Version: V03.50

# Oklahoma Department of Transportation Mix Design Report

Asphalt Concrete, Type S4 (PG 76-28 OK) Mat'l. Code: asco010
*(Material Full Name and Material Code)*

Insoluble ID: I1
*(Design Type and Design Type ID)*

Cornell Const Co P/S # m00309
*(Producer/Supplier Name and Producer/Supplier Code)*

S4qc0361800400
*(Mix ID)*

Cornell Const Co (Portable) - 400TPH PLANT ID # m00309-01
*(Plant Name and Plant ID)*

| Aggregate | Producer/Supplier | % USED |
|---|---|---|
| 5/8" Chips | Martin-Marietta (Snyder, OK) P/S # m002323802 | 16 |
| 5/8" Chips | Dolese Co (Cooperton, OK) P/S # m002723801 | 19 |
| Scrns. | Dolese Co (Cooperton, OK) P/S # m002723801 | 26 |
| C-33 Scrns. | Martin-Marietta (Snyder, OK) P/S # m002323802 | 27 |
| Sand (Unlisted Source) | McLemore Pit Elk City,OK | 12 |

**Asphalt Cement:** Asphaltic Cement Type PG 76-28 OK, acem001, Coastal Energy (Clinton, OK), m01042
*(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: | Martin-Marietta (Snyder, OK) P/S # m002323802 | Dolese Co (Cooperton, OK) P/S # m002723801 | Dolese Co (Cooperton, OK) P/S # m002723801 | Martin-Marietta (Snyder, OK) P/S # m002323802 | McLemore Pit Elk City,OK | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Sieve Size** | 5/8" Chips | 5/8" Chips | Scrns. | C-33 Scrns. | Sand (Unlisted Source) | | | | Comb. Agg. | *JMF* | *Min.* | *Max.* | *% Tol. (±)* |
| 3/4 in (19 mm) | 100 | 100 | 100 | 100 | 100 | | | | 100 | ***100*** | *100* | *100* | *0* |
| 1/2 in (12.5 mm) | 91 | 94 | 100 | 100 | 100 | | | | 97 | ***97*** | *90* | *100* | *7* |
| 3/8 in (9.5 mm) | 65 | 58 | 100 | 100 | 100 | | | | 86 | ***86*** | *79* | *93* | *7* |
| #4 (4.75 mm) | 8 | 5 | 92 | 93 | 100 | | | | 63 | ***63*** | *56* | *70* | *7* |
| #8 (2.36 mm) | 3 | 2 | 62 | 69 | 99 | | | | 47 | ***47*** | *42* | *52* | *5* |
| #16 (1.18 mm) | 2 | 2 | 40 | 46 | 98 | | | | 35 | ***35*** | *31* | *39* | *4* |
| #30 (.600 mm) | 2 | 2 | 27 | 27 | 86 | | | | 25 | ***25*** | *21* | *29* | *4* |
| #50 (.300 mm) | 2 | 1 | 18 | 14 | 34 | | | | 13 | ***13*** | *9* | *17* | *4* |
| #100 (.150 mm) | 1 | 1 | 14 | 6 | 12 | | | | 7 | ***7*** | *4* | *10* | *3* |
| #200 (.075 mm) | 0.8 | 1.0 | 11.4 | 3.0 | 5.1 | | | | 4.7 | ***4.7*** | *2.7* | *6.7* | *2* |
| AC Content % | | | | | | | | | 4.8 | ***4.8*** | *4.4* | *5.2* | *0.4* |

| | °F (°C) | Required |
|---|---|---|
| Mix temperature @ discharge from mixer: | 325 (163) | ± 20 °F (± 10 °C) |
| Optimum roadway compaction temperature: | 305 (152) | |
| 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 | 8 | 88.7 | 85.5 - 89.0 |
| Ndes | 80 | | 96.0 |

| Tests on Aggregates | | Required | | Units |
|---|---|---|---|---|
| Contabro | | N/A | | % |
| Durability Index | 80 | 40 | min. | % |
| F.A.A. %U | | N/A | | % |
| Flat and Elongated | 0 | 10 | max. | % |
| Fractured Faces | 100/100 | 98/95 | min. | % |
| Insoluble Residue | 45.4 | 40 | min. | % |
| LA Abrasion | 26 | 40 | max. | % |
| Micro-Deval | 9.8 | 25 | max. | % |
| Permeability | 3.1 | 12.5 | max. | $10^{-5}$cm/s |
| Sand Equivalent | 81 | 50 | min. | % |
| IOC | 0.25 | | | % |
| Gse | 2.689 | | | |
| Gsb | 2.661 | | | |
| Specimen Weight | 4860 | | | 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 | 2.360 | 2.510 | 94.0 | | 15.1 | | 60.3 | |
| 4.8 | 2.391 | 2.490 | 96.0 | 96.0 / 94.5 - 97.4 | 14.5 | 14.5 / 14.0 | 72.4 | 72 - 77 |
| 5.3 | 2.415 | 2.471 | 97.7 | | 14.1 | | 83.7 | |

| Dust Prop. |
|---|
| 1.2 |
| 1.1 |
| 1.0 |

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

**ITS (PSI)** 110.2 75 min.

**TSR** 0.89 0.80 / 0.75 min. (Design / Field)

**Compacted Wt. (lbs/sy/1" thick) =** 109.6 @ 4.8 % Asphalt Cement

**Hamburg Rut Test Depth (mm)** 2.07 12.50 max. @ 20,000 cycles

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

**Comments:**

**Last Modified By:** Smith, Jerry D. jsmith
*(User Name and User ID)*

**Date:** 10/16/2018
*(mm/dd/yyyy)*