



Oklahoma Department of Transportation Mix Design Report

Asphalt Concrete, Type S4 (PG 76-28 OK) Mat'l. Code: asco010

Insoluble ID: I1

(Material Full Name and Material Code)

(Design Type and Design Type ID)

T & G Const Co P/S # m00566

WS4qc0591600200

(Producer/Supplier Name and Producer/Supplier Code)

(Mix ID)

T & G Const Co #1 (Lawton, OK) - 400TPH PLANT ID # m00566-01

(Plant Name and Plant ID)

| Aggregate | Producer/Supplier | % USED |
|---|---|--------|
| 5/8" Chips | Martin-Marietta (Snyder, OK) P/S # m002323802 | 26 |
| 3/8" Chips | Dolese Co. (Richards Spur, OK) P/S # m002761601 | 20 |
| C-33 Scrns. | Martin-Marietta (Snyder, OK) P/S # m002323802 | 17 |
| Scrns. | Dolese Co. (Richards Spur, OK) P/S # m002761601 | 25 |
| Sand (Unlisted Source) | T & G Sand Pit (Headrick, Ok.) | 12 |
| Warm Mix Asphalt (WMA) Technology TEREX (Foaming Process) qual028 Terex Roadbuilding m00801 (Product Name, Material Code, Producer/Supplier Name, Producer/Supplier Code) | | |
| Asphalt Cement: Asphaltic Cement Type PG 76-28 OK, acem001, Valero (Ardmore, OK), m00352 (Material Full Name, Material Code, Producer/Supplier Name, Producer/Supplier Code) | | |

| Sieve Size | Producer/Supplier: | | | | | | Comb. Agg. | Requirements | | | % Tol. (±) |
|------------------|---|---|---|---|--------------------------------|-----|------------|--------------|------|------|------------|
| | Martin-Marietta (Snyder, OK) P/S # m002323802 | Dolese Co. (Richards Spur, OK) P/S # m002761601 | Martin-Marietta (Snyder, OK) P/S # m002323802 | Dolese Co. (Richards Spur, OK) P/S # m002761601 | T & G Sand Pit (Headrick, Ok.) | | | JMF | Min. | Max. | |
| 3/4 in (19 mm) | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 0 | |
| 1/2 in (12.5 mm) | 93 | 100 | 100 | 100 | 100 | 98 | 98 | 91 | 100 | 7 | |
| 3/8 in (9.5 mm) | 61 | 96 | 100 | 100 | 100 | 89 | 89 | 82 | 96 | 7 | |
| #4 (4.75 mm) | 10 | 25 | 97 | 84 | 100 | 57 | 57 | 50 | 64 | 7 | |
| #8 (2.36 mm) | 3 | 3 | 75 | 55 | 99 | 40 | 40 | 35 | 45 | 5 | |
| #16 (1.18 mm) | 2 | 2 | 46 | 35 | 98 | 29 | 29 | 25 | 33 | 4 | |
| #30 (.600 mm) | 1 | 1 | 24 | 24 | 90 | 21 | 21 | 17 | 25 | 4 | |
| #50 (.300 mm) | 1 | 1 | 9 | 17 | 44 | 12 | 12 | 8 | 16 | 4 | |
| #100 (.150 mm) | 1 | 1 | 3 | 13 | 7 | 5 | 5 | 2 | 8 | 3 | |
| #200 (.075 mm) | 0.6 | 1.0 | 1.0 | 10.5 | 0.8 | 3.2 | 3.2 | 1.2 | 5.2 | 2 | |
| AC Content % | | | | | | 5.4 | 5.4 | 5.0 | 5.8 | 0.4 | |

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

Warm Mix Asphalt (WMA) Additive %

2.0

| | | |
|---|----------------|-------------------|
| | °F (°C) | Required |
| Mix temperature @ discharge from mixer: | 275 (135) | ± 20 °F (± 10 °C) |
| Optimum roadway compaction temperature: | 260 (127) | |
| 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 | 87.6 | 85.5 - 89.0 |
| Ndes | 80 | | 96.0 |

| Tests on Aggregates | Required | Units |
|---------------------|----------|---------------------------------|
| Durability Index | 79 | 40 min. % |
| F.A.A. %U | N/A | % |
| Flat and Elongated | 2 | 10 max. % |
| Fractured Faces | 100/100 | 98/95 min. % |
| Insoluble Residue | 51.4 | 40 min. % |
| LA Abrasion | 25 | 40 max. % |
| Micro-Deval | 12.7 | 25 max. % |
| Permeability | 5 | 12.5 max. 10 ⁻⁵ cm/s |
| Sand Equivalent | 82 | 50 min. % |
| Pba | 0.6 | % |
| IOC | 0.17 | % |
| Gse | 2.657 | |
| Gsb | 2.616 | |
| Specimen Weight | 4725 | g |

| Tests on Compressed Mixtures | | | | | | | | |
|------------------------------|-------|-------|------------------|--------------------|-------|----------------|-------|----------------|
| %AC | Gmb | Gmm | % Density of Gmm | % Density Required | % VMA | % VMA Required | % VFA | % VFA Required |
| 4.8 | 2.319 | 2.464 | 94.1 | Design / Field | 15.6 | Design / Field | 62.2 | 72 - 77 |
| 5.3 | 2.335 | 2.446 | 95.5 | 96.0 / 94.5 - 97.4 | 15.5 | 14.5 / 14.0 | 71.0 | |
| 5.8 | 2.364 | 2.427 | 97.4 | | 14.9 | | 82.6 | |

| | | | |
|-------------------|--|------|-----------------------------------|
| Dust Prop. | ITS (PSI) | 86 | 75 min. |
| 0.8 | TSR | 0.96 | 0.80 / 0.75 min. (Design / Field) |
| 0.7 | Compacted Wt. (lbs/sy/1" thick) = 107.4 @ 5.4 % Asphalt Cement | | |
| 0.6 | | | |

Hamburg Rut Test Depth (mm) 6.23 12.50 max. @ 20,000 cycles

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

Comments: _____

Last Modified By: Suito, Kevin ksuito (User Name and User ID)

Date: 8/14/2017 (mm/dd/yyyy)