

Special Deep Foundation Compendium Methods and Equipment

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Volume I: Piling and Drilling Rigs (LRB Series)

1st Edition - March 2008

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Brief description

The methods and equipment technology employed in the deep foundation industry have improved rapidly in recent years. The ingenuity of civil engineers, the results of new scientific research and the ongoing and new developments in machine technology have all led to the acceleration of this process.

Applying technologies that have become very complex, and selecting the suitable machinery and equipment, demand ever more specialized knowledge and practical experience. It has become very difficult for users and manufacturers of special deep foundation machinery to maintain an overview of the level of technology in the sector.

Both volumes provide a comprehensive overview of the special deep foundation applications, equipment and processes. They are intended as an aid to planning and implementation, and aim to help practitioners, public authorities, engineering companies and students to broaden and complete their level of knowledge. They are targeted primarily at occupational engineers and applications in the field.

The individual chapters discuss manufacturing techniques and potential applications, along with the associated machine components. The specifics of each method and machine technology are examined in detail.

Since the first volume of the compendium on Special Deep Foundation was published in March 2008, it has become a standard reference book. We are about to finish Volume II which certainly meets the standard set by Volume I.

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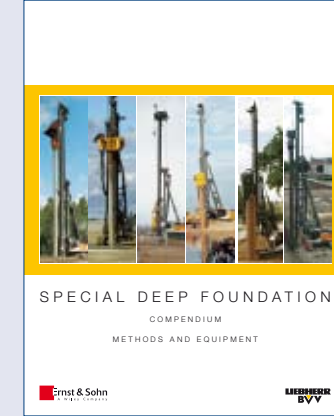
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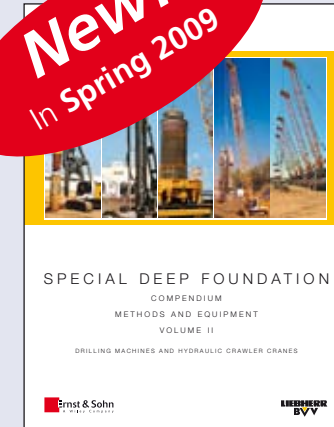
Compendium
Methods and Equipment



Volume I Piling and Drilling Rigs (LRB Series)

published in March 2008

New!
In Spring 2009



Volume II Drilling Machines and Hydraulic Crawler Cranes (LB and HS Series)

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Content Overview

Volume I

General:

- Vibrating
- Double rotary drilling
- Vibro-drilling
- Impact pile driving
- Pressing

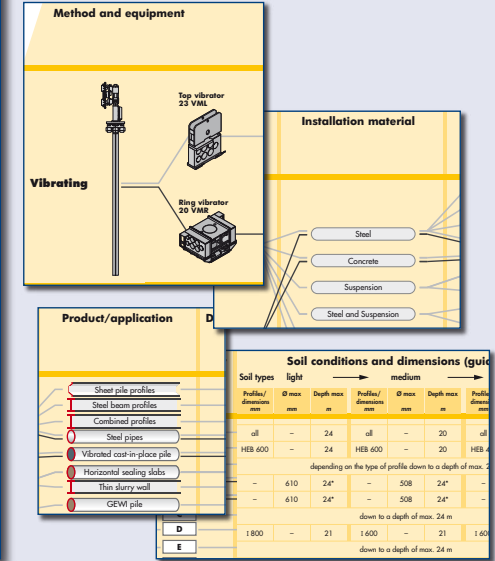
Description of methods:

- Vibrating sheet pile profiles and steel beams
- Vibrated cast-in-place pile · Vibration of steel pipes
- Horizontal sealing slabs
- Thin slurry wall (vibrated beam slurry wall)
- GEWI piles
- RV pile and RI pile
- Deep compaction · Vibration columns · Vibro-replacement · Geotextile pile
- Drilled pile using the double rotary ("front-of-wall") drilled pile
- Augered piles · Partial and full displacement augered piles
- High-pressure injection
- Wet-mix pile/MIP pile · Dry-mix pile · CSV method
- Well drilling
- Predrilling
- Cast-in-place full displacement drilled piles · Steel pipe piles produced with the vibro-drilling method
- Impact driving of steel sheet pile profiles, steel beam profiles and steel pipes
- Impact driving of precast reinforced concrete and prestressed concrete driven piles, wooden piles
- Pressing in sheet pile profiles using the pressing method

