

Aggregate Optimization Chart

MIX ID'S: DDT0F7ET

Production Gradation Report

PLANT #: **P-102**

Sample Date: 7/2/18

Concrete Grade: **TM**

Contractor: _____

Dates Test Represents: 7/3/2018 through 7/9/2018

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%

| 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" | 99.9 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 |
| 3/4" | 82.0 | 100.0 | 100.0 | 91.2 | 8.8 | 8.8 |
| 1/2" | 42.5 | 99.8 | 100.0 | 71.7 | 19.4 | 28.3 |
| 3/8" | 23.6 | 86.8 | 100.0 | 61.0 | 10.8 | 39.0 |
| #4 | 3.0 | 17.1 | 100.0 | 42.8 | 18.1 | 57.2 |
| #8 | 1.1 | 5.9 | 90.0 | 36.7 | 6.2 | 63.3 |
| #16 | 0.8 | 2.6 | 64.0 | 25.9 | 10.8 | 74.1 |
| #30 | 0.7 | 1.6 | 42.0 | 17.1 | 8.8 | 82.9 |
| #50 | 0.6 | 1.4 | 19.0 | 7.9 | 9.1 | 92.1 |
| #100 | 0.6 | 1.2 | 4.0 | 2.0 | 5.9 | 98.0 |
| LBW | 0.5 | 1.0 | 1.2 | 0.8 | 1.2 | 99.2 |

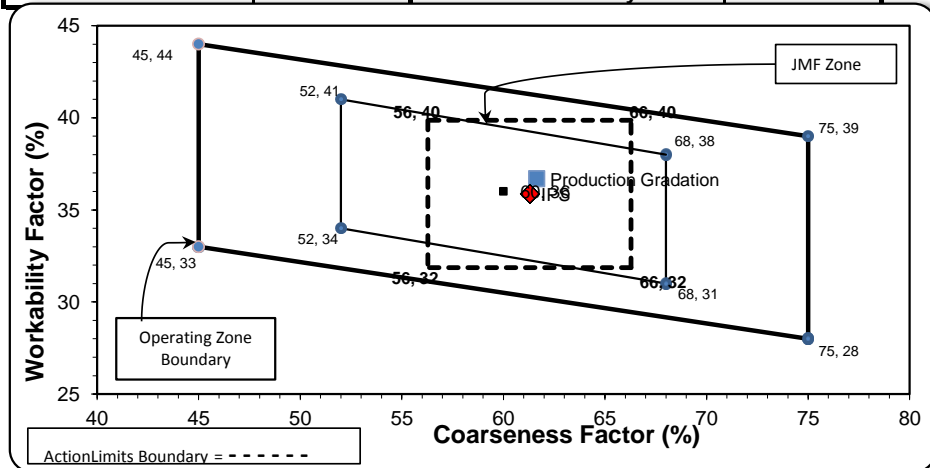
*Maximum % Retained must be above the 3/8" sieve.
 *Any two adjacent sieves must equal 10% except max., nom. max., #100 and #200 sieves.
 *% Retained must be at least 4% for each sieve except max., nom. max., #100 and #200 sieves.
 *% Retained must be at least 8% for the 1" sieve when a 2" max. size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



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

Production Gradation Batch Plant Gradations Aggregate Supplier Gradations

Coarseness Factor: 62 **Workability Factor: 37**



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: 7/2/18

Concrete Grade: **TM**

Contractor: _____

Dates Test Represents: 7/3/2018 through 7/9/2018

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%

| 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" | 87.2 | 100.0 | 100.0 | 94.8 | 5.1 | 5.2 |
| 1/2" | 32.1 | 95.9 | 100.0 | 71.6 | 23.2 | 28.4 |
| 3/8" | 12.0 | 81.7 | 100.0 | 60.6 | 10.9 | 39.4 |
| #4 | 2.4 | 19.3 | 97.8 | 43.9 | 16.8 | 56.1 |
| #8 | 1.7 | 6.0 | 86.5 | 36.5 | 7.4 | 63.5 |
| #16 | 1.5 | 3.5 | 71.0 | 29.7 | 6.8 | 70.3 |
| #30 | 1.4 | 2.9 | 51.7 | 21.8 | 7.9 | 78.2 |
| #50 | 1.3 | 2.6 | 21.7 | 9.7 | 12.1 | 90.3 |
| #100 | 1.2 | 2.4 | 2.9 | 2.1 | 7.6 | 97.9 |
| LBW | 1.3 | 2.0 | 0.2 | 1.0 | 1.1 | 99.0 |

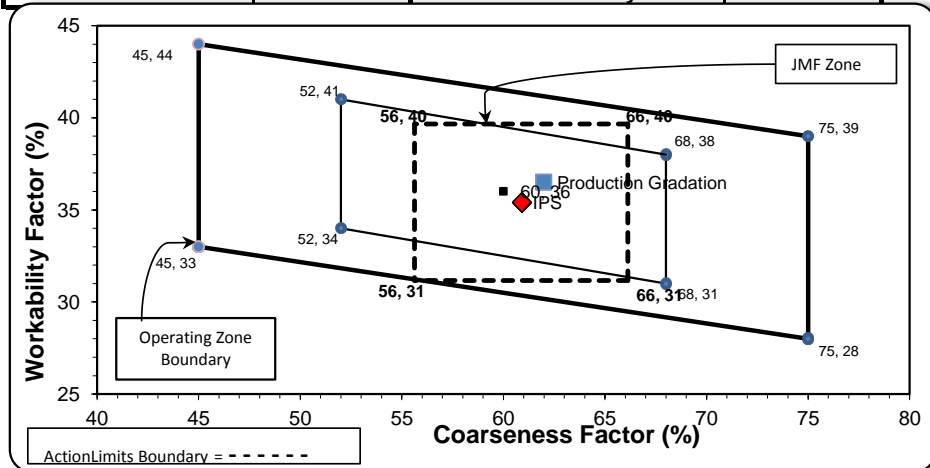


Superior Materials, LLC
 30701 W. 10 Mile Rd.
 Suite 500
 Farmington Hills, MI 48336

*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 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: 62 **Workability Factor: 37**



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 | 25.5 | 29.6 |
| 3/8" | 60.7 | 39.3 | 39.3 |
| #4 | 42.6 | 57.4 | 57.4 |
| #8 | 35.4 | 64.6 | 64.6 |
| #16 | 28.7 | 71.3 | 71.3 |
| #30 | 20.5 | 79.5 | 79.5 |
| #50 | 9.8 | 90.2 | 90.2 |
| #100 | 2.1 | 97.9 | 97.9 |
| LBW | 0.9 | 99.1 | 99.1 |

PREPARED BY:
 SM, LLC Technical Service

Approved By: