Mix Design Review - Superpave 12.5 mm Heavy Below Zone

Project Information

Project:	
MCDOT Job No.:	
Material Supplier:	New West Materials
Mix ID:	1201A43K
Mix Type:	12.5 mm Superpave (Heavy)
Intended Use:	Arterial

Submittal Requirements

Mix Design Expiration Date	6/7/2005	
Mix Plant Location	Sun City Plant	
ARPA Certificate	10/17/2005	
Engineer Stamp	Yes / 06-07-04	
Compaction Curves	Yes	
0.45 Power Gradation Chart	Yes / Below Zone	
TSR Test Results, %	0.75	70 Min.

Aggregate Properties

Gradation	Submitted Target	Required	Production Tolerences	
1" (25)				
3/4" (19)		100		± 7
1/2" (12.5)	96	90-100		± 6
3/8" (9.5)	89	<90		± 6
#4 (4.75)				± 6
#8 (2.36)	32	<39.1		± 6
#16 (1.18)	22	<25.6		
#30 (.600)	15	<19.1		± 4
#50 (.300)	9	<15.5		
#200 (.075	4	2.0-10.0		± 2.0

Mix Design Criteria

Table 710.6 Superpave™ Criteria

	Submitted	Heavy Traffic
% of Rice @ N_{ini}	85.9	<89.0
% of Rice @ N_{des}	95.9	96.0±0.2
% of Rice @ N_{max}	93.2	<98.0
% Voids Filled	72.6	65-75
Air Voids @ N_{des}, %	4.1	4.0±0.2

Table 710.7 / Asphalt Content (%)

Mix Designation	Submitted AC, %	For Gradations Below the Restricted Zone
12.5 mm	5.8	4.5 - 6.0

Characteristics	Submitted Target	Heavy Volume Traffic
FF% (Coarse aggregate only) (AZ Test Method 212D)	100 99	85.0, 1 or more 80.0, 2 or more
Uncompacted Voids % Min. (AASHTO T-304, Method A)	46.4	45 Min.
Flat & Elong Pieces % Max. (ASTM D-4791)	0	10 Max.
Sand Equivalent % Min.	77	50 Min.
Plasticity Index (AASHTO T-90)	NP	Non-Plastic
LAR (100 Rev):	5	10 Max.
LAR (500 Rev):	19	40 Max
Film Thickness, Microns	11.7	8-14 Micron

Table 710.8 / Voids in Mineral Aggregate

Nominal Max. Agg. Size/Designation	Max Agg. Size	Submitted VMA, %	Minimum VMA (%)
12.5 mm	19 mm	15.1	14.0

713.3 General

Maximum Theoretical Sp. Gr.	2.462	153.6 (pcf)
Asphalt Absorption on Dry Agg. (%)	1.1	
Binder Type	PG 70-10	
Binder Source	Koch	
Admix Type	Cement - 1P	
Admix Source	Phoenix Cement	
Mixing Temperature	320ºF	
Compaction Temperature	300ºF	

Approved By: [signature] Date: 6-2-04

Maricopa County Department of Transportation Construction Materials Laboratory