DIN EN 12063:2024-09 (E)

Execution of special geotechnical work - Sheet pile walls, combined pile walls, high modulus walls

Contents

Page

European foreword 5

1 Scope 6

2 Normative references 6

3 Terms and definitions and symbols 8
3.1 Terms and definitions 8

4 Information needed for the execution of the work 20
4.1 General information 20
4.2 Specific information 21
4.3 Execution classes 22

5 Site investigation 22
5.1 Geotechnical investigation 22
5.2 Specific requirements 22
5.3 Driveability of sheet piles 23

6 Materials and products 24
6.1 Steel sheet piles and other steel components 24
6.2 Timber sheet piles 24
6.3 Synthetic sheet piles 24
6.4 Other materials and products 24
6.5 Corrosion protection for steel sheet piles and preservation of timber and synthetic sheet piles 24
6.6 Sealings for interlock connections 24
6.7 Environmental product declaration (EPD) 25

7 Considerations related to design 25
7.1 General 25
7.2 Selection of a pile type 25
7.3 Other structural elements 26
7.4 Sequence of execution 26
7.5 Specific design related considerations 27

8 Execution of sheet pile wall structures 28
8.1 General 28
8.2 Site preparation 28
8.3 Storage and handling of the sheet piles 28
8.4 Welding and cutting of steel elements 29
8.5 Installation 50
8.6 Tolerances regarding plan position and verticality 54
8.7 Corrections of pile position during driving 55
8.8 Installation of anchorages 56
8.9 Walings and struts 56
8.10 Excavation, backfilling, draining and de-watering 57
8.11 Extraction of sheet piles 58
8.12 Rock dowels and anchor bolts 58
8.13 Sealing 60

9 Supervision, testing and monitoring 60
9.1 Supervision 60
9.2 Testing 61
9.3 Monitoring 61

10 Site records 62
10.1 Records in connection with execution 62
10.2 Records at completion of the execution works 62

11 Special requirements 62
11.1 Safety 62
11.2 Impact on the surrounding buildings and installations 63
11.3 Noise hindrance 63
11.4 Permeability of pile walls 63

Annex A (informative) Handling and storage of sheet piles 64

A.1 General 64
A.2 Hoisting 64
A.3 Storage 68
A.4 Special devices 71

Annex B (normative) Welding of sheet piles 76

B.1 General 76
B.2 Butt welding multiple lengths 76
B.3 Welding multiple lengths by splicing with plates 77
B.4 Junction piles (U and Z-form piles) for jointing a part wall element to the main wall 78
B.5 Special corner piles 80
B.6 Straight web junction pile 81
B.7 Box piles 84
B.8 Sealing welds 86

Annex C (informative) Driving of sheet piles 90

C.1 General 90

Annex D (informative) Installation and driving assistance 92

D.1 Driving method for standard sheet pile walls 92
D.2 Driving method for combined sheet pile walls 94
D.3 Driving assistance 95

Annex E (informative) Watertightness of interlock sealings 97

E.1 General considerations 97
E.2 A simple case of assessing the discharge through a steel sheet pile wall 98
E.3 Worked example for the assessment of the total inflow into a building pit 100

Annex F (normative) Timber sheet piles and walings 101

F.1 General 101
F.2 Delivery of timber sheet piles and walings 101
F.3 Quality requirements 101
F.4 Transport and storage 102
F.5 Tolerances 102
F.6 Joints 102
F.7 Corner sheet piles 103
F.8 Execution 104

Annex G (normative) Additional tolerance for tubular piles 110

G.1 General 110

Annex H (informative) Ground movement due to installation 112

H.1 General 112
H.2 Definitions 112
H.3 Ground movements due to installation 112

Annex I (normative) Precast concrete sheet piles and capping beams 119

I.1 General 119
I.2 Delivery of precast sheet piles and capping beams 119
I.3 Quality requirements 119
I.4 Transport and storage 120
I.5 Tolerances 120
I.6 Joints 120
I.7 Corner sheet piles 120
I.8 Execution 121
I.9 Concrete capping beam 122

Annex J (normative) Synthetic sheet piles 124

J.1 General 124
J.2 Delivery of synthetic sheet piles 124
J.3 Quality requirements 125
J.4 Tolerances 125
J.5 Transport and storage 125
J.6 Further processing/machining of the synthetic sheet piles 126
J.7 Installation 127

Annex K (informative) Percussive drilling as installation method for tubular piles 128

K.1 General 128
K.2 Drilling method 129
K.3 Special considerations 130

Bibliography 133