

Deep Linear shoring



Deep linear shoring, on which two shoring units are connected together, combines the advantages of the linear shoring system to form a high-performance functional principle. In the first step, one linear shoring module – consisting of linear shoring beams, panels and boogie cars – is installed. Then a second module is inserted in the already occupied trench and adapted as an inner module in a close fit inside the outer module. Using this method, the inner shoring components take up the soil pressure as they pass through the outer module. If lowered further, the loads are taken up again by the first module. In their installed state, the two shoring modules, the components of which are of the same length, complement each other in taking up the soil pressure totally independently.

Deep linear shoring was specially developed for applications at special depths, e.g. for the construction of sewers, manholes, or launch pits. By combining two linear shoring beams, and depending on the nature of the ground, depths of well over 10 m can be achieved, while the technical advantages of the linear shoring system are fully exploited.

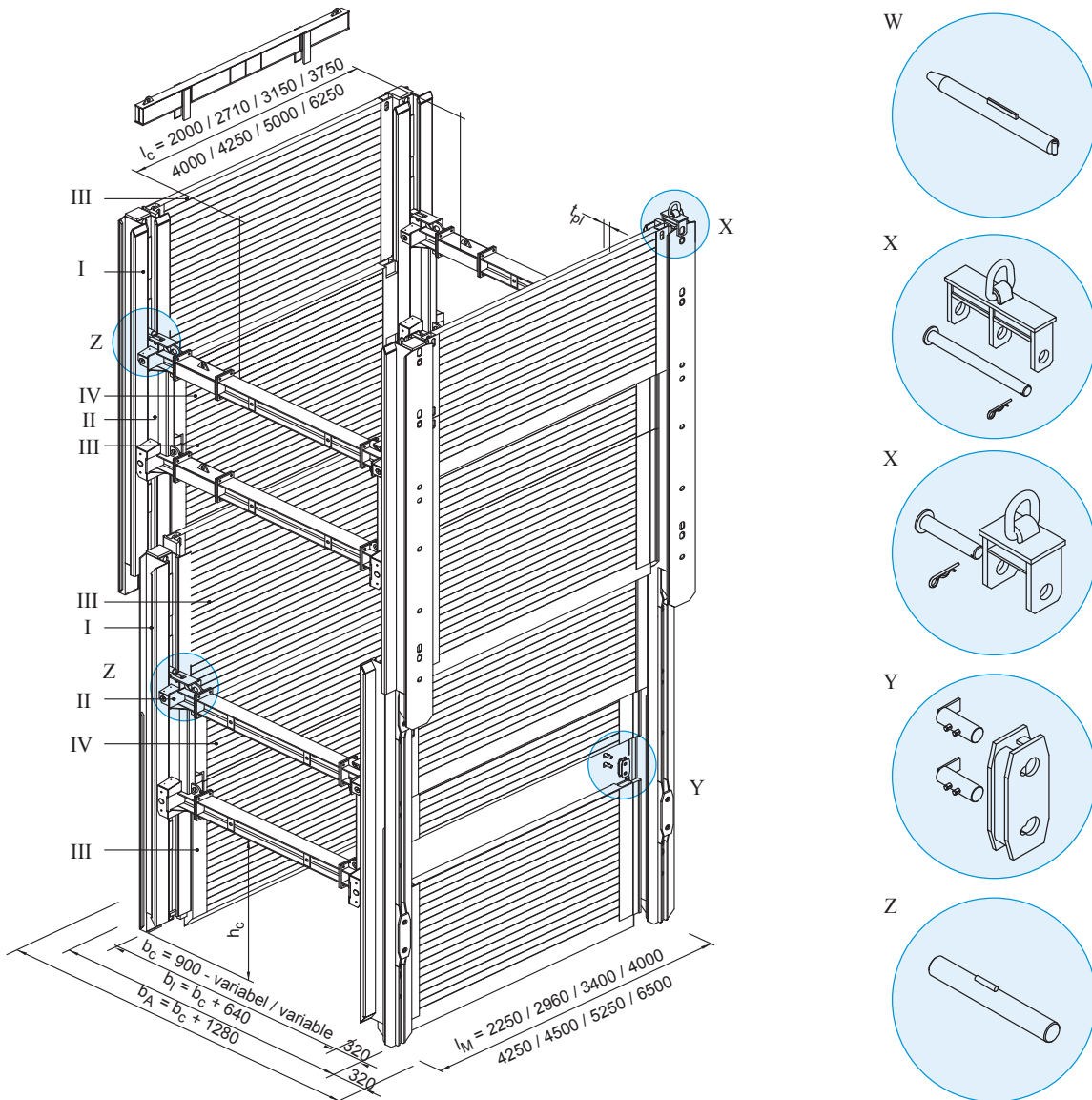
Basic data

Module length	2,25 m - 6,50 m
Length slide rail	variable
Panel height	1,32 m / 2,32 m
Pipe culvert height	variable
Trench width	variable, see page 32-33

