# Aggregate Optimization Chart

Production Gradation Report

**PLANT #:** **P-2**

Contractor: _____

Sample Date: 7/30/26

Concrete Grade: **DM-4500HP**

Dates Test Represents: 7/31/2026 through 8/6/2026

1" Slump

MDOT No.: _____

| Agg. Class | Pit # | Source | Weight (SSD) | ft³ | Specific Gravity | % Contribution |
|---|---|---|---|---|---|---|
| 6AA | 71-47 | Presque Isle | 1380 | 8.81 | 2.51 | 46.3 |
| 26A | 71-47 | Presque Isle | 300 | 1.92 | 2.51 | 10.1 |
| 2NS | 63-115 | Ray Rd | 1300 | 7.80 | 2.67 | 43.6 |
| | | **Total Wt** | **2980** | **18.53** | | 100.0 |

<----- Verify this number is 100%

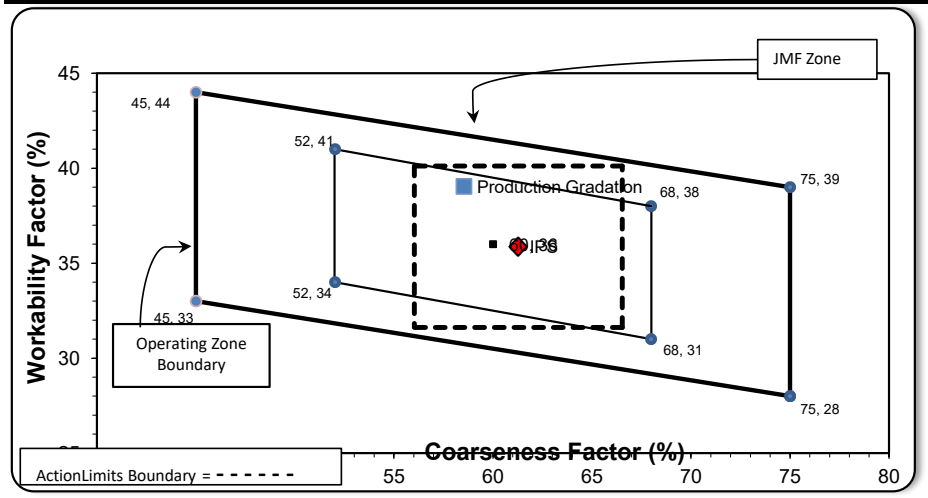
| Sieve | 6AA | 26A | 2NS | Cumulative % Passing | % Retained | Cumulative % Retained |
|---|---|---|---|---|---|---|
| 2" | 100.0 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 |
| 1.5" | 100.0 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 |
| 1" | 99.1 | 100.0 | 100.0 | 99.6 | 0.4 | 0.4 |
| 3/4" | 88.2 | 100.0 | 100.0 | 94.5 | 5.0 | 5.5 |
| 1/2" | 46.1 | 98.1 | 100.0 | 74.8 | 19.7 | 25.2 |
| 3/8" | 22.7 | 86.6 | 100.0 | 62.9 | 12.0 | 37.1 |
| #4 | 3.0 | 23.6 | 96.2 | 45.7 | 17.1 | 54.3 |
| #8 | 1.7 | 6.3 | 80.5 | 36.5 | 9.2 | 63.5 |
| #16 | 1.4 | 3.8 | 63.3 | 28.6 | 7.9 | 71.4 |
| #30 | 1.3 | 3.2 | 46.0 | 21.0 | 7.7 | 79.0 |
| #50 | 1.2 | 3.1 | 25.1 | 11.8 | 9.2 | 88.2 |
| #100 | 1.2 | 2.9 | 7.1 | 3.9 | 7.9 | 96.1 |
| LBW | 1.1 | 2.6 | 1.1 | 1.3 | 2.7 | 98.7 |


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


*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: | 59 | Workability Factor: | 37 | Adjusted WF 39.0 |
|---|---|---|---|---|




Intial Production Sample (IPS)

| Coarseness Factor: | 61 |
|---|---|
| Workability Factor: | 36 |

| Sieve | Cumulative % Passing | % Retained | Cumulative % Retained |
|---|---|---|---|
| 2" | 100.0 | 0.0 | 0.0 |
| 1.5" | 100.0 | 0.0 | 0.0 |
| 1" | 99.3 | 0.7 | 0.7 |
| 3/4" | 89.2 | 10.1 | 10.8 |
| 1/2" | 70.7 | 18.5 | 29.3 |
| 3/8" | 60.7 | 10.0 | 39.3 |
| #4 | 44.4 | 16.3 | 55.6 |
| #8 | 35.9 | 8.5 | 64.1 |
| #16 | 27.3 | 8.6 | 72.7 |
| #30 | 19.1 | 8.2 | 80.9 |
| #50 | 7.4 | 11.7 | 92.6 |
| #100 | 1.9 | 5.6 | 98.1 |
| LBW | 0.7 | 1.2 | 99.3 |

