Version: V03.40

# Oklahoma Department of Transportation Mix Design Report

Asphalt Concrete, Type S3 (PG 64-22 OK) Mat'l. Code: asco009
*(Material Full Name and Material Code)*

Binder ID: B1
*(Design Type and Design Type ID)*

Glover & Associates Inc. P/S # m00745
*(Producer/Supplier Name and Producer/Supplier Code)*

S3c00931300200
*(Mix ID)*

Glover & Assoc. Asphalt Co.- (McAllester,OK) PLANT ID # m00745-01
*(Plant Name and Plant ID)*

| Aggregate | Producer/Supplier | % USED |
|---|---|---|
| 3/4" Chips | Dolese Co (Hartshorne, OK) P/S # m002756101 | 40 |
| 3/8" Chips | Dolese Co (Hartshorne, OK) P/S # m002756101 | 10 |
| Scrns. | Dolese Co (Hartshorne, OK) P/S # m002756101 | 35 |
| Sand (Unlisted Source) | Arkansas River Sand (Spiro, OK) | 15 |

**Asphalt Cement:** Asphaltic Cement Type PG 64-22 OK, acem003, Lion Oil Co. (Muskogee, OK), m00511
*(Material Full Name, Material Code, Producer/Supplier Name, Producer/Supplier Code)*

Requires Form 93-E0 signed by the Department for production use.
-Oklahoma D.O.T. Materials-

| Sieve Size | 3/4" Chips (Dolese Co (Hartshorne, OK) P/S # m002756101) | 3/8" Chips (Dolese Co (Hartshorne, OK) P/S # m002756101) | Scrns. (Dolese Co (Hartshorne, OK) P/S # m002756101) | Sand (Unlisted Source) (Arkansas River Sand (Spiro, OK)) | | | | | Comb. Agg. | JMF | Min. | Max. | % Tol. (±) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 in (25 mm) | 100 | 100 | 100 | 100 | | | | | 100 | 100 | 100 | 100 | 0 |
| 3/4 in (19 mm) | 100 | 100 | 100 | 100 | | | | | 100 | 100 | 93 | 100 | 7 |
| 1/2 in (12.5 mm) | 64 | 100 | 100 | 100 | | | | | 86 | 86 | 79 | 93 | 7 |
| 3/8 in (9.5 mm) | 37 | 95 | 100 | 100 | | | | | 74 | 74 | 67 | 81 | 7 |
| #4 (4.75 mm) | 5 | 25 | 94 | 96 | | | | | 52 | 52 | 45 | 59 | 7 |
| #8 (2.36 mm) | 4 | 6 | 64 | 94 | | | | | 39 | 39 | 34 | 44 | 5 |
| #16 (1.18 mm) | 3 | 3 | 41 | 91 | | | | | 30 | 30 | 26 | 34 | 4 |
| #30 (.600 mm) | 3 | 3 | 26 | 79 | | | | | 22 | 22 | 18 | 26 | 4 |
| #50 (.300 mm) | 3 | 2 | 19 | 31 | | | | | 13 | 13 | 9 | 17 | 4 |
| #100 (.150 mm) | 2 | 1 | 14 | 4 | | | | | 6 | 6 | 3 | 9 | 3 |
| #200 (.075 mm) | 1.7 | 1.2 | 10.1 | 0.6 | | | | | 4.4 | 4.4 | 2.4 | 6.4 | 2 |
| AC Content % | | | | | | | | | 4.7 | 4.7 | 4.3 | 5.1 | 0.4 |

| | °F (°C) | Required |
|---|---|---|
| Mix temperature @ discharge from mixer: | | ± 20 °F (± 10 °C) |
| Optimum roadway compaction temperature: | | |
| Laboratory mixing temperature: | | |
| Laboratory compaction temperature: | | |

| Tests on Asphalt Cement | Found |
|---|---|
| Specific Gravity @ 77 ° F | 1.0100 |

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-Oklahoma D.O.T. Materials-

**Tests on Compressed Mixtures (@ Design AC)**

| | # Gyr. | % Density of Gmm | % Density Required |
|---|---|---|---|
| Nini | 6 | 89.2 | 85.5 - 91.5 |
| Ndes | 50 | | 96.0 |

| Tests on Aggregates | | Required | | Units |
|---|---|---|---|---|
| Durability Index | 66 | 40 | min. | % |
| F.A.A. %U | | N/A | | % |
| Flat and Elongated | | 10 | max. | % |
| Fractured Faces | 100/100 | 85/80 | min. | % |
| Insoluble Residue | 15.4 | N/A | | % |
| LA Abrasion | 19.7 | 40 | max. | % |
| Micro-Deval | 14.1 | N/A | | % |
| Permeability | 4.1 | 12.5 | max. | $10^{-5}$cm/s |
| Sand Equivalent | 59 | 40 | min. | % |
| IOC | 0.29 | | | % |
| Gse | 2.603 | | | |
| Gsb | 2.565 | | | |
| Specimen Weight | 4650 | | | g |

**Tests on Compressed Mixtures**

| %AC | Gmb | Gmm | % Density of Gmm | % Density Required Design / Field | % VMA | % VMA Required Design / Field | % VFA | % VFA Required |
|---|---|---|---|---|---|---|---|---|
| 4.2 | 2.299 | 2.441 | 94.2 | 96.0 / 94.5 - 97.4 | 14.1 | 13.5 / 13.0 | 58.9 | 70 - 75 |
| 4.7 | 2.325 | 2.423 | 96.0 | | 13.6 | | 70.6 | |
| 5.2 | 2.349 | 2.406 | 97.6 | | 13.2 | | 81.8 | |

| Dust Prop. | Dust Prop. Req. |
|---|---|
| 1.2 | 0.6 - 1.6 |
| 1.0 | |
| 0.9 | |

ITS (PSI) 156.6 N/A min.
TSR 0.91 0.80 / 0.75 min. (Design / Field)
Compacted Wt. (lbs/sy/1" thick) = 106.6 @ 4.7 % Asphalt Cement

**Hamburg Rut Test Depth (mm)** 1.86 12.50 max. @ 10,000 cycles

**MEETS SPECIFICATION REQUIREMENTS PER SPECIAL PROVISION 708-26(a-f) 09**

**Comments:**

**Last Modified By:** Schratwieser, Edward P. eschratw
*(User Name and User ID)*

**Date:** 1/25/2013
*(mm/dd/yyyy)*