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 - Recycled ID: B2
*(Design Type and Design Type ID)*

Overland Corp P/S # m00433
*(Producer/Supplier Name and Producer/Supplier Code)*

S3pv0261501600
*(Mix ID)*

Overland Corp (Ardmore, OK) - 400TPH PLANT ID # m00433-01
*(Plant Name and Plant ID)*

| Aggregate | Producer/Supplier | % USED |
|---|---|---|
| #67 Rock | Dolese Co (Ardmore, OK) P/S # m002701001 | 20 |
| 3/8" Chips | Dolese Co (Ardmore, OK) P/S # m002701001 | 25 |
| C-33 Scrns. | Martin-Marietta (Mill Creek, OK) P/S # m002303502 | 18 |
| Sand | Thackerville Sand & Gravel (Thackerville, OK) P/S # m001974301 | 12 |
| Fine R.A.P. | Contractor / Project Site P/S # Contractor | 25 |

**Asphalt Cement:** Asphaltic Cement Type PG 64-22 OK, acem003, Valero (Ardmore, OK), m00352
*(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 | Dolese Co (Ardmore, OK) P/S # m002701001 | Dolese Co (Ardmore, OK) P/S # m002701001 | Martin-Marietta (Mill Creek, OK) P/S # m002303502 | Thackerville Sand & Gravel (Thackerville, OK) P/S # m001974301 | Contractor / Project Site P/S # Contractor | | | | Comb. Agg. | JMF | Min. | Max. | % Tol. (±) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | #67 Rock | 3/8" Chips | C-33 Scrns. | Sand | Fine R.A.P. | | | | | | | | |
| 1 in (25 mm) | 100 | 100 | 100 | 100 | 100 | | | | 100 | **100** | 100 | 100 | 0 |
| 3/4 in (19 mm) | 95 | 100 | 100 | 100 | 100 | | | | 99 | **99** | 92 | 100 | 7 |
| 1/2 in (12.5 mm) | 50 | 100 | 100 | 100 | 100 | | | | 90 | **90** | 83 | 97 | 7 |
| 3/8 in (9.5 mm) | 26 | 96 | 100 | 100 | 99 | | | | 84 | **84** | 77 | 91 | 7 |
| #4 (4.75 mm) | 6 | 28 | 99 | 100 | 80 | | | | 58 | **58** | 51 | 65 | 7 |
| #8 (2.36 mm) | 3 | 7 | 78 | 99 | 60 | | | | 43 | **43** | 38 | 48 | 5 |
| #16 (1.18 mm) | 3 | 4 | 47 | 99 | 44 | | | | 33 | **33** | 29 | 37 | 4 |
| #30 (.600 mm) | 3 | 3 | 23 | 96 | 34 | | | | 26 | **26** | 22 | 30 | 4 |
| #50 (.300 mm) | 3 | 3 | 9 | 86 | 25 | | | | 20 | **20** | 16 | 24 | 4 |
| #100 (.150 mm) | 2 | 3 | 3 | 36 | 15 | | | | 10 | **10** | 7 | 13 | 3 |
| #200 (.075 mm) | 2.0 | 2.3 | 1.7 | 6.6 | 8.6 | | | | 4.2 | **4.2** | 2.2 | 6.2 | 2 |
| AC Content % | | | | | 4.7 | | | | 4.3 | **4.3** | 3.9 | 4.7 | 0.4 |

| | °F (°C) | Required |
|---|---|---|
| Mix temperature @ discharge from mixer: | 305 (152) | ± 20 °F (± 10 °C) |
| Optimum roadway compaction temperature: | 290 (143) | |
| Laboratory mixing temperature: | 325 (163) | |
| Laboratory compaction temperature: | 300 (149) | |

| 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 | 88.8 | 85.5 - 91.5 |
| Ndes | 50 | | 96.0 |

| Tests on Aggregates | | Required | | Units |
|---|---|---|---|---|
| Durability Index | 76 | 40 | min. | % |
| F.A.A. %U | | N/A | | % |
| Flat and Elongated | 0 | 10 | max. | % |
| Fractured Faces | 100/100 | 85/80 | min. | % |
| Insoluble Residue | 12.2 | N/A | | % |
| LA Abrasion | 32 | 40 | max. | % |
| Micro-Deval | 10.4 | N/A | | % |
| Permeability | 2.3 | 12.5 | max. | $10^{-5}$cm/s |
| Sand Equivalent | 75 | 40 | min. | % |
| IOC | 0.18 | | | % |
| Gse | 2.656 | | | |
| Gsb | 2.638 | | | |
| Specimen Weight | 4845 | | | g |

**Tests on Compressed Mixtures**

| %AC | Gmb | Gmm | % Density of Gmm | % Density Required Design / Field | % VMA | % VMA Required Design / Field | % VFA | % VFA Required |
|---|---|---|---|---|---|---|---|---|
| 4.3 | 2.382 | 2.482 | 96.0 | | 13.6 | | 70.6 | |
| 4.8 | 2.394 | 2.463 | 97.2 | 96.0 / 94.5 - 97.4 | 13.6 | 13.5 / 13.0 | 79.4 | 70 - 75 |
| 5.3 | 2.408 | 2.445 | 98.5 | | 13.6 | | 89.0 | |

| Dust Prop. | Dust Prop. Req. |
|---|---|
| 1.0 | |
| 0.9 | 0.6 - 1.6 |
| 0.8 | |

ITS (PSI) 159.4 N/A min.
TSR 0.81 0.80 / 0.75 min. (Design / Field)
Compacted Wt. (lbs/sy/1" thick) = 109.2 @ 4.3 % Asphalt Cement
3.1 % New Asphalt Cement

**Hamburg Rut Test Depth (mm)** 1.90 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:** 12/9/2015
*(mm/dd/yyyy)*