

WORKSHEET FOR A MARSHALL MIX DESIGN AASHTO T 245

Project: _____ Date: _____
 Contractor: _____ Class & Grading of mixture: _____
 Asphalt supplier: _____ Grade of asphalt: _____
 Sources for: Aggregates: _____ Mineral filler: _____
 Testing laboratory name: _____ Phone: _____
 Testing performed by: _____
 Testing reported by: _____

English Metric

SUMMARY OF THE PROPOSED JOB-MIX-FORMULA

- | | |
|--------------------------------------------------------------------------------|--------------------------------------------------------|
| 1. Percent asphalt by mass of total mix ¹ , (P _b) _____ | 9. Specific gravity of binder (G _b) _____ |
| 2. Air voids (V _a) _____ | 10. Specific gravity of mineral filler _____ |
| 3. Voids in mineral aggregate (VMA) _____ | 11. Dust-to-Binder ratio (DP) _____ |
| 4. Maximum specific gravity (G _{mm}) _____ | 12. Moisture susceptibility test results: ² |
| 5. Recommended plant mixing temperature, _____ | a. Dry strength, _____ |
| (Attach Temperature Viscosity Curve) | b. Wet strength, _____ |
| 6. Effective specific gravity of aggregate (G _{se}) _____ | c. Index of retained strength, % _____ |
| 7. Marshall stability, _____ | |
| 8. Marshall flow, _____ | |

Gradation Designation: _____

GRADATION TARGET VALUES AND ALLOWABLE DEVIATIONS				SPECIFIC GRAVITY AND ABSORPTION			
Sieve Sizes	Job Mix Formula Target Value ³	Target Value Specification Range %	Allowable Deviation ⁴ %	Fine Aggregate (AASHTO T 84)	Coarse Aggregate (AASHTO T 85)	Combined Aggregate	
				Bulk SG (G _{sb})	_____	_____	_____
				Bulk SSD SG	_____	_____	_____
				Apparent SG (G _{sb})	_____	_____	_____
				Absorption	_____ %	_____ %	_____ %

¹ Establish asphalt cement content (percent by mass of mix) to the nearest 0.01 percent.
² See contract for moisture susceptibility test method: AASTHO T 165/T 167 or AASTHO T 283.
³ Establish target values to the nearest 0.1 percent as a part of the job mix formula.
⁴ Allowable deviations plus or minus from established target values.

WORKSHEET FOR A MARSHALL MIX DESIGN (Continued)

Material Stockpile	Stockpile Description	Blend Ratio
A	_____	_____ %
B	_____	_____ %
C	_____	_____ %
D	_____	_____ %
E	_____	_____ %
Total		_____ %

Stockpile Gradation

Sieve Size	Stockpile A _____ %	Stockpile B _____ %	Stockpile C _____ %	Stockpile D _____ %	Stockpile E _____ %	Blended Stockpile Gradation	Job Mix Formula Target Values	Specification Limits

Aggregate Properties

Property	Result	Specification	Property	Result	Specification
LA Abrasion, % - Grading _____ AASHTO T 96			Fractured Faces, % - <input style="width: 50px;" type="text"/> ASTM D 5821		
Sodium Sulfate Soundness, % AASHTO T 104			Sand Equivalent AASHTO T 176, Alt method #2, reference method		
Durability index (Coarse) AASHTO T 210			Other:		
Durability index (Fine) AASHTO T 210			Other:		

WORKSHEET FOR A MARSHALL MIX DESIGN (Continued)

