------------------------------------------------|-----------------------------------------------------|-----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|----------------------------|
| 1 | Location Information<br>House No(s) 2502<br>Street Name Newkirk Avenue (work from 09-10-2019 onwards) | Borough Brooklyn<br>Block 5212<br>Lot 41<br>BIN 3822859<br>CB No. 317 | 2 | Applicant Information - Licensed Concrete Testing Lab Required for all applications.<br>Director Last Name ONYAGORO<br>Director First Name TONY<br>Business Name EPIC TESTING SERVICES, INC.<br>Business Address 259 HEMPSTEAD TURNPIKE<br>City ELMONT<br>State N.Y.<br>Zip 11003<br>E-Mail epictslnc@gmail.com<br>Director's Lic. Number 063593<br><input checked="" type="checkbox"/> P.E. <input type="checkbox"/> R.A.<br>Concrete Testing Lab Lic. Number 94 | 3 | Strength Requirements and Design Required for all applications. Attach Trial Mixture Report and/or Field Experience Results.<br>Mixture #1<br>Mixture #2<br>Mixture #3<br>Method of Determining Proportions <input checked="" type="checkbox"/> Trial Mix <input type="checkbox"/> Trial Mix <input type="checkbox"/> Field Experience<br>(Trial Mixture and/or Field Experience)<br><input type="checkbox"/> Field Experience<br>Date Trial Mixture Performed 02-18-2019<br>Specified Strength (f' c) 4000<br>Required Strength (f' c) 6200<br>Specified Test Age (Days) 28 | Material Type<br>Material Source<br>ASTM Standard | Cement<br>Large II<br>C-150<br>324 lbs.<br>lbs. | Slag<br>Large<br>C-889<br>216 lbs.<br>lbs. | Cementitious #3 (lbs)<br>Cementitious #2 (lbs)<br>Cementitious #1 (lbs) | Sand<br>L.I. Natural<br>C-33<br>1400 lbs.<br>lbs. | Coarse Aggregate #1 (lbs)<br>Coarse Aggregate #2 (lbs)<br>Coarse Aggregate #3 (lbs) | Amount of Water (gals)<br>Water<br>NYC<br>C-94<br>32.0 gals.<br>gals. | Admixture #1 (oz)<br>Air<br>C-260<br>1.5 oz<br>oz | Admixture #2 (oz)<br>HRWR<br>C-494<br>28.7 oz<br>oz | Admixture #3 (oz)<br>Other<br>TAGS USED - 5957-5986 | Water-Cement Ratio<br>Slump/Spread<br>(Inches $\pm$ tolerance)<br>Air Content (% $\pm$ tolerance)<br>Unit Weight (lbs./ft <sup>3</sup> ) | 4.4 $\pm$ 1.5<br>8.00 $\pm$ 1<br>0.49<br>% $\pm$<br>lbs./ft <sup>3</sup> | 148.2 lbs./ft <sup>3</sup> |
|---|-------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|-------------------------------------------------|--------------------------------------------|-------------------------------------------------------------------------|---------------------------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------|---------------------------------------------------|-----------------------------------------------------|-----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|----------------------------|

**4 Concrete Testing Lab Director's Statement and Signature Required for all applications.**

I hereby state that the above information is correct and complete to the best of my knowledge and that the above tests were performed in accordance with all Administrative Code Provisions and Departmental Rules, Regulations and Directives.

Falsification of any statement is a misdemeanor and is punishable by a fine or imprisonment, or both.

It is unlawful to give to a city employee, or for a city employee to accept, any benefit, monetary or otherwise, either as a gratuity for properly performing the job or in exchange for special consideration. Violation is punishable by imprisonment or fine or both.

Name (please print)

TONY C. ONYEAORO, P.E.

Signature

Date

08-27-19

P.E. / R.A. Seal (apply seal, then sign and date over seal)

**5 Concrete Producer's Statement and Signature Required for all applications. Must be filled out by Owner of Production Facility.**

I certify that the material type and source in section 3 above are available at my facility and that I will use such materials to produce the concrete mix(es) specified in section 3. I further certify that I will produce and deliver such mix(es) to the project site in accordance with the applicable code provisions of the NYC construction codes and that such mix(es) are appropriate for the placement conditions for the project identified in section 1 above (BC 1905.8.2).

Name (print)

Daniel LSGE

Title

Facility operator

Signature

Date 9/9/19

NRMCA Certification Expiration Date (BC 1095.8.2) 11-14-19

Business Name Eastern Hage Industries

Business Telephone (718) 862-0362

Business Address 9814 Ditmars Avenue

Business Fax (718) 342-3444

City Brooklyn

State NY

Zip 12236

**6 Design Applicant's Statement and Signature Required for all applications. Must be filled out by P.E./R.A. responsible for plans.**

I certify I have reviewed the concrete design mix(es) reported by the licensed testing lab and found them to be in compliance with the approved construction documents (BC 1905.6).

