

Index

- Acceleration, 6, 74, 77, 81, 89, 91, 190, 244, 245
Accelerometer, 7, 87, 104, 105, 110, 112, 179, 190, 244
Acceptance criteria, 18, 161
ADSC-IAFD, 56, 220, 235
Anionic, 31
ASTM D1143, 65, 241
ASTM D3689, 241
ASTM D3966, 69, 241
ASTM D4945, 217, 219, 240
ASTM D5882, 105, 219, 240, 244
ASTM D6760, 147, 217, 219, 239
AFNOR, 217, 236, 239, 240, 241
Amherst, MA, 9, 89
Anomaly, 9, 10, 17, 55, 56, 132, 137, 145, 147–149, 151, 153, 157, 161, 179, 181, 186, 190, 194, 195, 201, 207, 215, 216, 220, 248, 249, 252–254
Attapulgate, 29, 31, 32
Augered, Cast-in-Place (ACIP) Piles, 48
Axial compression, 61–68
- Bar wave, 125
Barrette, 32
BAM, 5
Bell, 11, 45, 50, 52, 160
Bentonite, 29, 30–32, 169, 170
Birmingham, P., 89, 91
Bored pile, 14, 16, 28, 44–46, 60, 79, 103, 123, 168
- Borehole caliper, 52
British Steel Piling, 21, 22
BS 8004 2, 65
BSP, 21, 22
- Caisson, 4, 12, 103, 115
CALTRANS, 8, 21, 53, 158, 161, 217
Cameron, G., 175, 176, 202
Capacity, 6, 9, 10, 13, 17–19, 36, 42, 44, 55, 59, 60, 61, 64, 65, 67, 71, 74, 76–79, 84, 86–88, 91, 98–100, 126, 208, 219, 221
CAPWAP, 6, 60, 74, 75, 77, 78
Case Western Reserve University, 5, 74
Casing oscillator, 30
Casing rotator, 30
CEBTP, 5, 6, 8, 79, 84, 88, 103, 116, 118, 119, 143, 145, 162, 189, 190, 211, 236
CIDH, 28
CIRIA, 117, 127, 128, 130, 153, 191, 237
Cofferdam, 20
Computer simulation, 186
Concretoscopy, 198
Constant rate of penetration test, 65
Continuous Flight Auger (CFA) piles, 33
Coupling, 26
Crane mount, 29, 30
Crosshole Sonic Log, 8, 15, 18, 101, 143–147, 150, 152, 159, 170, 179, 187, 188, 199, 203, 205, 217, 221, 239, 249, 251
Crosstown Expressway, 13

- CSL, 8, 15, 141–148, 150–153, 157, 161, 162, 165, 168–172, 187, 199, 205, 219, 243, 248, 249, 250–254
- Cut-off wall, 32
- Damping, 80, 81, 91, 92, 101–103, 110, 123, 124, 128, 133, 138, 144, 167, 179, 180, 181, 183, 187, 223, 224, 229, 231, 232, 245
- Damping coefficient, 229
- Davis, A. G., 1, 19, 43, 47, 59, 71, 82, 101, 110, 115–120, 125, 126, 132–137, 141, 143, 162, 167, 171, 172, 175, 176, 178, 189, 202, 211, 223, 235, 239, 243
- Davisson failure, 84
- Debonding, 17, 103, 151, 153, 187
- Deep foundation, 2, 3, 5, 10, 19, 42, 43, 44, 47, 116, 121, 126, 127, 147, 167, 189, 191, 201, 202, 204, 205, 215, 216, 217, 243
- Deep Foundations Institute, 3, 4, 5, 17, 74, 207, 220, 237
- Deep mixing, 41
- Defect, 2, 9, 17, 18, 19, 126, 138, 157, 158, 163, 164, 171, 172, 173, 188, 221
- Deconvolution, 103, 137
- Density, 5, 30, 31, 42, 104, 106, 123, 135, 138, 141, 144, 156, 157, 158, 159, 160–162, 188, 224, 244, 249
- DFI, 4, 5, 20, 53, 56, 74, 76, 96, 179, 217, 220, 237
- Diaphragm Wall, 32
- Differential settlement, 11, 12, 17, 178
- Displacement pile, 21, 34
- Direct push, 27, 28
- Double-acting hammer, 24
- Down-hole test, 143, 175
- Drilled shaft, 19, 60, 235
- Drilling monitor, 53
- Driven, cast-in-place pile, 11, 16, 19
- Driven pile, 5, 22, 44, 50, 74
- Drop-hammer, 22, 30, 45, 81
- Dynamic compaction, 41, 42
- Dynamic Stiffness, 16, 124–127, 138, 245
- Effective mass, 126, 128
- Endoscope, 198
- Engineering News Formula, 71, 77
- Fast Fourier Transform, 135, 136, 140, 245
- FAT, 145, 147, 252
- Fawley, 11
- Federal Highway Administration, 1, 6, 40, 237
- FFT, 8, 135, 136, 245
- FHwA, 1, 5, 6, 8, 9, 10, 36, 60, 99, 131, 141, 150, 168–172, 179, 212, 214, 237, 238
- First arrival time, 252
- Flaw, 17
- FLPIER, 95
- FOREVER, 40
- Free-fall, 81, 88, 89
- Frequency, 5, 121, 122, 125, 126, 129, 130–132, 135, 136, 183, 185, 232, 233
- Fundex, 96
- Gamma/gamma logging, 101, 143, 155–159, 161, 167, 170, 178, 187, 188, 198, 199, 203, 217, 240
- Gates Formula, 77
- G-Cell, 7
- Geophone, 7, 104, 179, 190, 244
- Glacial till, 11–13, 127, 128, 168
- Gnaedinger, J.P., 7
- Goble, G.G., 6, 72, 74–77, 84, 103
- GRL, 84–86, 88–90, 189
- GRLWEAP, 76
- Guided wave, 201
- Hardpan, 12, 44
- Hirsh, T.J., 72
- Hong Kong Housing Authority, 14, 214
- H-pile, 28, 33, 48
- Hydrophone, 162–164
- Hypergeometric distribution, 176
- IFFT, 136, 140
- Impedance Log, 103, 137, 138, 140, 141, 179
- Impulse Echo, 35, 110, 219, 245
- Impulse Response, 35, 103, 110, 115, 117, 119, 121, 123, 125, 127, 129, 131, 133, 135, 167, 178, 219, 245
- Induced polarization, 191
- Inertance, 126
- Injection grouting, 41
- Interlock, 21
- Institution of Civil Engineers, 11, 238
- Integrity test, 244, 246
- Isaacs, D., 72
- ISSMGE, 5, 238
- Karst, 50, 54

