



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)
 Cummins Const Co P/S # m00556
 (Producer/Supplier Name and Producer/Supplier Code)
 Cummins Const Co (Coleman, OK) - 300TPH PLANT ID # m00556-11
 (Plant Name and Plant ID)

Insoluble ID: 11
 (Design Type and Design Type ID)
 WS4qc0101502501
 (Mix ID)

Aggregate	Producer/Supplier	% USED
5/8" Chips	Martin-Marietta (Mill Creek, OK) P/S # m002303502	25
3/8" Chips	Dolese Co (Coleman, OK) P/S # m002710302	20
Blend Sand	TXI Mill Creek Stone Plant P/S # m005253504	25
Scrns.	Dolese Co (Coleman, OK) P/S # m002710302	15
Sand (Unlisted Source)	Cardinal Sand (Coleman, OK)	15
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			
	5/8" Chips	3/8" Chips	Blend Sand	Scrns.	Sand (Unlisted Source)			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)	70	100	100	100	100	93	93	86	100	7	
3/8 in (9.5 mm)	21	95	100	100	100	79	86	79	93	7	x
#4 (4.75 mm)	3	19	99	89	100	58	64	57	71	7	x
#8 (2.36 mm)	2	6	82	55	100	45	50	45	55	5	x
#16 (1.18 mm)	2	4	54	36	99	35	35	31	39	4	
#30 (.600 mm)	1	2	30	27	99	27	27	23	31	4	
#50 (.300 mm)	1	1	12	20	85	19	19	15	23	4	
#100 (.150 mm)	1	1	4	15	33	9	11	8	14	3	x
#200 (.075 mm)	0.8	0.9	1.8	12.5	9.2	4.1	5.1	3.1	7.1	2	x
AC Content %						4.8	4.8	4.4	5.2	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

Mix temperature @ discharge from mixer: 275 (135) ± 20 °F (± 10 °C) **Required**
 Optimum roadway compaction temperature: 260 (127)
 Laboratory mixing temperature: 300 (149)
 Laboratory compaction temperature: 300 (149)

Tests on Aggregates	Required	Units
Durability Index	67	40 min. %
F.A.A. %U	0	N/A %
Flat and Elongated	0	10 max. %
Fractured Faces	100/100	98/95 min. %
Insoluble Residue	51.2	40 min. %
LA Abrasion	23	40 max. %
Micro-Deval	12.4	25 max. %
Permeability	2.8	12.5 max. 10 ⁻⁵ cm/s
Sand Equivalent	82	50 min. %
Pba	0.39	
IOC	0.61	%
Gse	2.743	
Gsb	2.714	
Specimen Weight	4900	g

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	88.2	85.5 - 89.0
Ndes	80		96.0

Tests on Compressed Mixtures							
%AC	Gmb	Gmm	% Density of Gmm	% Density Required	% VMA	% VMA Required	% VFA
4.3	2.388	2.555	93.5	Design / Field	15.8	Design / Field	58.9
4.8	2.433	2.534	96.0	96.0 / 94.5 - 97.4	14.7	14.5 / 14.0	72.8
5.3	2.459	2.514	97.8		14.2		84.5

Dust Prop.
 1.1
 0.9
 0.8

Dust Prop. Req.
 0.6 - 1.6

ITS (PSI) 182.6 75 min.
TSR 0.89 0.80 / 0.75 min. (Design / Field)
 Compacted Wt. (lbs/sy/1" thick) = 111.5 @ 4.8 % Asphalt Cement

x 1st JMF Revision

Hamburg Rut Test Depth (mm) 7.09 12.50 max. @ 20,000 cycles

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

Comments: Revised JMF by Contractor: Effective 4/11/18

Last Modified By: Vivanco, David dvivanco
 (User Name and User ID)

Date: 4/17/2018
 (mm/dd/yyyy)