Advantages

- Depths far in excess of 10 meters possible
- Between 7 and 10 meters' depth viable, even in "sticky" soils

Deep Linear shoring



(All dimensions in mm)

From an intermediate piece length combination of 1.10 m, it is mandatory to mount the shoring horizontally.

I	Linear shoring support	lc	Pipe culvert length	t _{pl}	Thickness
II	Linear shoring boogie car	b _A	Shoring / trench width (outer rail)	W	Pin
III	Base panel	b _I	Shoring / trench width (inner rail)	X	Pull adapter
IV	Top panel	b _c	Inner width	Y	Connector
IM	Module length	h _c	Pipe culvert height	Z	Pin

Linear shoring support -inside-

Art. No.	Short description	l [m]	G [kg]
820 952	Linear shoring support -inside-	5,13	1.189,0
820 948	Linear shoring support -inside-	6,13	1.409,0
820 954	Linear shoring support -inside-	7,13	1.629,0

Linear shoring support -outside-

Art. No.	Short description	l [m]	G [kg]
820 951	Linear shoring support -outside-	5,13	1.050,0
820 947	Linear shoring support -outside-	6,13	1.260,0
820 953	Linear shoring support -outside-	7,13	1.470,0

Base panels -inside- (height 2.32 m)

Art. No.	l [m]	l _M [m]	t _{pl} [m]	l _c [m]	G / VP [kg]	A [m ²]	eh [kN/m ²]
821 120	1,89	2,25	0,11	2,00	519,0	4,38	176,00
821 160	2,60	2,96	0,11	2,71	650,0	6,03	90,00
821 250	3,04	3,40	0,11	3,15	733,0	7,05	65,50
821 610	3,64	4,00	0,11	3,75	845,0	8,44	45,20
821 850	3,89	4,25	0,11	4,00	968,0	9,02	39,40
821 855	4,14	4,50	0,15	4,25	1.300,0	9,58	81,00
821 860	4,89	5,25	0,15	5,00	1.505,0	11,34	58,10
821 861	6,13	6,50	0,15	6,25	1.880,0	14,22	36,60

Top panels -inside- (height 1.32 m)

Art. No.	l [m]	l _M [m]	t _{pl} [m]	l _c [m]	G / VP [kg]	A [m ²]	eh [kN/m ²]
822 060	1,89	2,25	0,11	2,00	356,0	2,49	176,00
821 180	2,60	2,96	0,11	2,71	450,0	3,43	90,00
822 120	3,04	3,40	0,11	3,15	519,0	4,01	65,50
822 620	3,64	4,00	0,11	3,75	620,0	4,80	45,20
822 760	3,89	4,25	0,11	4,00	649,0	5,13	39,40
822 783	4,14	4,50	0,15	4,25	873,0	5,45	81,00
822 800	4,89	5,25	0,15	5,00	1.098,0	6,45	58,10
822 801	6,13	6,50	0,15	6,25	1.370,0	8,09	36,60

Top panels -inside- (height 2.30 m)

Art. No.	l [m]	l _M [m]	t _{pl} [m]	l _c [m]	G / VP [kg]	A [m ²]	eh [kN/m ²]
822 065	1,89	2,25	0,11	2,00	532,0	4,35	176,00
822 155	2,60	2,96	0,11	2,71	660,0	5,98	90,00
822 180	3,04	3,40	0,11	3,15	742,0	6,99	65,50
822 680	3,64	4,00	0,11	3,75	852,0	8,37	45,20
822 780	3,89	4,25	0,11	4,00	980,0	8,95	39,40
822 785	4,14	4,50	0,15	4,25	1.409,0	9,50	81,00

Base panel -outside- (Height 2,32 m)

Art. No.	l [m]	l _M [m]	t _{pl} [m]	l _c [m]	G / VP [kg]	A [m ²]	eh [kN/m ²]
821 150	2,00	2,25	0,11	2,00	541,0	4,64	149,00
821 170	2,71	2,96	0,11	2,71	672,0	6,29	80,00
821 310	3,15	3,40	0,11	3,15	755,0	7,31	59,00
821 770	3,75	4,00	0,11	3,75	865,0	8,70	41,40
821 910	4,00	4,25	0,11	4,00	911,0	9,28	36,60
821 913	4,25	4,50	0,15	4,25	1.313,0	9,86	75,00
821 912	5,00	5,25	0,15	5,00	1.545,0	11,60	54,50
821 916	6,25	6,50	0,15	6,25	1.910,0	14,50	34,70

