

Aggregate Optimization Chart

PLANT #: **p11**

Sample Date: 12/11/23

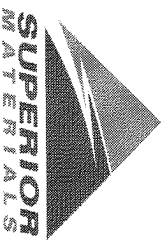
Dates Test Represents: 12/12/2023 through 12/18/2023

Concrete Grade: **S2M, 3500HP**

Contractor: _____

MDOT No.: _____

| Agg. Class | Pit # | Source | Weight (ssj) | ft ³ | Specific Gravity | Contribution % |
|------------|--------|--------------|--------------|-----------------|------------------|----------------|
| 6AA | 71-47 | Presque Isle | 1670 | 10.21 | 2.62 | 54.8 |
| 26A | 71-47 | Presque Isle | 150 | 0.92 | 2.62 | 4.9 |
| 2NS | 95-013 | Smelter Bay | 1230 | 7.44 | 2.65 | 40.3 |
| Total Wt | | | 3050 | 18.57 | | 100.0 |



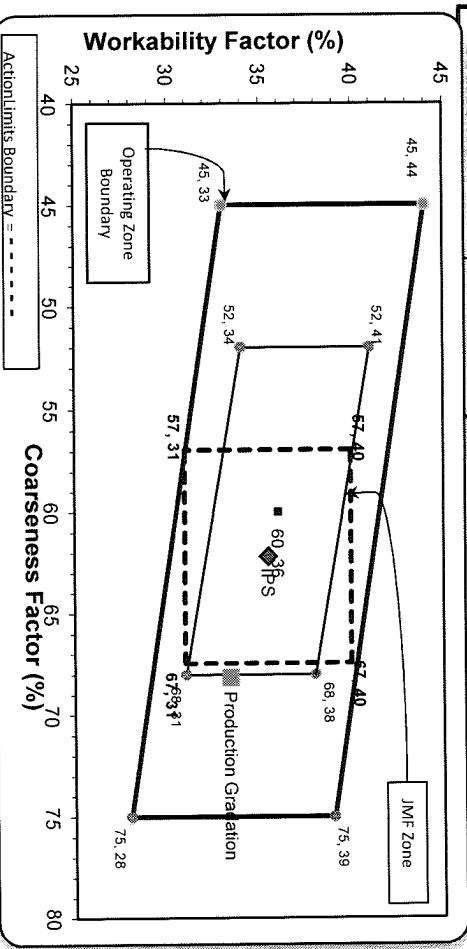
Superior Materials, LLC
 30701 W. 10 Mile Rd.
 Suite 500
 Farmington Hills, MI 48336

| Sieve | 6AA | 26A | 2NS | Cumulative % Passing | % Retained | Cumulative % Retained |
|-------|-------|-------|-------|----------------------|------------|-----------------------|
| 2" | 100.0 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 |
| 1.5" | 100.0 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 |
| 1" | 98.0 | 100.0 | 100.0 | 98.9 | 1.1 | 1.1 |
| 3/4" | 76.3 | 100.0 | 100.0 | 87.0 | 11.9 | 13.0 |
| 1/2" | 33.6 | 96.5 | 100.0 | 63.5 | 23.6 | 36.5 |
| 3/8" | 18.2 | 87.9 | 100.0 | 54.6 | 8.9 | 45.4 |
| #4 | 1.8 | 20.7 | 96.5 | 40.9 | 13.7 | 59.1 |
| #8 | 1.0 | 5.5 | 80.8 | 33.4 | 7.5 | 66.6 |
| #16 | 0.8 | 3.0 | 65.4 | 27.0 | 6.4 | 73.0 |
| #30 | 0.8 | 2.5 | 49.5 | 20.5 | 6.4 | 79.5 |
| #50 | 0.8 | 2.2 | 25.4 | 10.8 | 9.7 | 89.2 |
| #100 | 0.7 | 2.1 | 5.9 | 2.9 | 7.9 | 97.1 |
| LBW | 0.6 | 1.8 | 1.1 | 0.9 | 2.0 | 99.1 |

*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 4% for the 3/4" sieve when
 a 1.5" max. size (nom. Max. 1.0") aggregate is used.

Production Gradation Batch Plant Gradations Aggregate Supplier Gradations

Coarseness Factor: **68** 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 |

Coarseness Factor: **62**
 Workability Factor: **35**



Plant S11-Onsite Jefferson

Product 1051-6AA LS

Period: 12/10/2023 - 12/16/2023

Name/Title Doug Storey / QC Technician

Report Date 12/15/2023

| Procedure | Sieve/Test | Result | Unit | 6AA LS |
|-----------|-----------------------|--------|------|---------|
| | 2" (50mm) | 100.0 | % | |
| | 1 1/2" (37.5mm) | 100.0 | % | 100-100 |
| | 1" (25mm) | 98.0 | % | 95-100 |
| | 3/4" (19mm) | 76.3 | % | |
| | 1/2" (12.5mm) | 33.6 | % | 30-60 |
| | 3/8" (9.5mm) | 18.2 | % | |
| | #4 (4.75mm) | 1.8 | % | 0-8 |
| | #8 (2.36mm) | 1.0 | % | |
| | #16 (1.18mm) | 0.8 | % | |
| | #30 (.6mm) | 0.8 | % | |
| | #50 (.3mm) | 0.8 | % | |
| | #100 (.15mm) | 0.7 | % | |
| | #200 (75µm) | 0.68 | % | |
| | Wash Loss (#200/75um) | 0.6 | % | 0-2 |
| | Total Moisture | 3.12 | % | |



Plant S11-Onsite Jefferson

Product 1067-26A Mod LS

Period: 12/10/2023 - 12/16/2023

Name/Title Doug Storey / QC Technician

Report Date 12/15/2023

| 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) | 96.5 | % | 95-100 |
| | 3/8" (9.5mm) | 87.9 | % | 60-95 |
| | #4 (4.75mm) | 20.7 | % | 5-30 |
| | #8 (2.36mm) | 5.5 | % | 0-12 |
| | #16 (1.18mm) | 3.0 | % | |
| | #30 (.6mm) | 2.5 | % | |
| | #50 (.3mm) | 2.2 | % | |
| | #100 (.15mm) | 2.1 | % | |
| | #200 (75µm) | 1.9 | % | |
| | Wash Loss (#200/75µm) | 1.8 | % | 0-3 |
| | Total Moisture | 2.52 | % | |



Plant S11-Onsite Jefferson

Product 1022-2NS GR

Period: 12/10/2023 - 12/16/2023

Name/Title Doug Storey / QC Technician

Report Date 12/15/2023

| Procedure | Sieve/Test | Result | Unit | 2NS GR Spec |
|-----------|-----------------------|--------|------|-------------|
| | 3/8" (9.5mm) | 100.0 | % | 100-100 |
| | #4 (4.75mm) | 96.5 | % | 95-100 |
| | #8 (2.36mm) | 80.8 | % | 65-95 |
| | #16 (1.18mm) | 65.4 | % | 35-75 |
| | #30 (.6mm) | 49.5 | % | 20-55 |
| | #50 (.3mm) | 25.4 | % | 10-30 |
| | #100 (.15mm) | 5.9 | % | 0-10 |
| | #200 (75µm) | 1.3 | % | |
| | FM | 2.76 | | 2.6-3 |
| | Wash Loss (#200/75um) | 1.1 | % | 0-3 |
| | Total Moisture | 4.05 | % | |