



# Oklahoma Department of Transportation Mix Design Report

Asphalt Concrete, Type S3 (PG 70-28 OK) Mat'l. Code: asco008

Binder - Recycled ID: B2

(Material Full Name and Material Code)

(Design Type and Design Type ID)

Cummins Const Co P/S # m00556

WS3qc0101485300

(Producer/Supplier Name and Producer/Supplier Code)

(Mix ID)

Cummins Const Co (Enid, OK) - 220TPH PLANT ID # m00556-06

(Plant Name and Plant ID)

Aggregate	Producer/Supplier	% USED
#67 Rock	Dolese Co. (Richards Spur, OK) P/S # m002761601	32
3/8" Chips	Dolese Co. (Richards Spur, OK) P/S # m002761601	10
Stone Sand	Dolese Co. (Richards Spur, OK) P/S # m002761601	20
Scrns.	Dolese Co. (Richards Spur, OK) P/S # m002761601	13
Sand (Unlisted Source)	Lightle Sand (Hennessey, OK)	10
Fine R.A.P.	Contractor / Project Site P/S # Contractor	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 70-28 OK, acem002, Lion Oil Co. (Muskogee, OK), m00511 (Material Full Name, Material Code, Producer/Supplier Name, Producer/Supplier Code)		

Sieve Size	Producer/Supplier:							Comb. Agg.	% Tol. (±)			
	#67 Rock	3/8" Chips	Stone Sand	Scrns.	Sand (Unlisted Source)	Fine R.A.P.	JMF		Min.	Max.		
1 in (25 mm)	100	100	100	100	100	100	100	100	100	100	0	
3/4 in (19 mm)	94	100	100	100	100	100	98	98	91	100	7	
1/2 in (12.5 mm)	68	100	100	100	100	100	90	90	83	97	7	
3/8 in (9.5 mm)	47	97	100	100	100	100	82	82	75	89	7	
#4 (4.75 mm)	7	20	97	90	100	84	58	58	51	65	7	
#8 (2.36 mm)	3	6	62	53	100	70	41	41	36	46	5	
#16 (1.18 mm)	1	3	32	36	99	53	30	30	26	34	4	
#30 (.600 mm)	1	2	17	24	77	45	21	21	17	25	4	
#50 (.300 mm)	1	1	8	18	30	27	11	11	7	15	4	
#100 (.150 mm)	1	1	3	14	7	17	6	6	3	9	3	
#200 (.075 mm)	0.7	0.8	2.4	11.5	1.2	9.5	3.8	3.8	1.8	5.8	2	
AC Content %						5.0	4.4	4.4	4.0	4.8	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

	<b>°F (°C)</b>	<b>Required</b>
Mix temperature @ discharge from mixer:	275 (135)	± 20 °F (± 10 °C)
Optimum roadway compaction temperature:	260 (127)	
Laboratory mixing temperature:	300 (149)	
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	88.4	85.5 - 90.5
Ndes	65		96.0

Tests on Aggregates	Required	Units
Durability Index	40 min.	%
F.A.A. %U	N/A	%
Flat and Elongated	10 max.	%
Fractured Faces	100/100	95/90 min.
Insoluble Residue	3.2	N/A
LA Abrasion	24.3	40 max.
Micro-Deval	12.2	N/A
Permeability	3.6	12.5 max.
Sand Equivalent	75	45 min.
Pba	0.36	
IOC	0.12	%
Gse	2.668	
Gsb	2.643	
Specimen Weight	4800	g

Tests on Compressed Mixtures								
%AC	Gmb	Gmm	% Density		% VMA	% VMA Required	% VFA	% VFA Required
			of Gmm	% Density Required				
3.9	2.344	2.507	93.5	Design / Field	14.8	Design / Field	56.1	70 - 75
4.4	2.389	2.488	96.0	96.0 / 94.5 - 97.4	13.6	13.5 / 13.0	70.6	
4.9	2.391	2.469	96.8		14.0		77.1	

Dust Prop.	Dust Prop. Req.	ITS (PSI)	TSR	Compacted Wt. (lbs/sy/1" thick) =	@	% Asphalt Cement
1.1	0.6 - 1.6	119.7	0.81	109.5	4.4	
0.9					3.6	% New Asphalt Cement
0.8						

Hamburg Rut Test Depth (mm) 1.42 #N/A

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

Comments:

Last Modified By: Williams, Bobby Ray bwilli01 (User Name and User ID)

Date: 6/14/2017 (mm/dd/yyyy)