PREPARED BY:
SM, LLC Technical Service

Approved By:
Nancy Donahue

# Aggregate Optimization Chart

Production Gradation Report

**PLANT #:** **P-2**

Contractor: _____

Sample Date: 7/30/26

Concrete Grade: **DM-4500HP**

Dates Test Represents: 7/31/2026 through 8/6/2026

5" Slump

MDOT No.: _____

| Agg. Class | Pit # | Source | Weight (SSD) | ft³ | Specific Gravity | % Contribution |
|---|---|---|---|---|---|---|
| 6AA | 71-47 | Presque Isle | 1300 | 8.30 | 2.51 | 45.3 |
| 26A | 71-47 | Presque Isle | 350 | 2.23 | 2.51 | 12.2 |
| 2NS | 63-115 | Ray Rd | 1220 | 7.32 | 2.67 | 42.5 |
| | | **Total Wt** | **2870** | **17.86** | | 100.0 |

<----- Verify this number is 100%

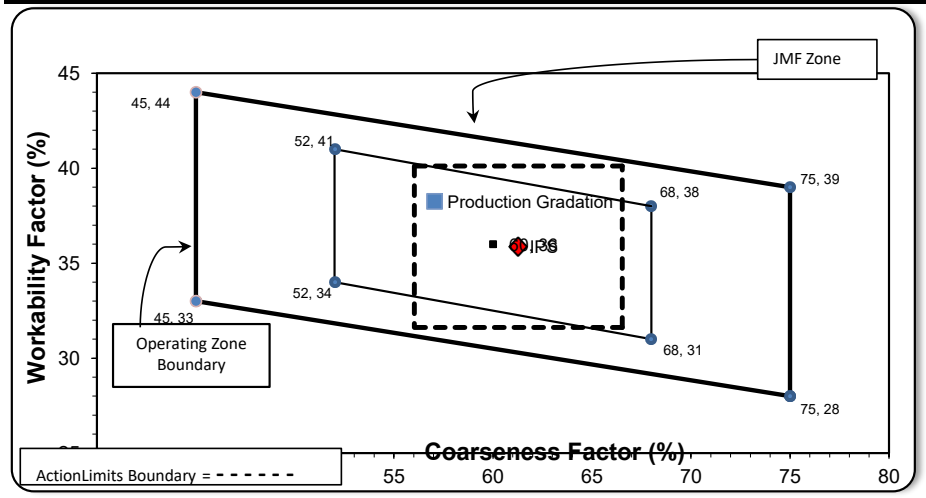
| Sieve | 6AA | 26A | 2NS | Cumulative % Passing | % Retained | Cumulative % Retained |
|---|---|---|---|---|---|---|
| 2" | 100.0 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 |
| 1.5" | 100.0 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 |
| 1" | 99.1 | 100.0 | 100.0 | 99.6 | 0.4 | 0.4 |
| 3/4" | 88.2 | 100.0 | 100.0 | 94.7 | 4.9 | 5.3 |
| 1/2" | 46.1 | 98.1 | 100.0 | 75.4 | 19.3 | 24.6 |
| 3/8" | 22.7 | 86.6 | 100.0 | 63.4 | 12.0 | 36.6 |
| #4 | 3.0 | 23.6 | 96.2 | 45.1 | 18.2 | 54.9 |
| #8 | 1.7 | 6.3 | 80.5 | 35.8 | 9.4 | 64.2 |
| #16 | 1.4 | 3.8 | 63.3 | 28.0 | 7.8 | 72.0 |
| #30 | 1.3 | 3.2 | 46.0 | 20.5 | 7.5 | 79.5 |
| #50 | 1.2 | 3.1 | 25.1 | 11.6 | 8.9 | 88.4 |
| #100 | 1.2 | 2.9 | 7.1 | 3.9 | 7.7 | 96.1 |
| LBW | 1.1 | 2.6 | 1.1 | 1.3 | 2.6 | 98.7 |


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


*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: | 57 | Workability Factor: | 36 | Adjusted WF 38.3 |
|---|---|---|---|---|




