



Oklahoma Department of Transportation Mix Design Report

Asphalt Concrete, Type S3 (PG 64-22 OK) Mat'l. Code: asco009

Binder ID: B1

(Material Full Name and Material Code)

(Design Type and Design Type ID)

Cummins Const Co P/S # m00556

WS3c00931790200

(Producer/Supplier Name and Producer/Supplier Code)

(Mix ID)

Cummins Const Co #2 (Enid) - 400TPH PLANT ID # m00556-08

(Plant Name and Plant ID)

Aggregate	Producer/Supplier	% USED
1" Rock	APAC-Central, 46th St (NW pit Tulsa, OK) P/S # m001197201	21
1/2" Chips	APAC-Central, 46th St (NW pit Tulsa, OK) P/S # m001197201	11
Man. Sand	APAC-Central, 46th St (NW pit Tulsa, OK) P/S # m001197201	34
Scrns.	APAC-Central, 46th St (NW pit Tulsa, OK) P/S # m001197201	25
Sand	Holliday Sand & Gravel (Bixby, OK) P/S # m001997212	9
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 64-22 OK, acem003, HollyFrontier (Catoosa, OK), m01028 (Material Full Name, Material Code, Producer/Supplier Name, Producer/Supplier Code)		

Sieve Size	Producer/Supplier:					Comb. Agg.	% Tol. (±)			
	APAC-Central, 46th St (NW pit Tulsa, OK) P/S # m001197201	APAC-Central, 46th St (NW pit Tulsa, OK) P/S # m001197201	APAC-Central, 46th St (NW pit Tulsa, OK) P/S # m001197201	APAC-Central, 46th St (NW pit Tulsa, OK) P/S # m001197201	Holliday Sand & Gravel (Bixby, OK) P/S # m001997212		JMF	Min.	Max.	% Tol. (±)
1" Rock	100	100	100	100	100	100	100	100	100	0
3/4 in (19 mm)	93	100	100	100	100	99	99	92	100	7
1/2 in (12.5 mm)	48	100	100	100	100	89	89	82	96	7
3/8 in (9.5 mm)	22	96	100	100	100	83	83	76	90	7
#4 (4.75 mm)	3	22	93	81	98	64	64	57	71	7
#8 (2.36 mm)	2	4	59	56	87	43	43	38	48	5
#16 (1.18 mm)	1	3	31	39	64	27	27	23	31	4
#30 (.600 mm)	1	2	17	29	38	17	17	13	21	4
#50 (.300 mm)	1	2	8	22	12	10	10	6	14	4
#100 (.150 mm)	1	2	5	18	2	7	7	4	10	3
#200 (.075 mm)	0.9	2.0	3.8	14.0	0.3	5.2	5.2	3.2	7.2	2
AC Content %						4.7	4.7	4.3	5.1	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

	°F (°C)	Required
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	6	86.5	85.5 - 91.5
Ndes	50		96.0

Tests on Aggregates	Required	Units
Durability Index	69	40 min. %
F.A.A. %U	N/A	%
Flat and Elongated	10	max. %
Fractured Faces	100/100	85/80 min. %
Insoluble Residue	3.3	N/A %
LA Abrasion	29.7	40 max. %
Micro-Deval	16.5	N/A %
Permeability	2.3	12.5 max. 10 ⁻⁵ cm/s
Sand Equivalent	74	40 min. %
Pba	0.69	
IOC	0.20	%
Gse	2.645	
Gsb	2.598	
Specimen Weight	4750	g

Tests on Compressed Mixtures							
%AC	Gmb	Gmm	% Density of Gmm	% Density Required	% VMA	% VMA Required	% VFA
4.3	2.338	2.473	94.5	Design / Field	13.9	Design / Field	60.4
4.8	2.363	2.454	96.3	96.0 / 94.5 - 97.4	13.4	13.5 / 13.0	72.4
5.3	2.382	2.436	97.8		13.2		83.3

Dust Prop.	ITS (PSI)	94.1	N/A min.
1.4	TSR	0.82	0.80 / 0.75 min. (Design / Field)
1.3	Compacted Wt. (lbs/sy/1" thick) = 108.1 @ 4.7 % Asphalt Cement		
1.1	Dust Prop. Req. 0.6 - 1.6		

Hamburg Rut Test Depth (mm) 5.20 12.50 max. @ 10,000 cycles

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

Comments:

Last Modified By:

Suitor, Kevin ksutor
(User Name and User ID)

Date:

1/26/2018
(mm/dd/yyyy)