



### Oklahoma Department of Transportation Mix Design Report

Asphalt Concrete, Type S4 (PG 70-28 OK) Mat'l. Code: asco011  
 (Material Full Name and Material Code)  
 Cummins Const Co P/S # m00556  
 (Producer/Supplier Name and Producer/Supplier Code)  
 Cummins Const Co #2754 (Binger, OK.) - 300TPH PLANT ID # m00556-15  
 (Plant Name and Plant ID)

Insoluble ID: I1  
 (Design Type and Design Type ID)  
 S4c00931890200  
 (Mix ID)

Aggregate	Producer/Supplier	% USED
5/8" Chips	Dolese Co. (Roosevelt, OK) P/S # m010483804	20
1/2" Chips	Western Aggregates, LLC (Carnegie, OK) P/S # m006583803	10
Stone Sand	Dolese Co. (Richards Spur, OK) P/S # m002761601	40
Scrms.	Western Aggregates, LLC (Carnegie, OK) P/S # m006583803	20
Sand (Unlisted Source)	GMI Sand OKC, OK	10
<b>Asphalt Cement:</b> Asphaltic Cement Type PG 70-28 OK, acem002, HollyFrontier (Catoosa, OK), m01028 (Material Full Name, Material Code, Producer/Supplier Name, Producer/Supplier Code)		

Sieve Size	Producer/Supplier:					Sand (Unlisted Source)	Comb. Agg.	%				Tot. (±)
	Dolese Co. (Roosevelt, OK) # m010483804 Western Aggregates, LLC (Carnegie, OK) P/S # m006583803 Dolese Co. (Richards Spur, OK) P/S # m002761601 Western Aggregates, LLC (Carnegie, OK) P/S # m006583803 GMI Sand OKC, OK							JMF	Min.	Max.	%	
	5/8" Chips	1/2" Chips	Stone Sand	Scrms.	(Unlisted Source)							
3/4 in (19 mm)	100	100	100	100	100	100	100	100	100	0		
1/2 in (12.5 mm)	90	100	100	100	100	98	98	91	100	7		
3/8 in (9.5 mm)	55	84	100	99	100	89	89	82	96	7		
#4 (4.75 mm)	3	4	97	79	99	66	66	59	73	7		
#8 (2.36 mm)	2	1	68	55	99	49	49	44	54	5		
#16 (1.18 mm)	1	1	32	33	97	29	29	25	33	4		
#30 (.600 mm)	1	1	17	21	91	20	20	16	24	4		
#50 (.300 mm)	1	1	8	16	59	13	13	9	17	4		
#100 (.150 mm)	1	1	5	14	12	6	6	3	9	3		
#200 (.075 mm)	0.9	0.8	4.1	13.1	2.5	4.8	4.8	2.8	6.8	2		
AC Content %						4.9	4.9	4.5	5.3	0.4		

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

Mix temperature @ discharge from mixer: 325 (163) **Required** ± 20 °F (± 10 °C)  
 Optimum roadway compaction temperature: 305 (152)  
 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	7	88.6	85.5 - 90.5
Ndes	65		96.0

Tests on Aggregates	Required	Units
Durability Index	79	40 min. %
F.A.A. %U	N/A	%
Flat and Elongated	10	max. %
Fractured Faces	100/100	95/90 min. %
Insoluble Residue	40.1	40 min. %
LA Abrasion	29	40 max. %
Micro-Deval	12.7	N/A %
Permeability	3.3	12.5 max. 10 <sup>-5</sup> cm/s
Sand Equivalent	75	45 min. %
IOC	0.14	%
Gse	2.727	
Gsb	2.688	
Specimen Weight	4800	g

Tests on Compressed Mixtures							
%AC	Gmb	Gmm	% Density of Gmm	% Density Required	% VMA	% VMA Required	% VFA
4.4	2.389	2.537	94.2	Design / Field	15.0	Design / Field	61.3
4.9	2.416	2.517	96.0	96.0 / 94.5 - 97.4	14.5	14.5 / 14.0	72.4
5.4	2.439	2.498	97.6		14.2		83.1

  

Dust Prop.	Dust Prop. Req.	ITS (PSI)	TSR	Compacted Wt. (lbs/sy/1" thick) =	% Asphalt Cement
1.2	0.6 - 1.6	121.9	0.90	110.7	4.9
1.1					
1.0					

Hamburg Rut Test Depth (mm) 9.56 #N/A

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

Comments: Similar to S4qc0101790100 (Plant ID Change)

Last Modified By: Suitoer, Kevin ksuitoer  
(User Name and User ID)

Date: 3/5/2018  
(mm/dd/yyyy)