Name (please print)

Signature

Date

P.E. / R.A. Seal (apply seal, then sign and date over seal)

**7 Building Owner's Statement and Signature Required for all applications.**

Falsification of any statement is a misdemeanor and is punishable by a fine or imprisonment, or both. It is unlawful to give to a city employee, or for a city employee to accept, any benefit, monetary or otherwise, either as a gratuity for properly performing the job or in exchange for special consideration. Violation is punishable by a fine or imprisonment, or both. I understand that if I am found after hearing to have knowingly or negligently falsified or allowed to be falsified any certificate, form, signed statement, application, report or certification of the correction of violation required under the provisions of this code or of a rule of any agency, I may be barred from filing further applications or documents with the Department.

Name (print)

Konstantin Geyman

Title

Member

Signature

Date

09/09/19

# EPIC TESTING SERVICES, INC.

259 Hempstead Turnpike, Elmont, New York 11003

Ph: (516) 328-3181 Fax: (516) 328-3260

epic@epicmail.com

CONCRETE TESTING LABORATORY

LICENSE # 94

## CONCRETE MIX DESIGN REPORT

|                                                  |
|--------------------------------------------------|
| Client Property Owner                            |
| Project Location: 2502 Newkirk Avenue, Brooklyn  |
| (work only from 09/10/2019 onwards)              |
| Concrete Plant Supplier: Eastern/Lage Industries |

|                  |            |
|------------------|------------|
| Report Date:     | 09-10-2019 |
| Trial Mix Date:  | 02-18-2019 |
| Expiration Date: | 02-18-2021 |
| Mix No.:         | LRM-400P   |

4000+1200 A.E. Concrete Pump @ 28 days

| Trial Mixes - Dry Batch Weights (lbs. / cubic yards) |       |       |       |       |       |              |            |               |              |
|------------------------------------------------------|-------|-------|-------|-------|-------|--------------|------------|---------------|--------------|
| Trial Mix                                            | 2     | 3     | 4     | 5     | Yield | Cement (lbs) | Slag (lbs) | Fly Ash (lbs) | Silica (lbs) |
| Fine Agg (lbs)                                       | 1380  | 1340  | 1310  | 1250  | 1700  | 1700         | 1700       | 1700          | 1700         |
| Coarse Agg (lbs)                                     | 31.2  | 31.6  | 31.6  | 32.0  | 4.2   | 31.2         | 31.6       | 31.6          | 32.0         |
| Water (gals)                                         | 2.4   | 2.8   | 2.8   | 4.0   | 4.2   | 31.9         | 32.2       | 33.0          | 35.0         |
| Admix 1 (oz)                                         | -     | -     | -     | -     | -     | -            | -          | -             | -            |
| Admix 2 (oz)                                         | -     | -     | -     | -     | -     | -            | -          | -             | -            |
| Admix 3 (oz)                                         | -     | -     | -     | -     | -     | -            | -          | -             | -            |
| Unit Weight (pcf)                                    | 146.5 | 144.8 | 146.0 | 146.6 | 9.00  | 8.50         | 8.75       | 8.00          | 0.43         |
| Slump (in)                                           | 0.45  | 0.43  | 0.40  | 0.38  | 4.1   | 4.7          | 4.9        | 4.4           | 4.4          |
| W/C Ratio                                            | 0.45  | 0.43  | 0.40  | 0.38  | 0.45  | 0.43         | 0.40       | 0.38          | 0.38         |
| Air (%)                                              | 4.1   | 4.7   | 4.9   | 4.4   | 4.1   | 4.7          | 4.9        | 4.4           | 4.4          |

| Compressive Strength Results (ASTM C39) - P.S.I. (4" x 8" Cylinders) |      |      |      |      |           |        |         |         |         |
|----------------------------------------------------------------------|------|------|------|------|-----------|--------|---------|---------|---------|
| Trial Mix                                                            | 2    | 3    | 4    | 5    | W/C Ratio | 7 Days | Average | 28 Days | Average |
| W/C Ratio                                                            | 0.45 | 0.43 | 0.40 | 0.38 | 0.45      | 4872   | 4772    | 6212    | 6636    |
| 7 Days                                                               | 4872 | 4772 | 6212 | 6636 | 4910      | 4885   | 6193    | 6781    | 6708    |
| Average                                                              | 4872 | 4772 | 6212 | 6636 | 4891      | 4828   | 6202    | 6708    | 6708    |
| 28 Days                                                              | 6851 | 7055 | 8492 | 9044 | 7133      | 7211   | 8513    | 9211    | 9173    |
| Average                                                              | 7133 | 7211 | 8513 | 9211 | 7185      | 7192   | 8541    | 9173    | 9143    |
| 56 Days                                                              | 7736 | 7991 | 9175 | 9484 | 7982      | 8063   | 9066    | 9675    | 9823    |
| Average                                                              | 7736 | 7991 | 9175 | 9484 | 7841      | 8125   | 9054    | 9823    | 9823    |
| Source                                                               | STD  | ASTM | S.G. | ASTM | ASTM      | ASTM   | ASTM    | ASTM    | ASTM    |
| Material Type & Source                                               | STD  | ASTM | S.G. | ASTM | ASTM      | ASTM   | ASTM    | ASTM    | ASTM    |

