

Aggregate Optimization Chart

Production Gradation Report

PLANT #: **P-02**

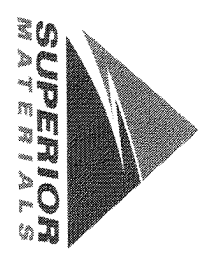
Sample Date: **1/16/23**

Dates Test Represents: **1/17/2023** through **1/11/2023**

Concrete Grade: **P1M, 3500HP**

Contractor: _____

MIDOT 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 % |
|------------|--------|-----------------|--------------|-----------------|------------------|----------------|
| CA | 71-47 | Presque Isle | 1020 | 6.24 | 2.62 | 33.2 |
| IA | 71-47 | Presque Isle | 850 | 5.20 | 2.62 | 27.7 |
| NNS | 63-115 | Ray Rd | 1200 | 7.26 | 2.65 | 39.1 |
| | | Total Wt | 3070 | 18.70 | | 100.0 |

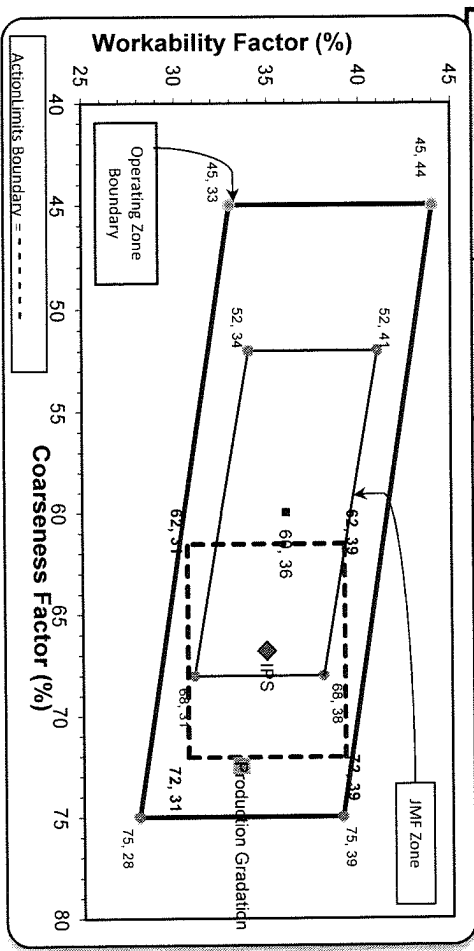
| Sieve | CA | IA | NNS | Cumulative % Passing | % Retained | Cumulative % Retained |
|-------|-------|-------|-------|----------------------|------------|-----------------------|
| 2" | 100.0 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 |
| 1.5" | 87.5 | 100.0 | 100.0 | 95.8 | 4.2 | 4.2 |
| 1" | 31.2 | 100.0 | 100.0 | 77.1 | 18.7 | 22.9 |
| 3/4" | 6.2 | 98.8 | 100.0 | 68.5 | 8.6 | 31.5 |
| 1/2" | 2.1 | 71.2 | 100.0 | 59.5 | 9.0 | 40.5 |
| 3/8" | 2.1 | 43.4 | 100.0 | 51.8 | 7.7 | 48.2 |
| #4 | 2.1 | 7.6 | 97.7 | 41.0 | 10.8 | 59.0 |
| #8 | 2.0 | 3.1 | 81.8 | 33.5 | 7.5 | 66.5 |
| #16 | 2.0 | 2.4 | 66.0 | 27.1 | 6.4 | 72.9 |
| #30 | 2.0 | 2.2 | 50.2 | 20.9 | 6.2 | 79.1 |
| #50 | 1.9 | 2.1 | 25.4 | 11.1 | 9.8 | 88.9 |
| #100 | 1.8 | 1.9 | 5.8 | 3.4 | 7.7 | 96.6 |
| LBW | 1.3 | 1.7 | 1.1 | 1.3 | 2.1 | 98.7 |

Verify this number is 100%

*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: **72** 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" | 85.0 | 15.0 | 15.0 |
| 3/4" | 72.3 | 12.7 | 27.7 |
| 1/2" | 64.5 | 7.8 | 35.5 |
| 3/8" | 56.5 | 8.0 | 43.5 |
| #4 | 42.7 | 13.8 | 57.3 |
| #8 | 34.9 | 7.8 | 65.1 |
| #16 | 29.0 | 5.9 | 71.0 |
| #30 | 21.0 | 8.0 | 79.0 |
| #50 | 8.2 | 12.8 | 91.8 |
| #100 | 1.6 | 6.5 | 98.4 |
| LBW | 0.7 | 0.9 | 99.3 |

