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)*

Haskell Lemon Const Co (Asphalt) P/S # m00428
*(Producer/Supplier Name and Producer/Supplier Code)*

S3qc0131601200
*(Mix ID)*

Haskell Lemon (West OKC, OK) - 450TPH PLANT ID # m00428-01
*(Plant Name and Plant ID)*

| Aggregate | Producer/Supplier | % USED |
|---|---|---|
| 1" Rock | Dolese Co (Davis, OK) P/S # m002745002 | 25 |
| Man. Sand | Martin-Marietta (Davis, OK) P/S # m002285005 | 12 |
| C-33 Scrns. | Martin-Marietta (Snyder, OK) P/S # m002323802 | 28 |
| Sand (Unlisted Source) | General Materials (MacArther Pit) OKC,OK | 10 |
| Coarse 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-

| Producer/Supplier: | Dolese Co (Davis, OK) P/S # m002745002 | Martin-Marietta (Davis, OK) P/S # m002285005 | Martin-Marietta (Snyder, OK) P/S # m002323802 | General Materials (MacArther Pit) OKC,OK | Contractor / Project Site P/S # Contractor | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Sieve Size** | **1" Rock** | **Man. Sand** | **C-33 Scrns.** | **Sand (Unlisted Source)** | **Coarse R.A.P.** | | | | **Comb. Agg.** | ***JMF*** | ***Min.*** | ***Max.*** | ***% Tol. (±)*** |
| 1 in (25 mm) | 100 | 100 | 100 | 100 | 100 | | | | 100 | ***100*** | *100* | *100* | *0* |
| 3/4 in (19 mm) | 91 | 100 | 100 | 100 | 100 | | | | 98 | ***98*** | *91* | *100* | *7* |
| 1/2 in (12.5 mm) | 57 | 100 | 100 | 100 | 99 | | | | 89 | ***89*** | *82* | *96* | *7* |
| 3/8 in (9.5 mm) | 37 | 100 | 100 | 100 | 90 | | | | 82 | ***82*** | *75* | *89* | *7* |
| #4 (4.75 mm) | 9 | 94 | 97 | 100 | 35 | | | | 59 | ***59*** | *52* | *66* | *7* |
| #8 (2.36 mm) | 3 | 57 | 76 | 99 | 28 | | | | 46 | ***46*** | *41* | *51* | *5* |
| #16 (1.18 mm) | 2 | 31 | 50 | 96 | 23 | | | | 34 | ***34*** | *30* | *38* | *4* |
| #30 (.600 mm) | 2 | 18 | 32 | 88 | 20 | | | | 25 | ***25*** | *21* | *29* | *4* |
| #50 (.300 mm) | 2 | 10 | 17 | 66 | 16 | | | | 17 | ***17*** | *13* | *21* | *4* |
| #100 (.150 mm) | 2 | 6 | 7 | 24 | 9 | | | | 8 | ***8*** | *5* | *11* | *3* |
| #200 (.075 mm) | 1.6 | 4.2 | 3.5 | 3.7 | 5.2 | | | | 3.6 | ***3.6*** | *1.6* | *5.6* | *2* |
| AC Content % | | | | | 3.6 | | | | 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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**Tests on Compressed Mixtures (@ Design AC)**

| | # Gyr. | % Density of Gmm | % Density Required |
|---|---|---|---|
| Nini | 6 | 90.4 | 85.5 - 91.5 |
| Ndes | 50 | | 96.0 |

| Tests on Aggregates | | Required | | Units |
|---|---|---|---|---|
| Durability Index | 75 | 40 | min. | % |
| F.A.A. %U | | N/A | | % |
| Flat and Elongated | 0 | 10 | max. | % |
| Fractured Faces | 100/100 | 85/80 | min. | % |
| Insoluble Residue | | N/A | | % |
| LA Abrasion | 27 | 40 | max. | % |
| Micro-Deval | 16.2 | N/A | | % |
| Permeability | 3.8 | 12.5 | max. | $10^{-5}$cm/s |
| Sand Equivalent | 88 | 40 | min. | % |
| IOC | 0.29 | | | % |
| Gse | 2.663 | | | |
| Gsb | 2.643 | | | |
| Specimen Weight | 4855 | | | g |

**Tests on Compressed Mixtures**

| %AC | Gmb | Gmm | % Density of Gmm | % Density Required Design / Field | % VMA | % VMA Required Design / Field | % VFA | % VFA Required |
|---|---|---|---|---|---|---|---|---|
| 3.8 | 2.367 | 2.507 | 94.4 | 96.0 / 94.5 - 97.4 | 13.8 | 13.5 / 13.0 | 59.4 | 70 - 75 |
| 4.3 | 2.389 | 2.488 | 96.0 | | 13.5 | | 70.4 | |
| 4.8 | 2.407 | 2.469 | 97.5 | | 13.3 | | 81.2 | |

| Dust Prop. |
|---|
| 1.0 |
| 0.9 |
| 0.8 |

**Dust Prop. Req.** 0.6 - 1.6

**ITS (PSI)** 100.4 N/A min.
**TSR** 0.89 0.80 / 0.75 min. (Design / Field)
**Compacted Wt. (lbs/sy/1" thick) =** 109.4 @ 4.3 % Asphalt Cement
3.4 % New Asphalt Cement

**Hamburg Rut Test Depth (mm)** 3.72 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:** 8/24/2016
*(mm/dd/yyyy)*