

Aggregate Optimization Chart

MIX ID'S: DDT0F7ET

Production Gradation Report

PLANT #: **P-102**

Sample Date: 7/9/18

Concrete Grade: **TM**

Contractor: _____

Dates Test Represents: 7/10/2018 through 7/16/2018

MDOT No.: _____

| Agg. Class | Pit # | Source | Weight (SSD) | ft ³ | Specific Gravity | % Contribution |
|-----------------|--------|---------|--------------|-----------------|------------------|----------------|
| 6AA | 58-003 | Stoneco | 1495 | 8.91 | 2.69 | 49.1 |
| 26A | 58-003 | Stoneco | 350 | 2.09 | 2.69 | 11.5 |
| 2NS | 38-046 | Chelsea | 1200 | 7.26 | 2.65 | 39.4 |
| Total Wt | | | 3045 | 18.25 | | 100.0 |

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



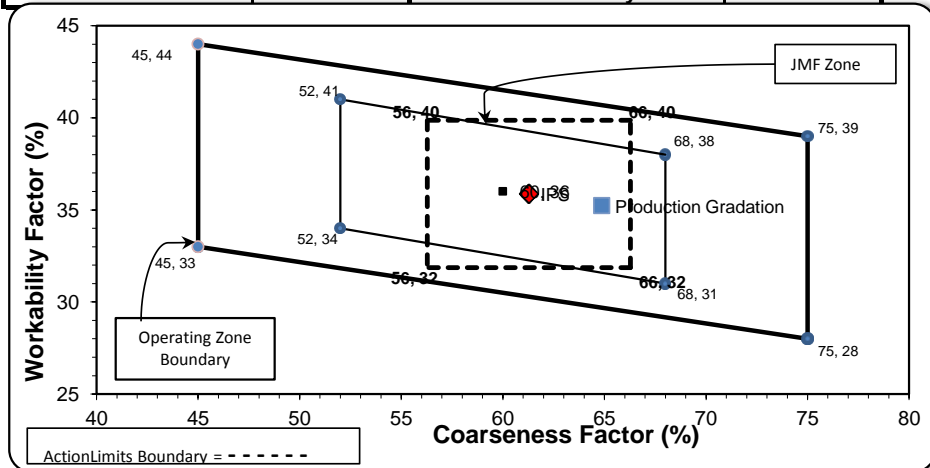
Superior Materials, LLC
 30701 W. 10 Mile Rd.
 Suite 500
 Farmington Hills, MI 48336

| 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" | 99.7 | 100.0 | 100.0 | 99.9 | 0.1 | 0.1 |
| 3/4" | 84.0 | 100.0 | 100.0 | 92.1 | 7.7 | 7.9 |
| 1/2" | 36.8 | 99.8 | 100.0 | 68.9 | 23.2 | 31.1 |
| 3/8" | 16.8 | 89.8 | 100.0 | 58.0 | 11.0 | 42.0 |
| #4 | 3.4 | 15.2 | 100.0 | 42.8 | 15.2 | 57.2 |
| #8 | 1.4 | 5.6 | 86.0 | 35.2 | 7.6 | 64.8 |
| #16 | 1.3 | 2.5 | 60.0 | 24.6 | 10.7 | 75.4 |
| #30 | 1.1 | 1.6 | 40.0 | 16.5 | 8.1 | 83.5 |
| #50 | 1.0 | 1.5 | 18.0 | 7.8 | 8.7 | 92.2 |
| #100 | 0.9 | 1.2 | 4.0 | 2.2 | 5.6 | 97.8 |
| LBW | 0.6 | 1.0 | 0.8 | 0.7 | 1.4 | 99.3 |

*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: | 65 | Workability Factor: | 35 |
|---------------------------|-----------|----------------------------|-----------|



Initial 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:

