Version: V03.50

Oklahoma Department of Transportation Mix Design Report

Asphalt Concrete, Type 1/2" SMA Mat'l. Code: asco027
(Material Full Name and Material Code)

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

Koss Construction Co - Asphalt (Topeka, KS) P/S # m00732
(Producer/Supplier Name and Producer/Supplier Code)

WM2pv0251820200
(Mix ID)

(Plant Name and Plant ID)

Aggregate	Producer/Supplier	% USED
5/8" Chips	Mid-States Materials Atoka Quarry (Atoka, OK) P/S # m009800306	48
5/8" Chips	Dolese Co (Hartshorne, OK) P/S # m002756101	28
Scrns.	Dolese Co (Hartshorne, OK) P/S # m002756101	14
Min. Filler	Dolese Co (Davis, OK) P/S # m002745002	10

Warm Mix Asphalt (WMA) Technology: EVOTHERM P25 (Chem. Add.) qual028 Ingevity m00941
(Product Name, Material Code, Producer/Supplier Name, Producer/Supplier Code)

(Product Name, Manufacturer Name)

Asphalt Additive, Anti-Strip: EVOTHERM P25 addi003 Ingevity m00941
(Product Name, Material Code, Producer/Supplier Name, Producer/Supplier Code)

Asphalt Cement: Asphaltic Cement Type PG 76-28 OK, acem001, 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	Producer/Supplier: Mid-States Materials Atoka Quarry (Atoka, OK) P/S # m009800306 — 5/8" Chips	Dolese Co (Hartshorne, OK) P/S # m002756101 — 5/8" Chips	Dolese Co (Hartshorne, OK) P/S # m002756101 — Scrns.	Dolese Co (Davis, OK) P/S # m002745002 — Min. Filler					Comb. Agg.	JMF	Min.	Max.	% Tol. (±)
3/4 in (19 mm)	100	100	100	100					100	**100**	100	100	0
1/2 in (12.5 mm)	83	93	100	100					90	**90**	83	97	7
3/8 in (9.5 mm)	54	59	100	100					66	**66**	59	73	7
#4 (4.75 mm)	12	8	87	100					30	**30**	23	37	7
#8 (2.36 mm)	2	2	54	100					19	**19**	14	24	5
#16 (1.18 mm)	1	2	34	100					16	**16**	12	20	4
#30 (.600 mm)	1	2	23	100					14	**14**	10	18	4
#50 (.300 mm)	1	2	17	99					13	**13**	9	17	4
#100 (.150 mm)	1	2	13	93					12	**12**	9	15	3
#200 (.075 mm)	0.5	0.6	10.9	82.5					10.2	**10.2**	8.2	12.2	2
AC Content %									6.4	**6.4**	6.0	6.8	0.4
Asphalt Additive, Anti-Strip %									0.0				
Cellulose Fiber %									0.0				
Warm Mix Asphalt (WMA) Additive %									0.5				

	°F (°C)	Required
Mix temperature @ discharge from mixer:	275 (135)	± 20 °F (± 10 °C)
Optimum roadway compaction temperature:	265 (129)	
Laboratory mixing temperature:	275 (135)	
Laboratory compaction temperature:	265 (129)	

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
Ndes	50		96.0

Tests on Aggregates		Required		Units
Contabro		N/A		%
Durability Index	74	40	min.	%
F.A.A. %U	46	N/A		%
Flat and Elongated	0	10	max.	%
Fractured Faces	100/100	98/95	min.	%
Insoluble Residue	40.9	40	min.	%
LA Abrasion	20	30	max.	%
Micro-Deval	10.7	25	max.	%
Permeability	2.3	12.5	max.	10^{-5}cm/s
Sand Equivalent	69	N/A		%
Pba	0.25			
IOC	0.37			%
Gse	2.613			
Gsb	2.596			
Specimen Weight	4650			g

Tests on Compressed Mixtures

%AC	Gmb	Gmm	% Density of Gmm	% Density Required	% VMA	% VMA Required	% VFA
6.0	2.294	2.386	96.1	Design / Field	16.9	Design / Field	76.9
6.5	2.294	2.369	96.8	96.0 / 94.5 - 97.4	17.4	17.0 / 16.5	81.6
7.0	2.312	2.352	98.3		17.2		90.1

ITS (PSI) 103.5 N/A min.
TSR 0.84 0.80 / 0.75 min. (Design / Field)
Compacted Wt. (lbs/sy/1" thick) = 104.4 @ 6.4 % Asphalt Cement

Drain-down(%)= 0.2 0.20 max.
Hamburg Rut Test Depth (mm) 4.92 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: 8/31/2018
(mm/dd/yyyy)