



Oklahoma Department of Transportation Mix Design Report

Asphalt Concrete, Type S4 (PG 70-28 OK) Mat'l. Code: asco011

Insoluble ID: I1

(Material Full Name and Material Code)

(Design Type and Design Type ID)

Cummins Const Co P/S # m00556

WS4qc0101486000

(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
5/8" Chips	Dolese Co. (Richards Spur, OK) P/S # m002761601	27
Stone Sand	Dolese Co. (Richards Spur, OK) P/S # m002761601	10
Mine Chat	Mine Chat @ Tri City Area P/S # MineChat	42
Scrns.	Dolese Co. (Richards Spur, OK) P/S # m002761601	8
Sand (Unlisted Source)	Lightle Sand (Hennessey, OK)	13
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. (±)
	5/8" Chips	Stone Sand	Mine Chat	Scrns.	Sand (Unlisted Source)			JMF	Min.	Max.	
3/4 in (19 mm)	100	100	100	100	100	100	100	100	100	0	
1/2 in (12.5 mm)	96	100	100	100	100	99	99	92	100	7	
3/8 in (9.5 mm)	64	100	100	100	100	90	90	83	97	7	
#4 (4.75 mm)	8	97	76	90	100	64	64	57	71	7	
#8 (2.36 mm)	4	62	51	53	100	46	46	41	51	5	
#16 (1.18 mm)	2	32	31	36	99	33	33	29	37	4	
#30 (.600 mm)	1	17	27	24	77	25	25	21	29	4	
#50 (.300 mm)	1	8	20	18	30	15	15	11	19	4	
#100 (.150 mm)	1	3	15	14	7	9	9	6	12	3	
#200 (.075 mm)	0.7	2.4	9.1	11.5	1.2	5.3	5.3	3.3	7.3	2	
AC Content %						5.1	5.1	4.7	5.5	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 Asphalt Cement	Found
Specific Gravity @ 77 ° F	1.0100

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

Tests on Compressed Mixtures (@ Design AC)			
	# Gyr.	% Density of Gmm	% Density Required
Nini	7	87.9	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 min.	%
Insoluble Residue	40 min.	%
LA Abrasion	25 max.	%
Micro-Deval	12.7 N/A	%
Permeability	3.8 12.5 max.	10 ⁻⁵ cm/s
Sand Equivalent	70 45 min.	%
Pba	0.63	
IOC	0.18	%
Gse	2.651	
Gsb	2.608	
Specimen Weight	4800	g

Tests on Compressed Mixtures								
%AC	Gmb	Gmm	% Density of Gmm	% Density Required	% VMA	% VMA Required	% VFA	% VFA Required
4.6	2.311	2.467	93.7	Design / Field	15.5	Design / Field	59.4	72 - 77
5.1	2.349	2.448	96.0	96.0 / 94.5 - 97.4	14.5	14.5 / 14.0	72.4	
5.6	2.360	2.430	97.1		14.6		80.1	

Dust Prop. 1.3 **Dust Prop. Req.** 0.6 - 1.6
 1.2
 1.1

ITS (PSI) 113.9 N/A min.
 TSR 0.89 0.80 / 0.75 min. (Design / Field)
 Compacted Wt. (lbs/sy/1" thick) = 107.7 @ 5.1 % Asphalt Cement

Hamburg Rut Test Depth (mm) 3.64 #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)