Intial Production Sample (IPS)

| Coarseness Factor: | 61 |
|---|---|
| Workability Factor: | 36 |

| Sieve | Cumulative % Passing | % Retained | Cumulative % Retained |
|---|---|---|---|
| 2" | 100.0 | 0.0 | 0.0 |
| 1.5" | 100.0 | 0.0 | 0.0 |
| 1" | 99.3 | 0.7 | 0.7 |
| 3/4" | 89.2 | 10.1 | 10.8 |
| 1/2" | 70.7 | 18.5 | 29.3 |
| 3/8" | 60.7 | 10.0 | 39.3 |
| #4 | 44.4 | 16.3 | 55.6 |
| #8 | 35.9 | 8.5 | 64.1 |
| #16 | 27.3 | 8.6 | 72.7 |
| #30 | 19.1 | 8.2 | 80.9 |
| #50 | 7.4 | 11.7 | 92.6 |
| #100 | 1.9 | 5.6 | 98.1 |
| LBW | 0.7 | 1.2 | 99.3 |

PREPARED BY:
SM, LLC Technical Service

Approved By:
Nancy Donahue

# Daily Summary Report

| | | | |
|---|---|---|---|
| Date | Thursday, July 30, 2026 | | |
| Sample Id | -1989633681 | -674932421 | -1989633682 |
| Plant | Hoover | Hoover | Hoover |
| Product | 1022<br>2NS GR | 1054<br>6AA LS PI | 1067<br>26A Mod LS |
| Specification | 2NS GR Spec | 6AA LS | 26A Mod LS Spec |
| Sample Type | QA | QA | QA |
| Time | 08:40 | 08:40 | 08:40 |
| 2" (50mm) | | 100.0 | 100.0 |
| 1 1/2" (37.5mm) | | 100.0 | 100.0 |
| 1" (25mm) | | 99.1 | 100.0 |
| 3/4" (19mm) | | 88.2 | 100.0 |
| 1/2" (12.5mm) | | 46.1 | 98.1 |
| 3/8" (9.5mm) | 100.0 | 22.7 | 86.6 |
| #4 (4.75mm) | 96.2 | 3.0 | 23.6 |
| #8 (2.36mm) | 80.5 | 1.7 | 6.3 |
| #16 (1.18mm) | 63.3 | 1.4 | 3.8 |
| #30 (.6mm) | 46.0 | 1.3 | 3.2 |
| #50 (.3mm) | 25.1 | 1.3 | 3.1 |
| #100 (.15mm) | 7.1 | 1.2 | 2.9 |
| #200 (75µm) | 1.3 | 1.12 | 2.7 |
| Pan | 0.0 | 0.00 | 0.0 |
| FM | 2.82 | | |
| Wash Loss (#200/75um) | 1.1 | 1.1 | 2.6 |
| Total Moisture | 3.09 | 2.26 | 2.52 |

# Daily Summary Report

Comments

Query Selections
Date Created 07/30/2026
Date Range 07/31/2026 - 08/062026
Plant Superior Hoover
Sample Type QA

# Aggregate Optimization Chart

Production Gradation Report

**PLANT #:** **P-36**

Contractor:

Sample Date: 7/30/26

Concrete Grade: **DM-4500HP**

Dates Test Represents: 7/31/2026 through 8/6/2026

5" Slump

MDOT No.:

| Agg. Class | Pit # | Source | Weight (SSD) | ft³ | Specific Gravity | % Contribution |
|---|---|---|---|---|---|---|
| 6AA | 71-47 | Presque Isle | 1370 | 8.16 | 2.69 | 45.7 |
| 26A | 71-47 | Presque Isle | 400 | 2.38 | 2.69 | 13.3 |
| 2NS | 63-115 | Ray Rd. | 1230 | 7.41 | 2.66 | 41.0 |
| | | **Total Wt** | **3000** | **17.96** | | 100.0 |