Index

269

- Lateral load test, 32, 46, 61, 68, 69, 92, 221, 241
Load cell, 7, 61–63, 66–69, 91, 119, 120, 179
Load and Resistance Factor Design, 214
Load/settlement, 84, 85
Load transfer test, 64
Long, J., 77, 78, 98
Lowery, L. L., 72
LPILE, 95
LRFD, 214
- Measured Energy Method, 77
Mechanical Impedance, 123, 133, 230
Microconcrete, 33
Micropile, 35, 36, 37, 38, 39
Middendorp, P., 89, 91, 107
MIMP, 103, 118, 119, 120
Millennium Bridge, 26
Minipile, 35, 38
Modified unloading point method, 91
Mullins, G., 84
- National Geotechnical Experimental Site, 89
Neumaier Hall, 11
Newton's Apple, 88
NGES, 9, 84
Northwestern University, 5, 84, 201
Nondestructive Testing, 1, 5, 10, 16, 175, 176, 213, 214
NDT, 1, 2, 3, 6, 7, 8, 9, 10, 16, 20, 35, 41, 42, 53, 101, 131, 151, 168, 170, 171, 175, 176, 177, 202, 204, 207, 211–217, 243
- O-cell, 66, 67
Olson Instruments, 113, 243
Osterberg Cell, 66
Over-design, 10, 17
Over-driving, 24, 72
- Parallel Seismic test, 162
Paquet J., 6, 7, 8, 79, 81, 82, 102, 103, 115, 117, 118, 120, 121, 137, 149, 167, 179
Paikowsky, S., 77, 99
PDA, 77, 78
PDP-Wave, 76
Pile Driving Analyzer, 77
Pile load tester, 99
Pile Simulation, 132
Pile-top rig, 30
Pilot hole, 50, 51
Pin Pile, 35
- Polymer slurry, 31
PLT, 96, 97, 98
Precast, 4, 7, 22, 44, 57, 79, 103, 171, 208
Profile, 24, 25, 43, 53, 61, 96, 137–139, 141, 143–146, 148, 157, 172, 186, 252, 253
Profound, bv, 73
Proof test, 60–63
- Quality management, 212, 213, 215
Quick load test, 65
- Radar, 41, 87, 195
Rayleigh wave, 136
Ray-path, 113, 150, 151
Reaction system, 61
Reflectogram, relative, 138–140
Refraction, 151, 154, 224
Reinforcing, 7, 11, 21, 33, 35, 51, 52, 55, 64, 66, 85, 86, 89, 108, 143, 145, 154, 155, 158, 159, 160, 161, 172, 188, 191–196, 198, 204, 205, 207, 249–251
Reliability, 2, 10, 34, 168, 173, 175, 178, 179, 186, 187, 189, 202
Resistance, 4, 27, 40, 46, 64, 77, 81, 82, 100, 106, 107, 133, 160, 191, 193–196, 204, 207, 213, 215, 225, 231
Resistivity, 41, 192, 193, 195
Resonant frequency, 26, 122, 124, 125, 181, 223
Restrike, 75, 78, 79, 98, 99
Reverse circulation, 30
Rock socket, 67
Rotary drilling, 29
RUFUS, 173
- Secant, 32, 33, 203
Segmental unloading point method, 100
Self-consolidating concrete, 203
Self-potential, 191
Set, 2, 3, 13, 20, 22, 25, 29, 34, 41, 48, 51, 59, 64, 72, 75, 76, 77, 79, 80, 81, 82, 87–93, 96–99, 103, 104, 116, 118, 144, 145, 150, 154, 157, 161, 163, 168, 170, 176, 192–194, 196, 204–206, 208, 213, 220, 251, 254
Set retarder, 204, 205
Shaft inspection device, 52
Shear wave, 135
Sheet pile, 21
Shell and auger, 29
Shell pile, 22