Trial Number	1	2	3
% Asphalt by mass of total mix, (P _b)			
Effective Binder Content (P _{bc})			
Specimen height,			
Marshall Stability,			
Marshall Flow,			
Bulk specific gravity, (G _{mb})			
Bulk unit mass,			
Max. specific gravity, (G _{mm})			
Dust-to-Binder ratio, (DP)			
% Air voids, (V _a)			
% Voids in mineral aggregate, (VMA)			
Average Marshall Stability value,			
Average Marshall Flow value,			
Average % Air voids, (V _a)			
Average % Voids in mineral aggregate, (VMA)			
Trial Number	4	5	6
% Asphalt by mass of total mix, (P _b)			
Effective Binder Content (P _{bc})			
Specimen height,			
Marshall Stability,			
Marshall Flow,			
Bulk specific gravity, (G _{mb})			
Bulk unit mass,			
Max. specific gravity, (G _{mm})			
Dust-to-Binder ratio, (DP)			
% Air voids, (V _a)			
% Voids in mineral aggregate, (VMA)			
Average Marshall Stability value,			
Average Marshall Flow value,			
Average % Air voids, (V _a)			
Average Voids in mineral aggregate, (VMA)			

Test Results for Each of the Individual Moisture Susceptibility Test Specimens

Percent asphalt binder: _____ AASHTO T 165/T 167 AASHTO T 283
 Antistrip, type, amount: _____ Specimen Dia: 6 inch 4 inch
 Freeze cycle: Yes No

Sample I.D.							Average
Height	Dry						
	Wet						
Bulk Specific Gravity	Dry						
	Wet						
Air Voids	Dry						
	Wet						
Strength	Dry						
	Wet						
Retained Strength, %							

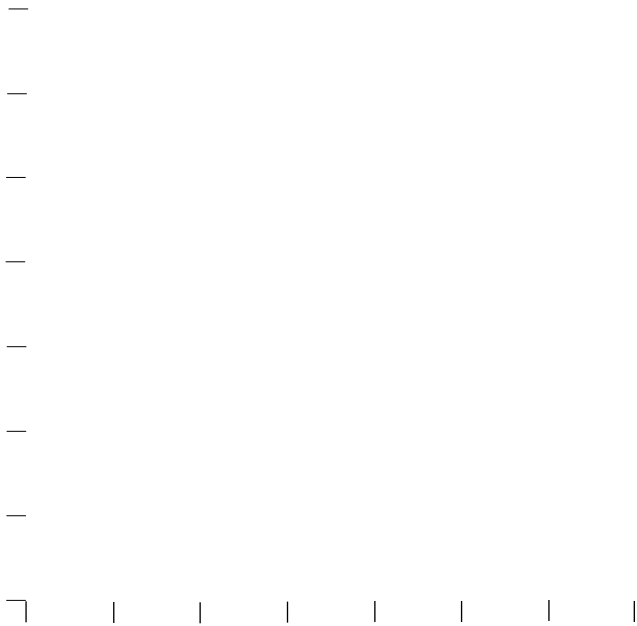
WORKSHEET FOR A HVEEM MIX DESIGN (Continued)

Design Curves for Proposed Job Mix Formula (JMF)

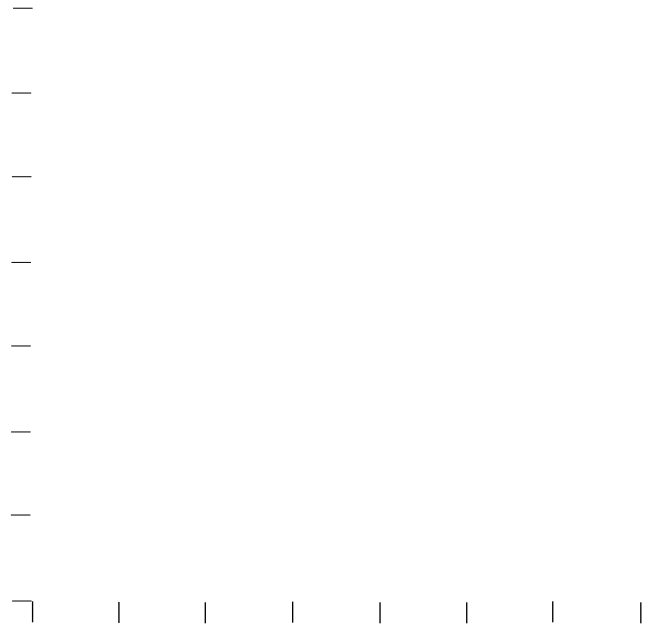
AIR VOIDS (V_a)