| Based on Results Mix Design # 1 |       |
|---------------------------------|-------|
| Cement (lbs.)                   | 324   |
| Slag (lbs.)                     | 216   |
| Fly Ash (lbs.)                  | -     |
| Microsilica (lbs.)              | -     |
| Fine Aggregate (lbs.)           | 1400  |
| Coarse Aggregate (lbs.)         | 1700  |
| Water (gals.)                   | 31.2  |
| Admix 1 (oz.)                   | 1.6   |
| Admix 2 (oz.)                   | 29.7  |
| Admix 3 (oz.)                   | -     |
| Slump (in.)                     | 8.00  |
| Air Content (%)                 | 4.4   |
| Unit Wt. P.C.F.                 | 146.2 |
| W/C Ratio                       | 0.49  |

As per NYC DOB Bulletin 2010-018 suppliers can adjust admixtures as needed with engineer's approval.

Tony C. Onyeagoro, P.E.  
Laboratory Director

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N.Y.C. D.O.B.

CONCRETE TESTING LABORATORY

LICENSE # 94

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| 09-10-2019       |
| Trial Mix Date:  |
| 02-18-2019       |
| Expiration Date: |
| 02-18-2021       |
| UNM-4000P        |

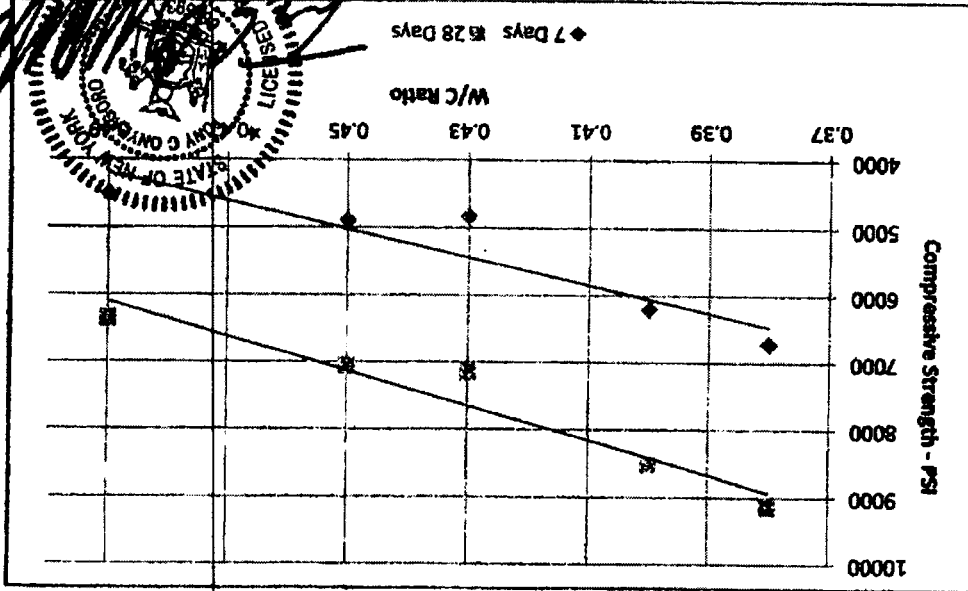
4000 + 1200 A.E. Concrete Pump @ 28 days

| Sieve Size       | 2"  | 1 1/2" | 1" | 3/4" | 3/8" | #4   | #8   | #16  | #30  | #50  | #100 | FM   |
|------------------|-----|--------|----|------|------|------|------|------|------|------|------|------|
| Fine Aggregate   | -   | -      | -  | 100  | 98.6 | 91.7 | 92.3 | 77.5 | 48.7 | 11.9 | 2.6  | 2.63 |
| Coarse Aggregate | -   | -      | -  | -    | -    | 29.6 | 23.5 | 0.7  | 0.5  |      |      | 2.77 |
| Light Weight     | 100 |        |    |      |      |      |      |      |      |      |      |      |

Aggregate Gradation Passing Percent Finer

|                        |                  |                 |
|------------------------|------------------|-----------------|
| Unit Weight Dry Rodded | Specific Gravity | Colometric Test |
|                        | 2.63             |                 |
| Coarse Aggregate       |                  |                 |
| Fine Aggregate         | 2.77             |                 |
| Plate # 1              |                  |                 |

Compressive Strength vs. Water Cement Ratio



Sample broken by Ravindra Seepersad ACI #01285380.

Silica supplied admixtures.

Materials were picked up from Eastern/Lage Industries.

Tags used 5957-5996.

Tony C. Onyegoro, P.E.  
Laboratory Director