<----- Verify this number is 100%

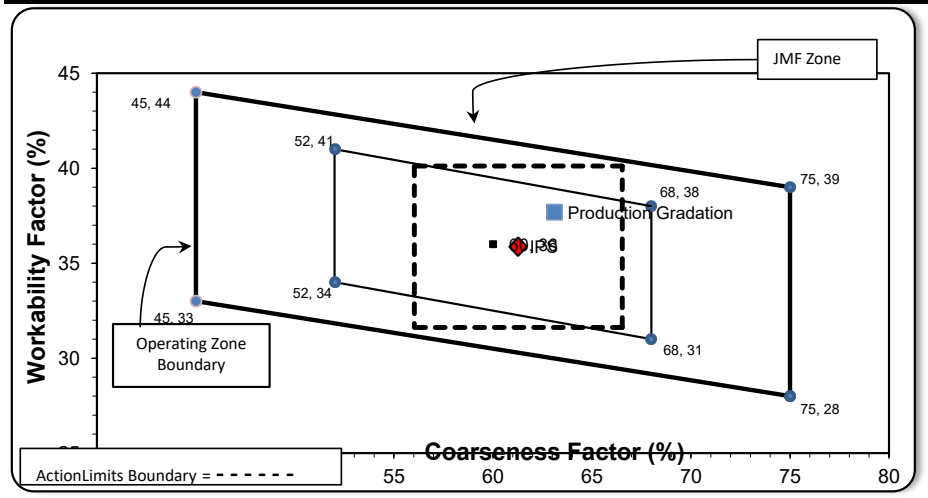

**Superior Materials, LLC**
30701 W. 10 Mile Rd.
Suite 500
Farmington Hills, MI 48336


| 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" | 100.0 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 |
| 3/4" | 87.4 | 100.0 | 100.0 | 94.2 | 5.8 | 5.8 |
| 1/2" | 35.8 | 92.5 | 100.0 | 69.7 | 24.6 | 30.3 |
| 3/8" | 17.5 | 75.8 | 100.0 | 59.1 | 10.6 | 40.9 |
| #4 | 2.5 | 14.9 | 95.8 | 42.4 | 16.7 | 57.6 |
| #8 | 1.7 | 4.4 | 82.5 | 35.2 | 7.2 | 64.8 |
| #16 | 1.5 | 2.5 | 62.5 | 26.6 | 8.5 | 73.4 |
| #30 | 1.4 | 2.1 | 46.5 | 20.0 | 6.7 | 80.0 |
| #50 | 1.4 | 1.9 | 24.6 | 11.0 | 9.0 | 89.0 |
| #100 | 1.3 | 1.8 | 6.2 | 3.4 | 7.6 | 96.6 |
| LBW | 1.0 | 1.6 | 0.8 | 1.0 | 2.4 | 99.0 |

*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: | 63 | Workability Factor: | 35 | Adjusted WF 37.7 |
|---|---|---|---|---|




Intial Production Sample (IPS)

| Coarseness Factor: | 61 |
|---|---|
| Workability Factor: | 36 |

| Sieve | Cumulative % Passing | % Retained | Cumulative % Retained |
|---|---|---|---|
| 2" | 100.0 | 0.0 | 0.0 |
| 1.5" | 100.0 | 0.0 | 0.0 |
| 1" | 99.3 | 0.7 | 0.7 |
| 3/4" | 89.2 | 10.1 | 10.8 |
| 1/2" | 70.7 | 18.5 | 29.3 |
| 3/8" | 60.7 | 10.0 | 39.3 |
| #4 | 44.4 | 16.3 | 55.6 |
| #8 | 35.9 | 8.5 | 64.1 |
| #16 | 27.3 | 8.6 | 72.7 |
| #30 | 19.1 | 8.2 | 80.9 |
| #50 | 7.4 | 11.7 | 92.6 |
| #100 | 1.9 | 5.6 | 98.1 |
| LBW | 0.7 | 1.2 | 99.3 |

PREPARED BY:
SM, LLC Technical Service

Approved By:
Nancy Donahue

# Aggregate Optimization Chart

Production Gradation Report

**PLANT #:** **P-102**

Sample Date: 7/30/26

Concrete Grade: **DM-4500HP**

Dates Test Represents: 7/31/2026 through 8/6/2026

1 inch slump

MDOT No.:

| Agg. Class | Pit # | Source | Weight (SSD) | ft³ | Specific Gravity | % Contribution |
|---|---|---|---|---|---|---|
| 6AA | 58-003 | Stone Co | 1550 | 9.23 | 2.69 | 50.8 |
| 1A | 58-003 | Stone Co | 350 | 2.09 | 2.69 | 11.5 |
| 2NS | 63-114 | Highland Lk | 1150 | 6.95 | 2.65 | 37.7 |
| | | **Total Wt** | **3050** | **18.27** | | 100.0 |

