



Soils and Aggregate Field Certification Study Guide



VIRGINIA DEPARTMENT OF TRANSPORTATION

SOILS AND AGGREGATE COMPACTION

2016

FIRST DAY

7:30 – 8:00	Course Registration	MCS Staff
8:00 – 9:00	Chapter 1: Characteristics of Soils and Their Relationship to the Compaction of Soils	John Schuler
9:00 – 11:30	Chapter 2: Construction and Testing of Embankment Material	John Schuler
11:30 – 12:30	Break for Lunch	
12:30 – 2:30	Chapter 3: Construction and Testing of Subgrade Material	John Schuler
2:30 – 4:30	Chapter 4: Installaton of Pipe and Testing of Pipe Backfill	Walt Catlett

SECOND DAY

8:00 – 10:30	Chapter 5: Establishing Target Values for Density and Moisture Content	Duane Sayre
10:30 – 11:30	Chapter 6: Field Moisture and Density Testing with the Nuclear Gauge	Scott Manning
11:30 – 12:30	Break for Lunch	
12:30 – 4:30	Chapter 6: Field Moisture and Density Testing (Continued)	Scott Manning

THIRD DAY

8:00 – 11:30	Chapter 7: Correcting Density Test Results for Plus 4 Material	Duane Sayre
11:30 – 12:30	Break for Lunch	
12:30 – 4:30	Chapter 8: Roller Patterns, Control Strips and Test Sections	Scott Manning

Examination: Open book - 50 multiple choice (20 come from the 8 math problems)

Grading: Score must be 70% or better to pass

Certification: Students must successfully pass this exam and a proficiency test by Dec. 31, 2016 in the following areas: One Point Proctor, Field Moisture Testing, Speedy Moisture Testing, Direct Transmission, Roller Pattern, Control Strip and Test Section. Proof of successful completion of proficiency tests will be sent to the Central Office Materials Division Training Section by the examiner. All students must provide proof that they have passed an NRC approved Nuclear Safety Training Course prior to proficiency testing.

Scheduling: Contact the Materials Certification Training Section at (804)328-3158 to schedule a proficiency test.

VIRGINIA DEPARTMENT OF TRANSPORTATION

SOILS AND AGGREGATE COMPACTION

FIELD CERTIFICATION

STUDY GUIDE

2016

Prepared By: The Virginia Department of Transportation (VDOT), Materials Division

Note: The information included in this manual is generally compatible with current VDOT Road and Bridge Specifications; however, it should not be considered or used as a primary reference for VDOT specifications. In order to ensure you are referencing the right specifications, always consult the current or applicable VDOT Road and Bridge Specification Book.

VIRGINIA DEPARTMENT OF TRANSPORTATION

SOILS AND AGGREGATE COMPACTION

2016

TABLE OF CONTENTS

Chapter 1	Characteristics of Soils and Their Relationship to the Compaction of Soils	1-1 – 1-18
Chapter 2	Construction and Acceptance Testing of Embankment Material	2-1 – 2-24
Chapter 3	Construction and Acceptance Testing of Subgrade Material	3-1 – 3-18
Chapter 4	Installation of Pipe and Testing of Pipe Backfill	4-1 – 4-20
Chapter 5	Establishing Theoretical and Target Values for Density and Moisture Content	5-1 – 5-42
Chapter 6	Field Moisture and Density Testing with the Nuclear Gauge	6-1 – 6-30
Chapter 7	Correcting Density Test Results for Material Retained on the No. 4 Sieve	7-1 – 7-36
Chapter 8	Roller Patterns, Control Strips and Test Sections	8-1 – 8-46
Appendix A	Minimum Testing Frequencies	A-1 – A-4
Appendix B	Minimum Density Requirements	B-1 – B-4
Appendix C	Except from Road and Bridge Specifications	C-1 – C-66
Appendix D	Virginia Test Methods	D-1 – D-22
Appendix E	Proficiency Checklists	E-1 – E-10
Appendix F	Nuclear Gauge Documents	F-1 – F-12
Appendix G	Answers to Study Questions	G-1 – G-62

