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)

MPC Materials P/S # m00906
(Producer/Supplier Name and Producer/Supplier Code)

WM2pv0221800100
(Mix ID)

MPC Materials Markwell #30-35 (Portable) PLANT ID # m00906-03
(Plant Name and Plant ID)

Aggregate	Producer/Supplier	% USED
5/8" Chips	Hanson Aggregates, WRP Inc (Davis, OK) P/S # m001985008	33
5/8" Chips	Dolese Co. (Richards Spur, OK) P/S # m002761601	36
Shot	Dolese Co. (Richards Spur, OK) P/S # m002761601	10
Scrns.	Dolese Co. (Richards Spur, OK) P/S # m002761601	10
Min. Filler	Dolese Co. (Richards Spur, OK) P/S # m002761601	11

Warm Mix Asphalt (WMA) Technology: EVOTHERM M1 (Chem. Add.) qual028 Ingevity m00941
(Product Name, Material Code, Producer/Supplier Name, Producer/Supplier Code)

(Product Name, Manufacturer Name)

Asphalt Cement: Asphaltic Cement Type PG 76-28 OK, acem001, Lion Oil Frontier (Muskogee, OK), m01021
(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: Hanson Aggregates, WRP Inc (Davis, OK) P/S # m001985008 — 5/8" Chips	Dolese Co. (Richards Spur, OK) P/S # m002761601 — 5/8" Chips	Dolese Co. (Richards Spur, OK) P/S # m002761601 — Shot	Dolese Co. (Richards Spur, OK) P/S # m002761601 — Scrns.	Dolese Co. (Richards Spur, OK) P/S # m002761601 — Min. Filler				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)	77	93	100	100	100				90	***90***	*83*	*97*	*7*
3/8 in (9.5 mm)	51	62	100	100	100				70	***70***	*63*	*77*	*7*
#4 (4.75 mm)	4	9	60	87	100				30	***30***	*23*	*37*	*7*
#8 (2.36 mm)	1	3	44	61	100				23	***23***	*18*	*28*	*5*
#16 (1.18 mm)	1	2	21	40	100				18	***18***	*14*	*22*	*4*
#30 (.600 mm)	1	1	11	27	100				15	***15***	*11*	*19*	*4*
#50 (.300 mm)	1	1	6	20	99				14	***14***	*10*	*18*	*4*
#100 (.150 mm)	1	1	5	17	96				13	***13***	*10*	*16*	*3*
#200 (.075 mm)	0.6	1.1	3.9	13.1	87.3				11.9	***11.9***	*9.9*	*13.9*	*2*
AC Content %									6.5	***6.5***	*6.1*	*6.9*	*0.4*
Cellulose Fiber %									0.2				
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		N/A		%
Flat and Elongated	0	10	max.	%
Fractured Faces	100/100	98/95	min.	%
Insoluble Residue	44.2	40	min.	%
LA Abrasion	26	30	max.	%
Micro-Deval	11.9	25	max.	%
Permeability	8.4	12.5	max.	10^{-5}cm/s
Sand Equivalent		N/A		%
Pba	0.6			
IOC	0.22			%
Gse	2.674			
Gsb	2.632			
Specimen Weight	4590			g

Tests on Compressed Mixtures

%AC	Gmb	Gmm	% Density of Gmm	% Density Required	% VMA	% VMA Required	% VFA
6.0	2.284	2.433	93.9	Design / Field	18.4	Design / Field	66.8
6.5	2.317	2.415	95.9	96.0 / 94.5 - 97.4	17.7	17.0 / 16.5	76.8
7.0	2.345	2.398	97.8		17.1		87.1

ITS (PSI) 52.2 N/A min.
TSR 0.91 0.80 / 0.75 min. (Design / Field)
Compacted Wt. (lbs/sy/1" thick) = 106.3 @ 6.5 % Asphalt Cement

Drain-down(%)= 0.16 0.20 max.
Hamburg Rut Test Depth (mm) 11.94 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: 8/23/2018
(mm/dd/yyyy)