Examples of layout & design in Volume I und II

Method and equipment	Installation material	Product/application	Described under	Soil conditions and dimensions (guidelines)						
				Soil types	light	medium	heavy	light	medium	heavy
Vibrating	Steel	Steel sheet piles	A	all	all	all	all	all	all	all
		Steel beam profiles	B	HEB 600	HEB 600	HEB 600	HEB 600	HEB 600	HEB 600	HEB 600
		Combined profiles	C	depending on the type of profile down to a depth of max. 24 m						
		Steel pipes	D	all	410 24"	508 24"	508 24"	508 18"	508 18"	508 18"
		Vibrated cast-in-place pile	E	down to a depth of max. 24 m						
		Horizontal sealing slabs	F	all	1.800	1.600	1.600	1.600	1.600	1.600
		Thin slurry wall	G	depending on the vibration method down to a depth of max. 24 m						
		GEWI pile	H	depending on the type of profile down to a depth of max. 24 m						
		RV pile	I	depending on the type of profile down to a depth of max. 24 m						
		RI pile	J	depending on the type of profile down to a depth of max. 24 m						
Double rotary drilling	Concrete	Drilled pile	K	750 12"	610 17"	610 17"	610 17"	610 17"	610 17"	
		Augered pile	L	750 12"	610 17"	610 17"	610 17"	610 17"	610 17"	
		Cast-in-place full displacement drilled pile	M	750 18"	610 20"	610 20"	610 20"	610 20"	610 20"	
		Steel pipe piles produced with the vibro-drilling method	N	750 18"	610 20"	610 20"	610 20"	610 20"	610 20"	
		Impact driving of steel sheet pile profiles, steel beam profiles and steel pipes	O	750 18"	610 20"	610 20"	610 20"	610 20"	610 20"	
		Impact driving of precast reinforced concrete and prestressed concrete driven piles, wooden piles	P	750 18"	610 20"	610 20"	610 20"	610 20"	610 20"	
		Pressing in sheet pile profiles using the pressing method	Q	750 18"	610 20"	610 20"	610 20"	610 20"	610 20"	
		High-pressure injection	R	750 18"	610 20"	610 20"	610 20"	610 20"	610 20"	
		Deep compaction	S	750 18"	610 20"	610 20"	610 20"	610 20"	610 20"	
		Well drilling	T	750 18"	610 20"	610 20"	610 20"	610 20"	610 20"	
Impact pile driving	Steel	Steel sheet piles	U	all	all	all	all	all	all	
		Steel beam profiles	V	HEB 600	HEB 600	HEB 600	HEB 600	HEB 600	HEB 600	
		Combined profiles	W	depending on the type of profile down to a depth of max. 24 m						
		Steel pipes	X	all	410 24"	508 24"	508 24"	508 18"	508 18"	
		Vibrated cast-in-place pile	Y	down to a depth of max. 24 m						
		Horizontal sealing slabs	Z	all	1.800	1.600	1.600	1.600	1.600	
		Thin slurry wall	AA	depending on the type of profile down to a depth of max. 24 m						
		GEWI pile	AB	depending on the type of profile down to a depth of max. 24 m						
		RV pile	AC	depending on the type of profile down to a depth of max. 24 m						
		RI pile	AD	depending on the type of profile down to a depth of max. 24 m						
Pressing	Steel	Steel sheet piles	AE	2 and 3 profiles	15	15	15	15	15	
		Combined profiles	AF	depending on the type of profile down to a depth of max. 15 m						

It is easy to find your way around using the pull-out pages with a general overview.



Volume II

General:

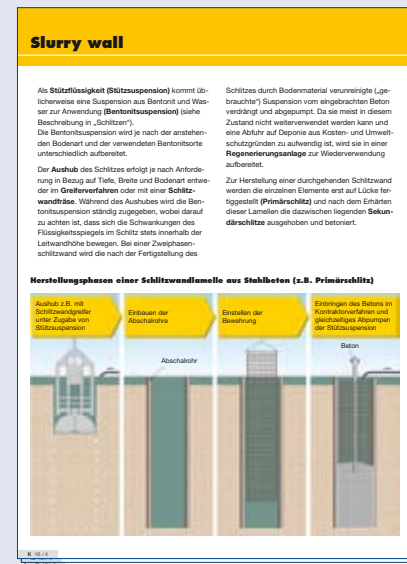
- Kelly drilling
- Double rotary drilling
- Vibrating
- Single rotary drilling
- Grab excavation
- Impact pile driving
- Slurry wall

