

TABLE OF CONTENTS

INTRODUCTION

GUIDELINE STRUCTURE

CHAPTER 1 – GENERAL

101 Purpose of Guideline	1-1
102 Terms and Definitions	1-2
103 Description of the Press-in Piling Method and Basic Mechanisms	1-3
104 Description of Project	1-7
105 Scope of Work	1-8
106 Contractor's Responsibilities	1-9

CHAPTER 2 – STANDARDS AND CODES OF PRACTICE

201 General	2-1
202 Referenced Codes and Standards	2-1

CHAPTER 3 – GROUND INVESTIGATION

301 General	3-1
302 Soil Properties and Strength	3-1
303 Standard Penetration Test (SPT)	3-1
304 Cone Penetration Test (CPT)	3-4
305 Pressuremeter Test (PMT)	3-6
306 Dynamic Penetration Test (DPT)	3-9
307 Sieve Analysis Test (Particle Size Distribution of Soil)	3-10
308 Triaxial Compression Test	3-11
309 Unconfined Compressive Test	3-13
310 Groundwater	3-14
311 Contamination	3-15

CHAPTER 4 – PILING

401 General	4-1
402 Location and Description of the Site	4-1
403 Nature of the Works	4-1
404 Working Area	4-2
405 Sequence of the Works	4-2
406 Other Concurrent Works	4-3

406.1 General	4-3
406.2 Co-ordination with Other Concurrent Works	4-3
407 Office and Other Facilities for Engineers	4-4
408 Health, Safety and Welfare	4-6
408.1 General	4-6
408.2 Safety Responsibilities	4-6
408.3 Management of Health and Safety at Work	4-6
408.4 Health and Safety at Work Act	4-6
408.5 Construction Design & Management (CDM) Regulations	4-7
408.6 Provision for the Engineer	4-7
408.7 Site Induction and On-site Training	4-7
408.8 Record of Man Hours and Accidents	4-8
408.9 Life-saving and First Aid	4-8
408.10 Fire Fighting Equipment	4-8
408.11 Regulations	4-8
408.12 Safety Boat	4-9
409 Piling Specification	4-9
410 Piles	4-10
410.1 Standards and Code of Practice	4-10
410.2 Minimum Length of Piles to be supplied	4-11
410.3 Grade of Steel	4-11
410.4 Manufacturing Tolerance	4-12
410.5 Minimum Properties of Piles/Minimum Section Modulus, Thickness of Pile	4-13
410.6 Types of Head and Toe Preparation	4-14
410.7 Corrosion Protection	4-14
410.8 Steel Sheet Pile	4-17
410.9 Steel Tubular Pile (Steel Pipe Pile)	4-20
410.10 Interlocks	4-25
410.11 Special Piles	4-25
411 Performance Criteria for Piles	4-26
411.1 Performance Criteria for Working Piles	4-26
411.2 Performance Criteria for Movement Under Lateral Loads	4-26
411.3 Pile Setting Out	4-28
411.4 Design Life	4-30
411.5 Specified Working Loads (SWL) for Piles	4-31
411.6 Penetration Depth or Toe Level	4-31
411.7 Water Exclusion (Water Retention) Requirements	4-32
411.8 Fire Protection	4-37
412 Execution	4-40
412.1 Contractor Qualification	4-40

412.2 Working Hours.....	4-40
412.3 Commencing Surface Level (Working Platform)	4-41
412.4 Performance of Working Piles.....	4-42
412.5 Acceptance Criteria	4-43
412.6 Surcharge Limits	4-46
412.7 Noise Limits.....	4-47
412.8 Vibration Limits	4-51
412.9 Permissible Damage Criteria for Existing Structures or Utility Services.....	4-52
412.10 Permissible Limits on Ground Movement.....	4-54
412.11 Pile Installation	4-58
412.12 Pile Extraction	4-60
412.13 Pile Drivability	4-61
412.14 Driving Assistance to Ease Pile Drivability	4-63
412.15 Exposed Height of Reaction Piles	4-64
412.16 Method Statement (Construction Methodology).....	4-67
412.17 Installation Records.....	4-68
412.18 Monitoring Requirements	4-72
412.19 Instrumentation for Piles and Embedded Walls	4-73
412.20 Practical Refusal	4-75
412.21 Obstruction Management Criteria.....	4-77
412.22 Welding.....	4-84
412.23 Flame Cutting	4-98

CHAPTER 5 – EXCAVATION AND EARTHWORKS

501 General	5-2
502 Site Datum and Benchmarks	5-3
503 Earthwork Plan	5-3
504 Site Investigation	5-4
505 Trees and Vegetation	5-5
506 Surcharge Load	5-6
507 Existing Ground Levels	5-7
508 Excavation	5-7
509 Support	5-8
510 Inspection of Excavation	5-9
511 Benching	5-10
512 Accuracy: Permissible Deviations from Formation Levels	5-10
513 Minor Obstructions.....	5-11
514 Disposal of Excavated Material	5-11
515 Reuse of Excavated Material	5-12
516 Backfilling of Excavations	5-12

517 Filling Material	5-13
518 Hardcore	5-14
519 Hardcore Blinding	5-14
520 Deformation Survey	5-15

CHAPTER 6 – LOAD TESTING OF PILES

601 General	6-1
602 Pile Load Testing (Static Load Testing)	6-3
603 Pile Load Testing (Dynamic Load Testing)	6-15
604 Pile Load Testing (Rapid Load Testing)	6-16

CHAPTER 7 – QUALITY CONTROL/QUALITY ASSURANCE (QC/QA)

701 General	7-1
702 Quality Control in Construction	7-1
703 Quality Assurance in Construction	7-2