Aggregate Optimization Chart

MIX ID'S: DDT0F7ET

Production Gradation Report

PLANT #: **P-36**

Sample Date: 7/9/18

Concrete Grade: **TM**

Contractor: _____

Dates Test Represents: 7/10/2018 through 7/16/2018

MDOT No.: _____

| Agg. Class | Pit # | Source | Weight (SSD) | ft ³ | Specific Gravity | % Contribution |
|-----------------|-------|----------------|--------------|-----------------|------------------|----------------|
| 6AA | 71-47 | Presque Isle | 1220 | 7.46 | 2.62 | 40.7 |
| 26A | 71-47 | Presque Isle | 575 | 3.52 | 2.62 | 19.2 |
| 2NS | 63-92 | AA Grange Hall | 1200 | 7.26 | 2.65 | 40.1 |
| Total Wt | | | 2995 | 18.24 | | 100.0 |

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



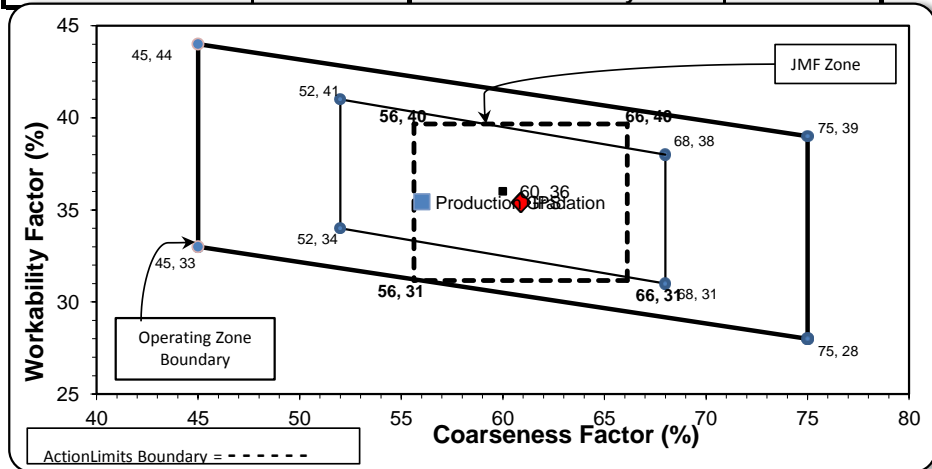
Superior Materials, LLC
 30701 W. 10 Mile Rd.
 Suite 500
 Farmington Hills, MI 48336

| 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" | 89.0 | 93.5 | 100.0 | 94.3 | 5.7 | 5.7 |
| 1/2" | 42.3 | 80.5 | 100.0 | 72.8 | 21.5 | 27.2 |
| 3/8" | 20.4 | 80.5 | 100.0 | 63.8 | 8.9 | 36.2 |
| #4 | 3.0 | 19.8 | 97.0 | 43.9 | 19.9 | 56.1 |
| #8 | 2.1 | 6.3 | 83.3 | 35.4 | 8.4 | 64.6 |
| #16 | 1.9 | 3.5 | 67.7 | 28.6 | 6.9 | 71.4 |
| #30 | 1.8 | 2.9 | 49.4 | 21.1 | 7.5 | 78.9 |
| #50 | 1.7 | 2.6 | 21.5 | 9.8 | 11.3 | 90.2 |
| #100 | 1.6 | 2.4 | 2.8 | 2.2 | 7.6 | 97.8 |
| LBW | 1.3 | 1.8 | 0.2 | 1.0 | 1.3 | 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 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: **56** **Workability Factor:** **35**



Initial Production Sample (IPS)

Coarseness Factor: **61**
Workability Factor: **35**

| 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" | 95.9 | 4.1 | 4.1 |
| 1/2" | 74.3 | 21.5 | 25.7 |
| 3/8" | 60.7 | 13.6 | 39.3 |
| #4 | 42.6 | 18.1 | 57.4 |
| #8 | 35.4 | 7.2 | 64.6 |
| #16 | 28.7 | 6.7 | 71.3 |
| #30 | 20.5 | 8.2 | 79.5 |
| #50 | 9.8 | 10.7 | 90.2 |
| #100 | 2.1 | 7.7 | 97.9 |
| LBW | 0.9 | 1.2 | 99.1 |

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 SM, LLC Technical Service

Approved By: