

Aggregate Optimization Chart

Production Gradation Report

PLANT #: **P-32**

Sample Date: 9/13/21

Dates Test Represents: 9/14/2021 through 9/20/2021

Concrete Grade: **DM**

Contractor: _____

MDOT No.: _____

| Agg. Class | Pit # | Source | Weight (SSD) | ft ³ | Specific Gravity | Contribution % |
|------------|--------|--------------|--------------|-----------------|------------------|----------------|
| 6AA | 71-47 | Presque Isle | 1600 | 9.79 | 2.62 | 55.1 |
| 26A | 71-47 | Presque Isle | 155 | 0.95 | 2.62 | 5.3 |
| ZNS | 95-013 | Smelter Bay | 1150 | 6.95 | 2.65 | 39.6 |
| Total Wt | | | | | | 2905 |
| | | | | | | 17.69 |
| | | | | | | 100.0 |

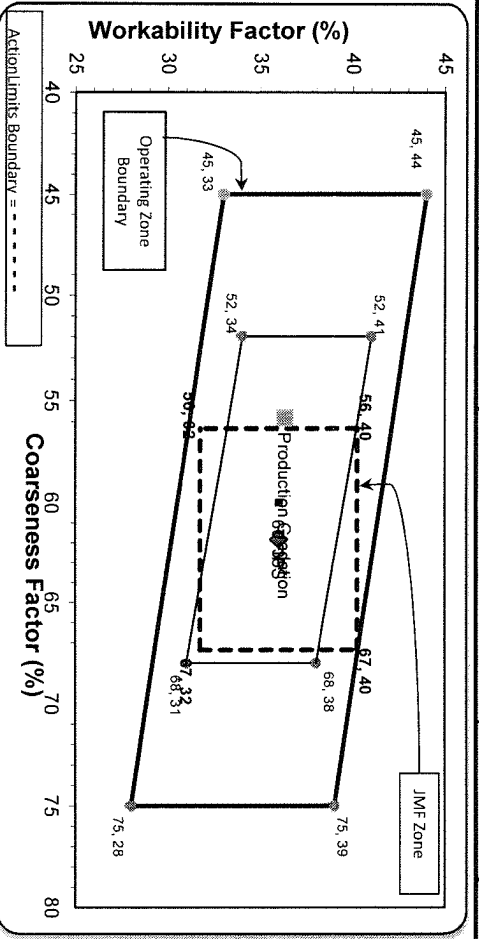
Verify this number is 100%

| Sieve | 6AA | 26A | ZNS | 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" | 98.1 | 100.0 | 100.0 | 99.0 | 1.0 | 1.0 |
| 3/4" | 91.9 | 100.0 | 100.0 | 95.5 | 3.4 | 4.5 |
| 1/2" | 58.0 | 94.9 | 100.0 | 76.6 | 18.9 | 23.4 |
| 3/8" | 34.7 | 81.3 | 100.0 | 63.0 | 13.6 | 37.0 |
| #4 | 6.3 | 14.8 | 95.0 | 41.9 | 21.2 | 58.1 |
| #8 | 1.8 | 4.5 | 82.3 | 33.8 | 8.1 | 66.2 |
| #16 | 1.4 | 2.6 | 67.3 | 27.6 | 6.3 | 72.4 |
| #30 | 1.3 | 2.2 | 49.4 | 20.4 | 7.2 | 79.6 |
| #50 | 1.2 | 2.1 | 25.2 | 10.7 | 9.6 | 89.3 |
| #100 | 1.2 | 1.9 | 8.2 | 4.0 | 6.7 | 96.0 |
| LBW | 1.0 | 1.6 | 1.6 | 1.3 | 2.7 | 98.7 |

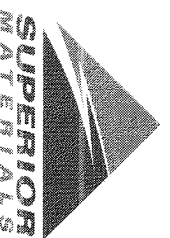
*Maximum % Retained must be above the 3/8" sieve.
 *Any two adjacent sieves must equal 10% except max.
 nom. max., #100 and #200 sieves.
 *% Retained must be at least 4% for each sieve except max.
 nom. max., #100 and #200 sieves.
 *% Retained must be at least 8% for the 1" sieve when
 a 2" max. size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

| Production Gradation | Coarseness Factor: | Workability Factor: | Adjusted WF |
|---|--------------------|---------------------|-------------|
| <input checked="" type="radio"/> Batch Plant Gradations | 56 | 34 | 36.3 |
| <input type="radio"/> Aggregate Supplier Gradations | | | |

| Initial Production Sample (IPS) | Coarseness Factor: | Workability Factor: |
|---------------------------------|--------------------|---------------------|
| | 62 | 36 |



| 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" | 95.0 | 5.0 | 5.0 |
| 1/2" | 72.3 | 22.8 | 27.7 |
| 3/8" | 60.4 | 11.8 | 39.6 |
| #4 | 42.6 | 17.8 | 57.4 |
| #8 | 36.0 | 6.6 | 64.0 |
| #16 | 29.5 | 6.5 | 70.5 |
| #30 | 20.3 | 9.2 | 79.7 |
| #50 | 9.5 | 10.8 | 90.5 |
| #100 | 3.4 | 6.1 | 96.6 |
| LBW | 1.3 | 2.1 | 98.7 |



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PREPARED BY:
 SM, LLC Technical Service

Approved By: _____

Plant 958-JMT

Product 1022-2NS GR - Smelter Bay

Name/Title Doug Storey / QC Technician

Period: 09/12/2021 - 09/18/2021

Report Date 09/17/2021

| Procedure | Sieve/Test | Result | Unit | 2NS GR Spec |
|-----------|-----------------------|--------|------|-------------|
| | 3/8" (9.5mm) | 100.0 | % | 100-100 |
| | #4 (4.75mm) | 95.0 | % | 95-100 |
| | #8 (2.36mm) | 82.3 | % | 65-95 |
| | #16 (1.18mm) | 67.3 | % | 35-75 |
| | #30 (.6mm) | 49.4 | % | 20-55 |
| | #50 (.3mm) | 25.2 | % | 10-30 |
| | #100 (.15mm) | 8.2 | % | 0-10 |
| | #200 (75µm) | 2.1 | % | |
| | FM | 2.72 | | 2.6-3 |
| | Wash Loss (#200/75um) | 1.6 | % | 0-3 |
| | Total Moisture | 4.0 | % | |

Plant 958-JMT
 Product 1067-26A Mod LS
 Period: 09/12/2021 - 09/18/2021

Name/Title Doug Storey / QC Technician
 Report Date 09/17/2021

| 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) | 94.9 | % | 95-100 |
| | 3/8" (9.5mm) | 81.3 | % | 60-95 |
| | #4 (4.75mm) | 14.8 | % | 5-30 |
| | #8 (2.36mm) | 4.5 | % | 0-12 |
| | #16 (1.18mm) | 2.6 | % | |
| | #30 (.6mm) | 2.2 | % | |
| | #50 (.3mm) | 2.1 | % | |
| | #100 (.15mm) | 1.9 | % | |
| | #200 (75µm) | 1.7 | % | |
| | Wash Loss (#200/75um) | 1.6 | % | 0-3 |
| | Total Moisture | 2.5 | % | |

Plant 958-JMT

Product 1054-6AA LS PI

Name/Title Doug Storey / QC Technician

Period: 09/12/2021 - 09/18/2021

Report Date 09/17/2021

| Procedure | Sieve/Test | Result | Unit | 6AA LS PI Spec |
|-----------|-----------------------|--------|------|----------------|
| | 2" (50mm) | 100.0 | % | |
| | 1 1/2" (37.5mm) | 100.0 | % | 100-100 |
| | 1" (25mm) | 98.1 | % | 95-100 |
| | 3/4" (19mm) | 91.9 | % | |
| | 1/2" (12.5mm) | 58.0 | % | 30-60 |
| | 3/8" (9.5mm) | 34.7 | % | |
| | #4 (4.75mm) | 6.3 | % | 0-8 |
| | #8 (2.36mm) | 1.8 | % | |
| | #16 (1.18mm) | 1.4 | % | |
| | #30 (.6mm) | 1.3 | % | |
| | #50 (.3mm) | 1.2 | % | |
| | #100 (.15mm) | 1.2 | % | |
| | #200 (75µm) | 1.1 | % | |
| | Wash Loss (#200/75um) | 1.0 | % | 0-2 |
| | Total Moisture | 2.9 | % | |