

Aggregate Optimization Chart

Production Gradation Report

PLANT #: P-32

Sample Date: 2/24/20

Dates Test Represents: 2/25/2020 through 3/2/2020

Concrete Grade: S2M

Contractor: _____

MDOT No.: _____



Superior Materials, LLC
30701 W. 10 Mile Rd.
Suite 500
Farmington Hills, MI 48336

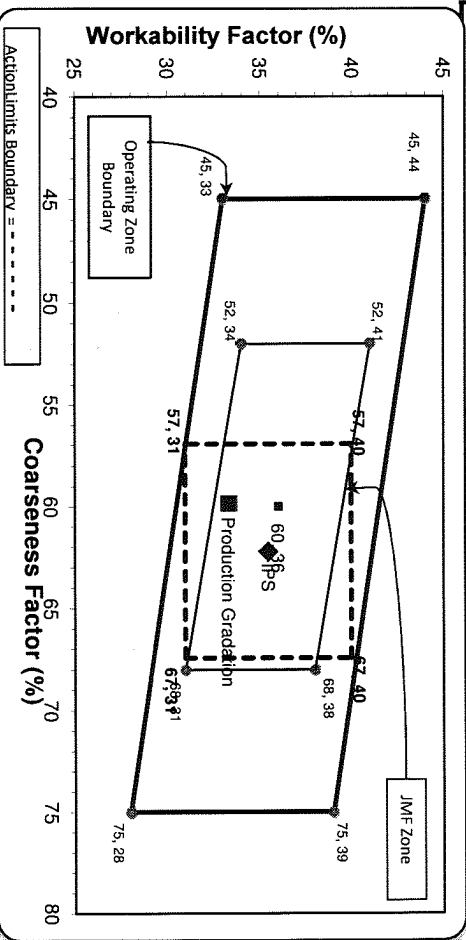
| Agg. Class | Pit # | Source | Weight (SSD) | ft ³ | Specific Gravity | Contribution % |
|------------|--------|--------------|--------------|-----------------|------------------|----------------|
| 6AA | 71-47 | Presque Isle | 1670 | 10.21 | 2.62 | 54.8 |
| 26A | 71-47 | Presque Isle | 100 | 0.61 | 2.62 | 3.3 |
| 2NS | 63-115 | Ray Rd | 1280 | 7.74 | 2.65 | 42.0 |
| Total Wt | | | 3050 | 18.57 | | 100.0 |

| Sieve | % Retained | Cumulative % Retained |
|-------|------------|-----------------------|
| 2" | 0.0 | 0.0 |
| 1.5" | 0.0 | 0.0 |
| 1" | 0.5 | 0.5 |
| 3/4" | 6.7 | 7.3 |
| 1/2" | 21.3 | 28.6 |
| 3/8" | 11.3 | 39.9 |
| #4 | 17.2 | 57.1 |
| #8 | 9.6 | 66.7 |
| #16 | 6.8 | 73.4 |
| #30 | 6.0 | 79.5 |
| #50 | 9.5 | 89.0 |
| #100 | 7.5 | 96.6 |
| LBW | 2.3 | 98.9 |

*Maximum % Retained must be above the 3/8" sieve.
*Any two adjacent sieves must equal 10% except max., nom. max., #100 and #200 sieves.
*% Retained must be at least 4% for each sieve except max., nom. max., #100 and #200 sieves.
*% Retained must be at least 8% for the 1" sieve when a 2" max. size (nom. Max. 1.5") aggregate is used.

Production Gradation Batch Plant Gradations Aggregate Supplier Gradations

Coarseness Factor: 60 Workability Factor: 33



Initial Production Sample (IPS)

| Sieve | % Cumulative Passing | % Retained | Cumulative % Retained |
|-------|----------------------|------------|-----------------------|
| 2" | 100.0 | 0.0 | 0.0 |
| 1.5" | 100.0 | 0.0 | 0.0 |
| 1" | 100.0 | 0.0 | 0.0 |
| 3/4" | 94.0 | 6.0 | 6.0 |
| 1/2" | 70.2 | 23.7 | 29.8 |
| 3/8" | 59.9 | 10.4 | 40.1 |
| #4 | 42.7 | 17.2 | 57.3 |
| #8 | 35.5 | 7.2 | 64.5 |
| #16 | 28.4 | 7.0 | 71.6 |
| #30 | 19.2 | 9.2 | 80.8 |
| #50 | 8.9 | 10.3 | 91.1 |
| #100 | 3.1 | 5.9 | 96.9 |
| LBW | 1.4 | 1.7 | 98.6 |