- Single-acting hammer, 23
SID, 52, 53, 198
SIMBAT, 79, 80–84
Sister bar, 64
Smart structures, 208
Smith, E.A.L., 4, 20, 72, 75
Soil setup, 79
Sonic Echo, 40, 101, 103, 105, 107, 110, 111, 113, 131, 170, 171, 178, 201, 245
Sonic Mobility, 40, 101, 115, 117, 119, 121, 123, 125, 127, 129, 131, 133, 135, 170, 171, 201, 203, 245
Spokane, 8
SSL, 153, 154, 155, 156
Static load test, 60, 65, 124
Statnamic load test, 89–95
Stone column, 40, 41
Strain, 3, 5, 6, 7, 12, 64, 71, 72, 74–79, 81–83, 85–89, 91, 93, 95–99, 101, 103, 105, 107, 111, 113, 126, 137, 143, 145, 147, 149, 151, 153, 155, 157, 159, 161, 163, 164, 165, 170, 178, 189, 208, 209, 212, 216, 217, 218, 219, 220, 244, 248
Strain gauge, 74, 81, 82, 87, 89, 91, 208
Stress wave, 7, 72, 104, 107, 110, 112, 201

Tapered pile, 21
TDR, 115, 119
Telltale, 64
Tensile strain, 72
Testconsult, 84, 118, 152, 153, 243
Texas Transportation Institute, 72
The Netherlands Organisation, 5, 89, 238
Theodolite, electronic, 81
Timber pile, 4
Time, 1, 3, 5–9, 12–16, 18, 24, 34, 35, 41, 44, 46, 49, 52, 54, 59, 60, 61, 64, 65, 67, 75, 76, 79, 81, 84, 86, 88, 89, 96, 98, 99, 101–107, 110, 112, 115, 116–118, 120, 121, 129, 132, 135–138, 140, 141, 143–145, 147–151, 158, 161–164, 168, 171, 173, 179, 180–182, 186, 189, 198, 199, 205–208, 212, 216–218, 220, 221, 223, 239, 244, 245, 247, 249

TNO, 5, 6, 7, 75, 76, 84, 85, 86, 88, 89, 96, 102, 103, 118, 189, 211, 238
TNO-Wave Tobacco Dock
Tomographic, 147, 148, 149, 150, 151, 252
Tomography, 17, 41, 149–153, 195
Transducers, 7, 34, 64, 87, 112, 113, 116, 143, 145, 148, 195, 199, 208, 246, 251, 252, 253
Transient Dynamic Response, 115
Tremie, 54, 169, 170, 204, 205
TTI, 72

Ultra-seismic test, 112
Ultrasonic, 6, 52, 102, 143, 145, 151, 249, 253
Ultrasonic Pulse Velocity, 102, 143, 249
Unified soil classification system, 56
Unloading point method, 91, 100

Variable moment, 26
Varved, 172
Velocity, 5, 7, 8, 74, 75, 77, 80–82, 87, 102, 104–106, 110, 112, 118, 122, 123, 129, 130–132, 135–138, 140, 141, 147, 154, 163, 164, 167, 179, 190, 201, 205, 223, 224, 226, 227, 229, 233, 244–247, 249, 252, 253
Velocity reflectors, 135
Verticality, 48
Vibration test, 116, 118
Vibrator, 7, 22, 25, 26, 115, 116, 229
Vibropile, 21
Viscosity modifier, 204
Vitruvius, 4

Wakefield sheet pile, 21
Waler, 20
Waterfall plot, 145
Water reducer, 204, 205
Wave propagation, 5, 73, 122, 132, 201, 223, 224, 227, 230
WEAP, 76, 77, 78

Yuen Chau Kok, 14