MARSHALL FLOW

% Air voids (V_a)



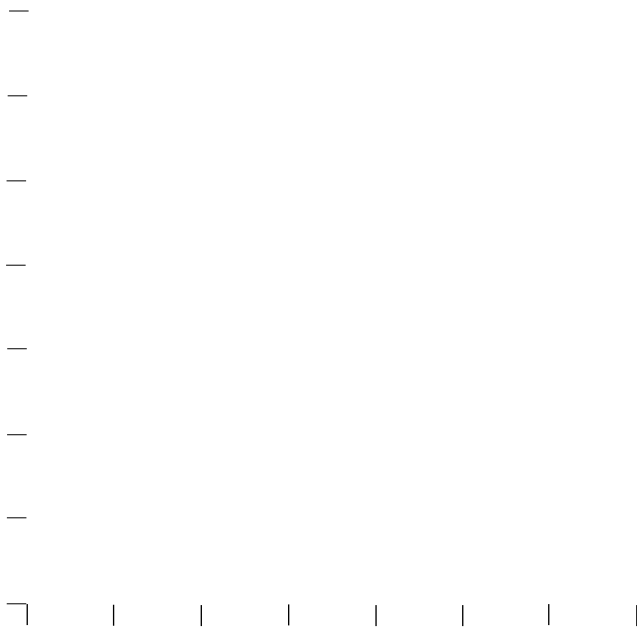
% Asphalt binder (P_b)



% Asphalt binder (P_b)

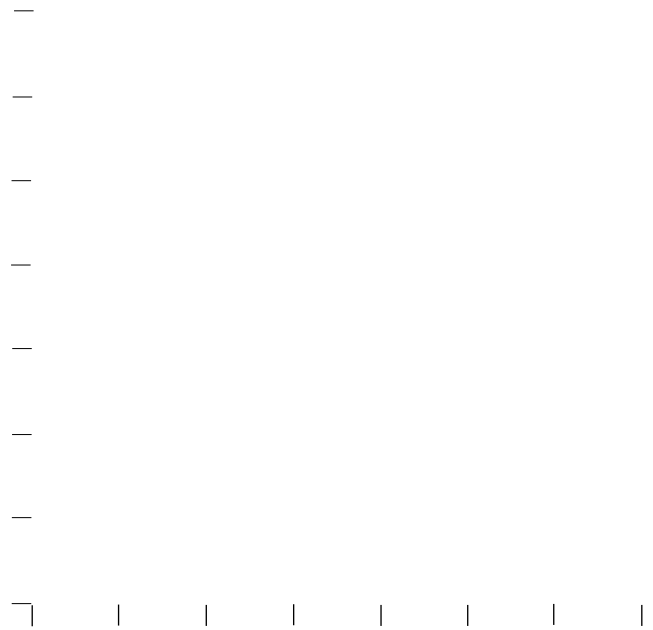
MARSHALL STABILITY

VMA



% Asphalt binder (P_b)

Voids in mineral aggregate



% Asphalt binder (P_b)



RECLAIMED ASPHALT PAVEMENT (RAP) DATA SHEET

Location: _____

Sampled by: _____

Tested by: _____

Date: _____

% of RAP in Mixture	RAP 1		RAP 2	
	Dry Gradation	T 308 Burned Gradation	Dry Gradation	T 308 Burned Gradation

AC by % mix, Pb	Specific Gravity	Specific Gravity
Gmm		
Gse Gse = (100 - Pb)/(10/Gmm - Pb/Gb)		
Gsb Gsb = Gse/(((Pba*Gse)/(100*Gb)) + 1)		
Pba = (assumed)		
Gb = (assumed)		

Remarks:

