

# NorthEast Transportation Training & Certification Program

## HMA Marshall Volumetric Properties Test Report (T 166, T 245)

Date/Time:	Lab/Location:		
Weather:	Date Rec'd #:	Random Sample: Yes No	
Project:	Lab Login #:	Lot #:	
Contract #:	Material ID:	Sublot #:	
Contractor:	Material #:	Sample Location:	
Pay Item #:	Sample #:	Station:	
Source:	Sample Type: OC A-V IA DR Other	Offset:	
Plant Type:	Sampled By/Cert. #:		

### Bulk Specific Gravity of Compacted HMA (T 166)

Specimen #:				
Mass of Dry Specimen in Air (A):				
Mass of Specimen at SSD (B):				
Mass of Specimen in Water (C):	( @ 77 +/- 1.8 °F )			
Specimen Volume (V):	(B-C)			
<b>Bulk Specific Gravity of Specimen (G<sub>mb</sub>):</b>	<b>(A / (B - C))</b>			
<b>Unit Weight, lb/ft<sup>3</sup>:</b>	<b>(G<sub>mb</sub> * 62.4)</b>			

### Volumetric Analysis of Compacted HMA

Theoretical Maximum Specific Gravity (G <sub>mm</sub> ):	(From T 209)				<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">Average</th> <th style="width: 50%;">Specification</th> </tr> </thead> <tbody> <tr><td> </td><td> </td></tr> </tbody> </table>	Average	Specification																						
Average	Specification																												
Percent Minus 75 µm of Sample (75 µm):	(From T 11)																												
Percent PG Binder of Sample (P <sub>b</sub> ):																													
Bulk Specific Gravity of Combined Aggregate (G <sub>sb</sub> ):																													
Specific Gravity of PG Binder (G <sub>b</sub> ):																													
<b>Percent Voids in Mix (P<sub>v</sub>):</b>	<b>(100 * ((G<sub>mm</sub> - G<sub>mb</sub>) / G<sub>mm</sub>))</b>																												
<b>Voids in the Mineral Agg. (VMA):</b>	<b>(100 - ((G<sub>mb</sub> * (100 - P<sub>b</sub>)) / G<sub>sb</sub>))</b>																												
<b>Voids Filled with Asphalt (VFA):</b>	<b>((100 * (VMA - P<sub>v</sub>)) / VMA)</b>																												
<b>Effective Agg. Specific Gravity (G<sub>se</sub>):</b>	<b>(100 - P<sub>b</sub>) / ((100 / G<sub>mm</sub>) - (P<sub>b</sub> / G<sub>b</sub>))</b>																												
<b>Percent Binder Absorbed: (P<sub>ba</sub>):</b>	<b>(100 * ((G<sub>se</sub> - G<sub>sb</sub>) / (G<sub>sb</sub> * G<sub>se</sub>))) * G<sub>b</sub></b>																												
<b>Percent Binder Effective: (P<sub>be</sub>):</b>	<b>(P<sub>b</sub> - ((P<sub>ba</sub> / 100) * (100 - P<sub>b</sub>)))</b>																												
<b>Fines to Effective Asphalt Ratio:</b>	<b>(75 µm / P<sub>be</sub>)</b>																												

### HMA Marshall Stability and Flow (T 245)

Number of Blows Each Side:					<table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr><td> </td><td> </td></tr> </tbody> </table>																
Marshall Specimen Fabrication Temp.:	( °F )																				
Maximum Load Dial Reading:																					
Volume (V)/ Height Correction Factor (Vcf):																					
Uncorrected Stability (Su):																					
<b>Corrected Stability (Sc):</b>	<b>(Vcf * Su)</b>																				
<b>Flow in 0.01 in.:</b>																					

Comments:

Tested by:	Reviewed by:
Certification #:	Certification #:
Date:	Date:

Results Within Specification Limits:

Results Outside Specification Limits: