



# Oklahoma Department of Transportation Mix Design Report

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

Insoluble ID: 11

(Material Full Name and Material Code)

(Design Type and Design Type ID)

Cornell Const Co P/S # m00309

WS4qc0361800200

(Producer/Supplier Name and Producer/Supplier Code)

(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	35
Scrns.	Dolese Co (Cooperton, OK) P/S # m002723801	23
C-33 Scrns.	Martin-Marietta (Snyder, OK) P/S # m002323802	30
Sand (Unlisted Source)	T&G Sand Snyder, Ok	12
Warm Mix Asphalt (WMA) Technology: MAXAM (Foaming Process) qual028 Maxam Equipment m00802 (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:				Sand (Unlisted Source)	Comb. Agg.	Requirements			
	Martin-Marietta (Snyder, OK) P/S # m002323802	Dolese Co (Cooperton, OK) P/S # m002723801	Martin-Marietta (Snyder, OK) P/S # m002323802	T&G Sand Snyder, Ok			JMF	Min.	Max.	Tol. (%)
5/8" Chips	100	100	100	100	100	100	100	100	0	
3/4 in (19 mm)	87	100	100	100	95	95	88	100	7	
1/2 in (12.5 mm)	57	100	100	100	85	85	78	92	7	
3/8 in (9.5 mm)	3	98	89	100	62	62	55	69	7	
#4 (4.75 mm)	1	65	60	99	45	45	40	50	5	
#8 (2.36 mm)	1	40	39	97	33	33	29	37	4	
#16 (1.18 mm)	1	28	24	88	25	25	21	29	4	
#30 (.600 mm)	1	20	14	44	14	14	10	18	4	
#50 (.300 mm)	1	15	8	7	7	7	4	10	3	
#100 (.150 mm)	0.3	11.5	4.4	0.8	4.2	4.2	2.2	6.2	2	
#200 (.075 mm)					4.8	4.8	4.4	5.2	0.4	
AC Content %										

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)			
	% Density		% Density Required
	# Gyr.	of Gmm	
Nini	8	88.7	85.5 - 89.0
Ndes	80		96.0

Tests on Aggregates	Required	Units
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	84.2	40 min. %
LA Abrasion	26	40 max. %
Micro-Deval	9.8	25 max. %
Permeability	2.8	12.5 max. 10 <sup>-5</sup> cm/s
Sand Equivalent	81	50 min. %
Pba	0.29	
IOC	0.12	%
Gse	2.651	
Gsb	2.631	
Specimen Weight	4800	g

Tests on Compressed Mixtures							
%AC	Gmb	Gmm	% Density		% VMA	% VMA Required	% VFA
			of Gmm	% Density Required		Design / Field	Design / Field
4.3	2.332	2.478	94.1	Design / Field	15.2	Design / Field	61.2
4.8	2.360	2.459	96.0	96.0 / 94.5 - 97.4	14.6	14.5 / 14.0	72.6
5.3	2.381	2.441	97.5		14.3		82.5

Dust Prop.	Dust Prop. Req.	ITS (PSI)	TSR	Compacted Wt. (lbs/sy/1" thick) =	@	% Asphalt Cement
1.1	0.6 - 1.6	108.3	0.83	108.2	4.8	
0.9						
0.8						

Hamburg Rut Test Depth (mm) 2.04 12.50 max. @ 20,000 cycles

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

Comments:

Last Modified By:

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(User Name and User ID)

Date: 6/18/2018  
(mm/dd/yyyy)