PREPARED BY:
SM, LLC Technical Service

Approved By: _____

Plant 958-JMT

Product 1054-6AA LS PI

Name/Title Doug Storey / QC Technician

Period: 02/23/2020 - 02/29/2020

Report Date 02/27/2020

| Procedure | Sieve/Test | Result | Unit | 6AA LS PI Spec |
|-----------|-----------------------|--------|------|----------------|
| | 2" (50mm) | 100.0 | % | |
| | 1 1/2" (37.5mm) | 100.0 | % | 100-100 |
| | 1" (25mm) | 99.0 | % | 95-100 |
| | 3/4" (19mm) | 86.7 | % | |
| | 1/2" (12.5mm) | 47.8 | % | 30-60 |
| | 3/8" (9.5mm) | 28.7 | % | |
| | #4 (4.75mm) | 4.6 | % | 0-8 |
| | #8 (2.36mm) | 2.0 | % | |
| | #16 (1.18mm) | 1.7 | % | |
| | #30 (0.6mm) | 1.6 | % | |
| | #50 (0.3mm) | 1.5 | % | |
| | #100 (0.15mm) | 1.4 | % | |
| | #200 (75µm) | 1.2 | % | |
| | Wash Loss (#200/75um) | 1.0 | % | 0-2 |
| | Total Moisture | 2.5 | % | |

Plant 958-JMT

Product 1067-26A Mod LS

Name/Title Doug Storey / QC Technician

Period: 02/23/2020 - 02/29/2020

Report Date 02/27/2020

| Procedure | Sieve/Test | Result | Unit | 26A Mod LS Spec |
|-----------|-----------------------|--------|------|-----------------|
| | 2" (50mm) | 100.0 | % | |
| | 1 1/2" (37.5mm) | 100.0 | % | |
| | 1" (25mm) | 100.0 | % | |
| | 3/4" (19mm) | 100.0 | % | 100-100 |
| | 1/2" (12.5mm) | 99.0 | % | 95-100 |
| | 3/8" (9.5mm) | 73.4 | % | 60-95 |
| | #4 (4.75mm) | 14.2 | % | 5-30 |
| | #8 (2.36mm) | 4.8 | % | 0-12 |
| | #16 (1.18mm) | 3.3 | % | |
| | #30 (0.6mm) | 2.9 | % | |
| | #50 (0.3mm) | 2.6 | % | |
| | #100 (0.15mm) | 2.4 | % | |
| | #200 (75µm) | 2.0 | % | |
| | Wash Loss (#200/75um) | 1.7 | % | 0-3 |
| | Total Moisture | 3.8 | % | |

Edw. C. Levy Co.

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Plant 958-JMT

Product 1022-2NS GR

Period: 02/23/2020 - 02/29/2020

Name/Title Doug Storey / QC Technician

Report Date 02/27/2020

| Procedure | Sieve/Test | Result | Unit | 2NS GR Spec |
|-----------|-----------------------|--------|------|-------------|
| | 3/8" (9.5mm) | 100.0 | % | 100-100 |
| | #4 (4.75mm) | 95.2 | % | 95-100 |
| | #8 (2.36mm) | 76.4 | % | 65-95 |
| | #16 (1.18mm) | 60.8 | % | 35-75 |
| | #30 (0.6mm) | 46.6 | % | 20-55 |
| | #50 (0.3mm) | 24.0 | % | 10-30 |
| | #100 (0.15mm) | 6.2 | % | 0-10 |
| | #200 (75µm) | 1.4 | % | |
| | FM | 2.91 | | 2.6-3 |
| | Wash Loss (#200/75µm) | 1.2 | % | 0-3 |
| | Total Moisture | 3.8 | % | |