PREPARED BY:
SM, LLC Technical Service

Approved By: _____



Basic Statistical Summary Report

Plant S02-Superior Hoover
Product 7919-COARSE AGG P1M LS
Specification Coarse Agg P1M LS Target
Period 11/05/2023 - 11/11/2023

| Sieve/Test | Tests | Average | St Dev | Target | Specification |
|-----------------------|-------|---------|--------|---------|---------------|
| 2" (50mm) | 1 | 100.0 | | 100-100 | |
| 1 1/2" (37.5mm) | 1 | 87.5 | | | |
| 1" (25mm) | 1 | 31.2 | | | |
| 3/4" (19mm) | 1 | 6.2 | | | |
| 1/2" (12.5mm) | 1 | 2.1 | | | |
| 3/8" (9.5mm) | 1 | 2.1 | | | |
| #4 (4.75mm) | 1 | 2.1 | | | |
| #8 (2.36mm) | 1 | 2.0 | | | |
| #16 (1.18mm) | 1 | 2.0 | | | |
| #30 (.6mm) | 1 | 2.0 | | | |
| #50 (.3mm) | 1 | 1.9 | | | |
| #100 (.15mm) | 1 | 1.8 | | | |
| #200 (75µm) | 1 | 1.6 | | 0-2 | |
| Pan | 1 | 0.0 | | | |
| Wash Loss (#200/75um) | 1 | 1.3 | | | 0-2 |
| Total Moisture | 1 | 1.51 | | | |



Basic Statistical Summary Report

Plant S02-Superior Hoover
Product 7920-INTERMED AGG P1M LS
Specification Intermed Agg P1M LS Target
Period 11/05/2023 - 11/11/2023

| Sieve/Test | Tests | Average | St Dev | Target | Specification |
|-----------------------|-------|---------|--------|---------|---------------|
| 2" (50mm) | 1 | 100.0 | | | |
| 1 1/2" (37.5mm) | 1 | 100.0 | | | |
| 1" (25mm) | 1 | 100.0 | | 100-100 | |
| 3/4" (19mm) | 1 | 98.8 | | | |
| 1/2" (12.5mm) | 1 | 71.2 | | | |
| 3/8" (9.5mm) | 1 | 43.4 | | | |
| #4 (4.75mm) | 1 | 7.6 | | | |
| #8 (2.36mm) | 1 | 3.1 | | | |
| #16 (1.18mm) | 1 | 2.4 | | | |
| #30 (.6mm) | 1 | 2.2 | | | |
| #50 (.3mm) | 1 | 2.1 | | | |
| #100 (.15mm) | 1 | 1.9 | | | |
| #200 (75µm) | 1 | 1.8 | | 0-3 | |
| Pan | 1 | 0.0 | | | |
| Wash Loss (#200/75um) | 1 | 1.7 | | | 0-3 |
| Total Moisture | 1 | 2.96 | | | |



Basic Statistical Summary Report

Plant S02-Superior Hoover
Product 1022-2NS GR
Specification 2NS GR Spec
Period 11/05/2023 - 11/11/2023

| Sieve/Test | Tests | Average | St Dev | Target | Specification |
|-----------------------|-------|---------|--------|---------|---------------|
| 3/8" (9.5mm) | 1 | 100.0 | | | 100-100 |
| #4 (4.75mm) | 1 | 97.7 | | | 95-100 |
| #8 (2.36mm) | 1 | 81.8 | | | 65-95 |
| #16 (1.18mm) | 1 | 66.0 | | | 35-75 |
| #30 (.6mm) | 1 | 50.2 | | 40-50 | 20-55 |
| #50 (.3mm) | 1 | 25.4 | | | 10-30 |
| #100 (.15mm) | 1 | 5.8 | | | 0-10 |
| #200 (75µm) | 1 | 1.3 | | | |
| Pan | 1 | 0.0 | | | |
| FM | 1 | 2.73 | | 2.7-2.9 | 2.6-3 |
| Wash Loss (#200/75um) | 1 | 1.1 | | | 0-3 |
| Total Moisture | 1 | 4.86 | | | |