<----- Verify this number is 100%

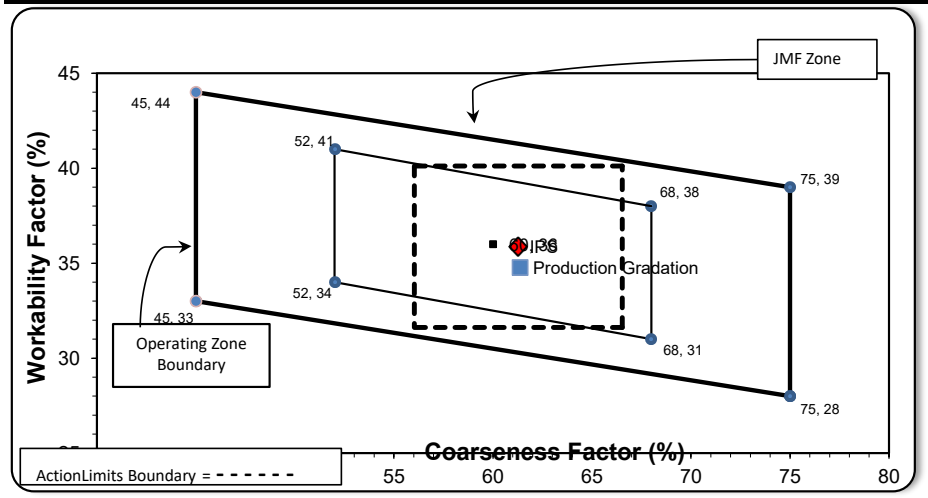
| Sieve | 6AA | 1A | 2NS | Cumulative % Passing | % Retained | Cumulative % Retained |
|---|---|---|---|---|---|---|
| 2" | 100.0 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 |
| 1.5" | 100.0 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 |
| 1" | 100.0 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 |
| 3/4" | 85.1 | 100.0 | 100.0 | 92.4 | 7.6 | 7.6 |
| 1/2" | 40.4 | 91.4 | 100.0 | 68.7 | 23.7 | 31.3 |
| 3/8" | 23.8 | 75.3 | 100.0 | 58.4 | 10.3 | 41.6 |
| #4 | 4.1 | 16.4 | 98.2 | 41.0 | 17.4 | 59.0 |
| #8 | 1.8 | 2.2 | 82.5 | 32.3 | 8.7 | 67.7 |
| #16 | 1.4 | 1.5 | 65.2 | 25.5 | 6.8 | 74.5 |
| #30 | 1.3 | 1.4 | 47.7 | 18.8 | 6.7 | 81.2 |
| #50 | 1.2 | 1.3 | 23.1 | 9.5 | 9.3 | 90.5 |
| #100 | 1.1 | 1.2 | 6.2 | 3.0 | 6.4 | 97.0 |
| LBW | 1.1 | 1.0 | 0.4 | 0.8 | 2.2 | 99.2 |


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


*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: | 61 | Workability Factor: | 32 | Adjusted WF 34.8 |
|---|---|---|---|---|




Intial Production Sample (IPS)

| Coarseness Factor: | 61 |
|---|---|
| Workability Factor: | 36 |

| Sieve | Cumulative % Passing | % Retained | Cumulative % Retained |
|---|---|---|---|
| 2" | 100.0 | 0.0 | 0.0 |
| 1.5" | 100.0 | 0.0 | 0.0 |
| 1" | 99.3 | 0.7 | 0.7 |
| 3/4" | 89.2 | 10.1 | 10.8 |
| 1/2" | 70.7 | 18.5 | 29.3 |
| 3/8" | 60.7 | 10.0 | 39.3 |
| #4 | 44.4 | 16.3 | 55.6 |
| #8 | 35.9 | 8.5 | 64.1 |
| #16 | 27.3 | 8.6 | 72.7 |
| #30 | 19.1 | 8.2 | 80.9 |
| #50 | 7.4 | 11.7 | 92.6 |
| #100 | 1.9 | 5.6 | 98.1 |
| LBW | 0.7 | 1.2 | 99.3 |

PREPARED BY:
SM, LLC Technical Service

Approved By:
Nancy Donahue

# Aggregate Optimization Chart

Production Gradation Report

**PLANT #:** **P-102**

Contractor: _____

Sample Date: 7/30/26

Concrete Grade: **DM-4500HP**

Dates Test Represents: 7/31/2026 through 8/6/2026

5 inch slump

MDOT No.: _____

| Agg. Class | Pit # | Source | Weight (SSD) | ft³ | Specific Gravity | % Contribution |
|---|---|---|---|---|---|---|
| 6AA | 58-003 | Stone Co | 1500 | 8.94 | 2.69 | 50.8 |
| 1A | 58-003 | Stone Co | 300 | 1.79 | 2.69 | 10.2 |
| 2NS | 63-114 | Highland Lk | 1150 | 6.95 | 2.65 | 39.0 |
| | | **Total Wt** | **2950** | **17.68** | | 100.0 |