Description of methods:

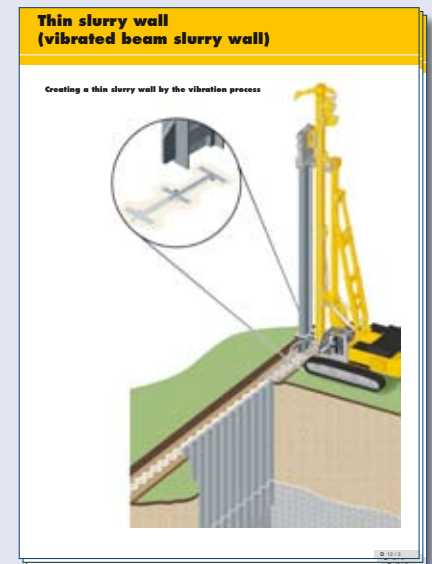
- Drilled pile
- Augered piles · Partial and full displacement augered piles
- Steel beam profiles and steel pipes in bore holes
- Sand- and gravel piles, Soil exchange
- Predrilling
- Well drilling
- GEWI piles
- High-pressure injection
- Wet-mix pile/MIP pile
- Slurry wall
- Impact driving of steel profiles
- Deep compaction
- Impact driving of steel sheet pile profiles, steel beam profiles and steel pipes
- Impact driving of precast reinforced concrete and prestressed concrete driven piles
- Dynamic soil compaction

Term / Product / Application	See	Operation	Described under
Drilled beam	Drilled pile	Drilling	H
Drilled pile	Drilling	Drilling	H
Drilled wall	Well drilling	Drilling	M
Drilling drive	Drilling	Drilling	H
Drilling rig	Drilling	Drilling	H
Drive cap	Impact driving	Impact driving	P
Drive pipe	Impact driving	Impact driving	P
Drive steel pile	Steel beam profiles, steel pipes	Impact driving	P, G
Dry-mix pile	Drilling	Drilling	L
Drilled cast-in-place pile	Steel pipes	Impact driving	P
Drilled driven pile	Drilling	Impact driving	P
Drilled steel pile	Steel pipes	Impact driving	P
Drilled pile	Steel pipes	Impact driving	P
E Drucker	Vibrating	Vibrating	P
External impacting process	Steel pipes	Impact driving	P
F Front grouting	Sheet pile wall profile	Welding, impact driving	A, F
FGW front-of-wall drilling	FGW (front-of-wall) drilled pile	Drilling	H
FGW front-of-wall pile	Drilled pile	Drilling	H
Front-fall hammer	Hammer	Impact driving	H
Frequency	Vibrating	Vibrating	G
Full displacement cast-in-place drilled pile	Full displacement cast-in-place pile	Vibro-drilling	D
Full displacement drilled pile	Displacement pile	Vibrating, drilling	D, L
G Geotextile hose	Geotextile stacking, geotextile pile	Vibrating	G
Geotextile pile	Geotextile pile	Vibrating	G
Geotextile sand pile	Geotextile pile	Vibrating	G
Geotextile stacking	Geotextile hose, geotextile pile	Vibrating, drilling	G
GEWI	Gravel pile, vibro-replacement columns	Vibrating	G
Gravel column	Gravel pile, vibro-replacement columns	Vibrating	G
Gravel driven pile	Vibration columns	Vibrating	G
Gravel pile with tactile skin	Geotextile pile	Vibrating	G
Groundwater well	Well drilling	Drilling	M
Grout	Thin slurry wall	Welding	D
H Hammer	Impact driving	Impact driving	H
Hammer pile	Impact driving	Impact driving	H
High pressure injection	Drilling	Impact driving	K
High pressure vibrator	Vibrating	Vibrating	K
High pressure soil consolidation	High-pressure injection	Drilling	K
Hammer	Impact driving	Impact driving	H
Hollow stone	Drilling	Drilling	I
Hollow stone auger	Drilling	Drilling	I
Horizontal sealing slab	Drilling	Drilling	C
HP pile	Steel beam profiles	Welding, impact driving	A, F
Hydraulic front-fall hammer	Hammer	Impact driving	H
Hydraulic hammer	Hammer	Impact driving	H
HZ pile	Steel beam profiles	Welding, impact driving	A, F
HZ wall	Combined wall	Welding, impact driving	A, F

The glossary lists definitions, cross-references and terms.



Illustrations help visualize complex applications and technologies.



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