

Soil Nailing Guide Specification

TABLE OF CONTENTS

1. GENERAL	1
1.1 Purpose of Specification	1
1.2 Scope of the Work	1
1.3 Qualifications of the Contractor	1
1.4 Related Project Specifications	1
1.5 Definitions	2
1.6 Allowable Tolerances	4
1.7 Design Criteria	4
1.8 Ground Conditions	4
2. REFERENCED CODES AND STANDARDS	5
2.1 American Society for Testing and Materials (ASTM)	5
2.2 American Association of State Highway and Transportation Officials (AASHTO)	6
2.3 American Concrete Institute (ACI)	7
3. SUBMITTALS	7
3.1 Qualifications	7
3.2 Design Submittals	7
3.3 Construction Submittals	8
3.4 Pre-Construction Meeting	8
3.5 Installation Records	9
4. DESIGN REQUIREMENTS	9
4.1 Design Methods	9
5. PRODUCTS AND MATERIALS	9
5.1 Soil Nails	9
5.1.1 Nail Tendons	9
5.1.2 Couplers	9
5.1.3 Anchorage and Bearing Plates	10
5.1.4 Centralizers	10
5.1.5 Grout Tubes	10
5.1.6 Corrosion Protection	10
5.1.6.1 Epoxy Coating	11
5.1.6.2 Galvanization	11
5.1.6.3 Encapsulation	11

5.2	Nail Grout	11
5.2.1	Water.....	11
5.2.2	Cement.....	11
5.2.3	Admixtures	11
5.2.4	Fillers	12
5.3	Wall Drainage Network	12
5.3.1	Geocomposite Drain Strips.....	12
5.3.2	PVC Connector and Drain Pipes	12
5.3.3	Wall Footing Drains	13
5.4	Construction Facing	13
5.5	Concrete and Shotcrete Permanent Facings	13
5.5.1	Structural Shotcrete	13
5.5.2	Cast-In-Place Concrete	15
5.5.3	Precast Concrete	15
5.6	Materials Handling and Storage	15
6.	EXECUTION	16
6.1	Construction Procedure	16
6.2	Soil Nail Installation and Grouting	16
6.3	Construction Facing Installation.....	17
6.3.1	Excavation	17
6.3.2	Shotcreting.....	18
6.4	Permanent Facing Installation	19
6.4.1	Structural Shotcrete	20
6.4.2	Cast-In-Place Concrete	22
6.4.3	Precast Concrete	22
7.	NAIL TESTING	22
7.1	Testing Equipment and Setup.....	22
7.2	Testing Methods.....	23
7.2.1	Production Verification Testing.....	23
7.2.2	Pre-Production Verification Testing and Production Proof Testing.....	25
7.2.2.1	Pre-Production Verification Testing.....	25
7.2.2.2	Production Proof Testing	26
8.	MEASUREMENT AND PAYMENT	27
8.1	Method of Measurement.....	27
8.2	Basis of Payment.....	28
	HOLLOW BAR SUPPLEMENT	29