<----- Verify this number is 100%

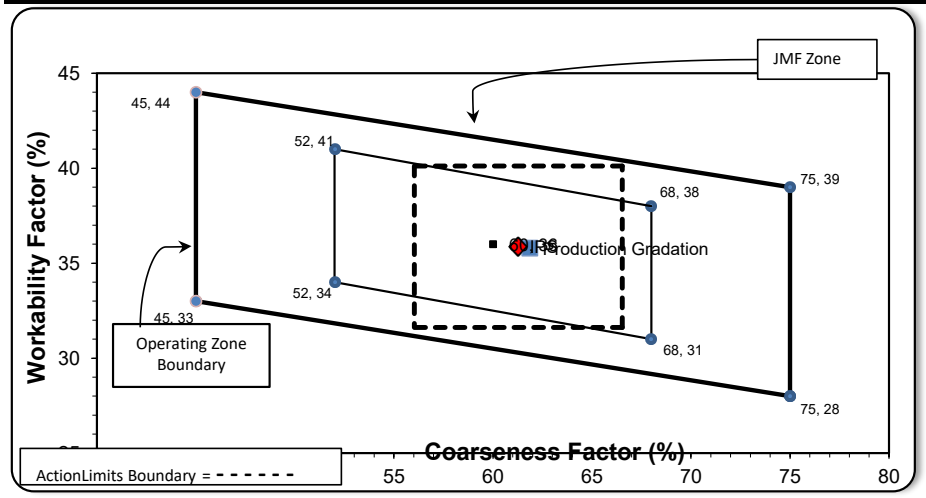

**Superior Materials, LLC**
30701 W. 10 Mile Rd.
Suite 500
Farmington Hills, MI 48336


| Sieve | 6AA | 1A | 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" | 100.0 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 |
| 3/4" | 85.1 | 100.0 | 100.0 | 92.4 | 7.6 | 7.6 |
| 1/2" | 40.4 | 91.4 | 100.0 | 68.8 | 23.6 | 31.2 |
| 3/8" | 23.8 | 75.3 | 100.0 | 58.7 | 10.1 | 41.3 |
| #4 | 4.1 | 16.4 | 98.2 | 42.0 | 16.7 | 58.0 |
| #8 | 1.8 | 2.2 | 82.5 | 33.3 | 8.7 | 66.7 |
| #16 | 1.4 | 1.5 | 65.2 | 26.3 | 7.0 | 73.7 |
| #30 | 1.3 | 1.4 | 47.7 | 19.4 | 6.9 | 80.6 |
| #50 | 1.2 | 1.3 | 23.1 | 9.7 | 9.7 | 90.3 |
| #100 | 1.1 | 1.2 | 6.2 | 3.1 | 6.6 | 96.9 |
| LBW | 1.1 | 1.0 | 0.4 | 0.8 | 2.3 | 99.2 |

*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: | 62 | Workability Factor: | 33 | Adjusted WF 35.8 |
|---|---|---|---|---|




Intial Production Sample (IPS)

| Coarseness Factor: | 61 |
|---|---|
| Workability Factor: | 36 |

| Sieve | Cumulative % Passing | % Retained | Cumulative % Retained |
|---|---|---|---|
| 2" | 100.0 | 0.0 | 0.0 |
| 1.5" | 100.0 | 0.0 | 0.0 |
| 1" | 99.3 | 0.7 | 0.7 |
| 3/4" | 89.2 | 10.1 | 10.8 |
| 1/2" | 70.7 | 18.5 | 29.3 |
| 3/8" | 60.7 | 10.0 | 39.3 |
| #4 | 44.4 | 16.3 | 55.6 |
| #8 | 35.9 | 8.5 | 64.1 |
| #16 | 27.3 | 8.6 | 72.7 |
| #30 | 19.1 | 8.2 | 80.9 |
| #50 | 7.4 | 11.7 | 92.6 |
| #100 | 1.9 | 5.6 | 98.1 |
| LBW | 0.7 | 1.2 | 99.3 |

PREPARED BY:
SM, LLC Technical Service

Approved By:
Nancy Donahue

# Aggregate Optimization Chart

Production Gradation Report

**PLANT #:** **P-103**

Contractor: _____

Sample Date: 7/30/26

Concrete Grade: **DM-4500HP**

Dates Test Represents: 7/31/2026 through 8/6/2026

1 inch slump

MDOT No.: _____

| Agg. Class | Pit # | Source | Weight (SSD) | ft³ | Specific Gravity | % Contribution |
|---|---|---|---|---|---|---|
| 6AA | 58-003 | Stone Co | 1550 | 9.23 | 2.69 | 50.8 |
| 1A | 58-003 | Stone Co | 350 | 2.09 | 2.69 | 11.5 |
| 2NS | 63-114 | Highland Lk | 1150 | 6.95 | 2.65 | 37.7 |
| | | **Total Wt** | **3050** | **18.27** | | 100.0 |

<----- Verify this number is 100%

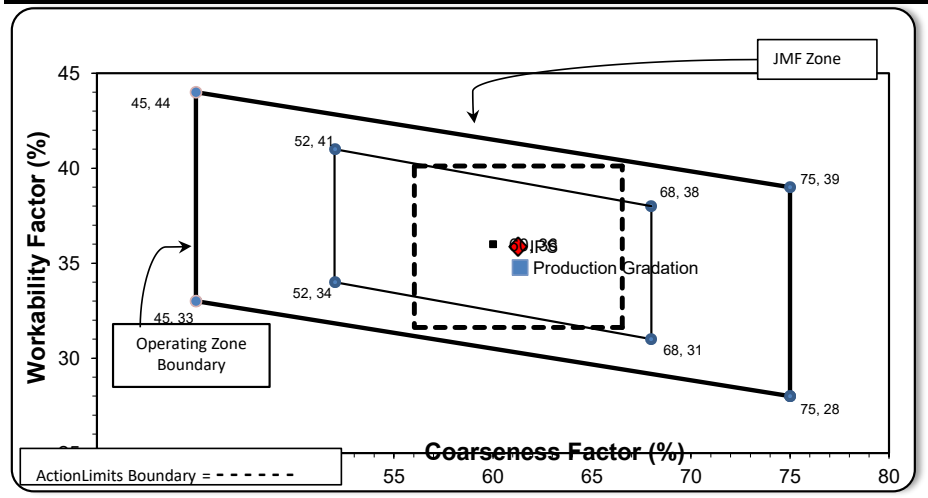

**Superior Materials, LLC**
30701 W. 10 Mile Rd.
Suite 500
Farmington Hills, MI 48336


| Sieve | 6AA | 1A | 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" | 100.0 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 |
| 3/4" | 85.1 | 100.0 | 100.0 | 92.4 | 7.6 | 7.6 |
| 1/2" | 40.4 | 91.4 | 100.0 | 68.7 | 23.7 | 31.3 |
| 3/8" | 23.8 | 75.3 | 100.0 | 58.4 | 10.3 | 41.6 |
| #4 | 4.1 | 16.4 | 98.2 | 41.0 | 17.4 | 59.0 |
| #8 | 1.8 | 2.2 | 82.5 | 32.3 | 8.7 | 67.7 |
| #16 | 1.4 | 1.5 | 65.2 | 25.5 | 6.8 | 74.5 |
| #30 | 1.3 | 1.4 | 47.7 | 18.8 | 6.7 | 81.2 |
| #50 | 1.2 | 1.3 | 23.1 | 9.5 | 9.3 | 90.5 |
| #100 | 1.1 | 1.2 | 6.2 | 3.0 | 6.4 | 97.0 |
| LBW | 1.1 | 1.0 | 0.4 | 0.8 | 2.2 | 99.2 |

*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: | 61 | Workability Factor: | 32 | Adjusted WF 34.8 |
|---|---|---|---|---|




Intial Production Sample (IPS)

| Coarseness Factor: | 61 |
|---|---|
| Workability Factor: | 36 |

| Sieve | Cumulative % Passing | % Retained | Cumulative % Retained |
|---|---|---|---|
| 2" | 100.0 | 0.0 | 0.0 |
| 1.5" | 100.0 | 0.0 | 0.0 |
| 1" | 99.3 | 0.7 | 0.7 |
| 3/4" | 89.2 | 10.1 | 10.8 |
| 1/2" | 70.7 | 18.5 | 29.3 |
| 3/8" | 60.7 | 10.0 | 39.3 |
| #4 | 44.4 | 16.3 | 55.6 |
| #8 | 35.9 | 8.5 | 64.1 |
| #16 | 27.3 | 8.6 | 72.7 |
| #30 | 19.1 | 8.2 | 80.9 |
| #50 | 7.4 | 11.7 | 92.6 |
| #100 | 1.9 | 5.6 | 98.1 |
| LBW | 0.7 | 1.2 | 99.3 |

PREPARED BY:
SM, LLC Technical Service

Approved By:
Nancy Donahue

# Aggregate Optimization Chart

Production Gradation Report

**PLANT #:** **P-103**

Contractor: _____

Sample Date: 7/30/26

Concrete Grade: **DM-4500HP**

Dates Test Represents: 7/31/2026 through 8/6/2026

5 inch slump

MDOT No.: _____

| Agg. Class | Pit # | Source | Weight (SSD) | ft³ | Specific Gravity | % Contribution |
|---|---|---|---|---|---|---|
| 6AA | 58-003 | Stone Co | 1500 | 8.94 | 2.69 | 50.8 |
| 1A | 58-003 | Stone Co | 300 | 1.79 | 2.69 | 10.2 |
| 2NS | 63-114 | Highland Lk | 1150 | 6.95 | 2.65 | 39.0 |
| | | **Total Wt** | **2950** | **17.68** | | 100.0 |

<----- Verify this number is 100%

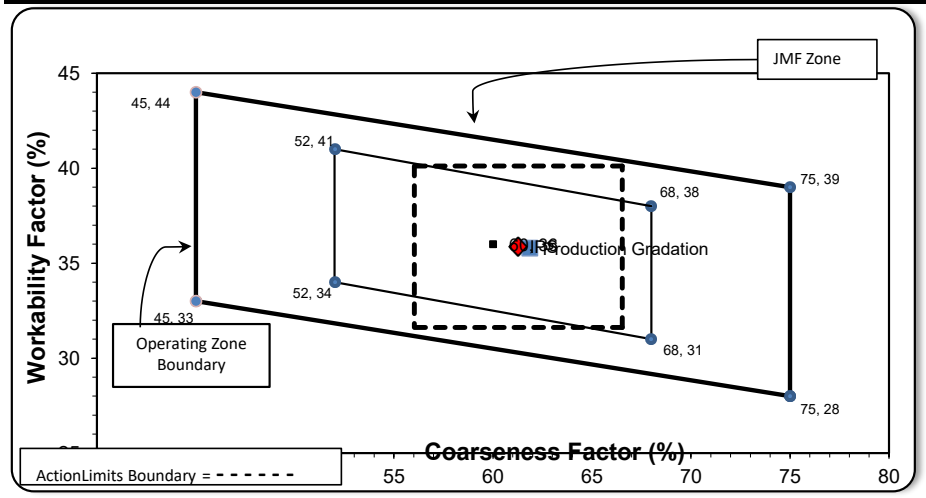

**Superior Materials, LLC**
30701 W. 10 Mile Rd.
Suite 500
Farmington Hills, MI 48336


| Sieve | 6AA | 1A | 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" | 100.0 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 |
| 3/4" | 85.1 | 100.0 | 100.0 | 92.4 | 7.6 | 7.6 |
| 1/2" | 40.4 | 91.4 | 100.0 | 68.8 | 23.6 | 31.2 |
| 3/8" | 23.8 | 75.3 | 100.0 | 58.7 | 10.1 | 41.3 |
| #4 | 4.1 | 16.4 | 98.2 | 42.0 | 16.7 | 58.0 |
| #8 | 1.8 | 2.2 | 82.5 | 33.3 | 8.7 | 66.7 |
| #16 | 1.4 | 1.5 | 65.2 | 26.3 | 7.0 | 73.7 |
| #30 | 1.3 | 1.4 | 47.7 | 19.4 | 6.9 | 80.6 |
| #50 | 1.2 | 1.3 | 23.1 | 9.7 | 9.7 | 90.3 |
| #100 | 1.1 | 1.2 | 6.2 | 3.1 | 6.6 | 96.9 |
| LBW | 1.1 | 1.0 | 0.4 | 0.8 | 2.3 | 99.2 |

*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: | 62 | Workability Factor: | 33 | Adjusted WF 35.8 |
|---|---|---|---|---|




Intial Production Sample (IPS)

| Coarseness Factor: | 61 |
|---|---|
| Workability Factor: | 36 |

| Sieve | Cumulative % Passing | % Retained | Cumulative % Retained |
|---|---|---|---|
| 2" | 100.0 | 0.0 | 0.0 |
| 1.5" | 100.0 | 0.0 | 0.0 |
| 1" | 99.3 | 0.7 | 0.7 |
| 3/4" | 89.2 | 10.1 | 10.8 |
| 1/2" | 70.7 | 18.5 | 29.3 |
| 3/8" | 60.7 | 10.0 | 39.3 |
| #4 | 44.4 | 16.3 | 55.6 |
| #8 | 35.9 | 8.5 | 64.1 |
| #16 | 27.3 | 8.6 | 72.7 |
| #30 | 19.1 | 8.2 | 80.9 |
| #50 | 7.4 | 11.7 | 92.6 |
| #100 | 1.9 | 5.6 | 98.1 |
| LBW | 0.7 | 1.2 | 99.3 |

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