Top panel -outside- (Height 1,32 m)

Art. No.	l [m]	l _M [m]	t _{pj} [m]	l _c [m]	G / VP [kg]	A [m ²]	eh [kN/m ²]
822 075	2,00	2,25	0,11	2,00	368,0	2,64	149,00
821 190	2,71	2,96	0,11	2,71	453,0	3,58	80,00
822 310	3,15	3,40	0,11	3,15	511,0	4,16	59,00
822 710	3,75	4,00	0,11	3,75	611,0	4,95	41,40
822 810	4,00	4,25	0,11	4,00	647,0	5,28	36,30
822 813	4,25	4,50	0,15	4,25	900,0	5,61	75,00
822 815	5,00	5,25	0,15	5,00	1.137,0	6,60	54,50
822 830	6,25	6,50	0,15	6,25	1.400,0	8,25	34,70

The details of length of pipe opening l_c refer to the rectangular boogie car.

Linear shoring boogie car

Art. No.	Short description	l [m]	G [kg]
832 215	Linear shoring rectangular boogie car	2,20	490,0
832 224	Linear shoring boogie car (Deep linear shoring)	2,20	505,0

Extension bars for deep Linear shoring boogie car

Art. No.	Short description	l [m]	G [kg]
830 010	Extension bar HEB 220	0,275	50,0
830 020	Extension bar HEB 220	0,550	70,0
830 030	Extension bar HEB 220	1,100	110,0
830 075	Extension bar HEB 220	1,650	152,0
830 125	Extension bar HEB 220	2,200	192,0

Extension bar for rectangular boogie car, Deep Linear shoring; upper shoring part

Art. No.	Short description	l [m]	G [kg]
830 310	Extension bar HEB 220	0,640	75,0

Trench widths

Length of extension bar [m]	b _c [m]	b _l [m]	b _A [m]
without extension bar	0,900	1,540	2,180
0,275	1,175	1,815	2,455
0,550	1,450	2,090	2,730
1,100	2,000	2,640	3,280
1,650	2,550	3,190	3,830
2,200	3,100	3,740	4,380

Other trench widths possible by combining different extension bar lengths.
Larger trench widths available on request.

Accessories / Spares

Art. No.	Short description	l [m]	d [m]	G [kg]
842 758	Adapter for DKU piling frame, corner shoring, h = 0.50 m KDIV			47,0
842 752	Adapter for DKU piling frame, corner shoring, h = 0.50 m KDVI			55,0
842 753	Adapter for DKU piling frame, corner shoring, h = 1.00 m KDVI			94,0
842 759	Adapter for DKU piling frame, h = 0.50 m KDIV (single slide rail, e+s)			40,0

Accessories / Spares (contd.)

Art. No.	Short description	l [m]	d [m]	G [kg]
842 749	Adapter for DKU piling frame, h = 0.50 m KDVI (single slide rail, e+s)			45,0
842 751	Adapter for DKU piling frame, h = 1.00 m KDVI (single slide rail)			75,5
834 080	Adapter for EGS / DGS (LV)			105,0
862 200	Connector			5,5
834 100	Cover panel for in-situ concrete DG -base panel-	0,750		7,9
834 110	Cover plate for in-situ concrete DG -top plate-	1,000		9,9
842 099	DKU piling frame guide frame	2,27		105,0
842 100	DKU piling frame guide frame	3,81		175,0
IA 0150F	Nut M 24			0,1
IA 0210F	Nut M 36			0,4
862 100	Pin (for connector)	0,110	0,035	1,0
832 246	Pin for boogie car (deep Linear shoring)	0,300	0,05	4,6
832 230	Pin for Pressure Plate Rectangular Boogie Car	0,150	0,035	1,4
832 245	Pin, Linear shoring (double slide rail)	0,300	0,04	3,2
850 720	Pin, Linear shoring (single slide rail)	0,150	0,05	2,5
861 075	Pressure beam (boxes, slide rail)	4,60		425,0
861 085	Pressure beam (boxes, slide rail)	5,80		525,0
861 074	Pressure beam (Medium, Magnum shoring, KS 100, GLS)	2,35		236,0
861 070	Pressure beam (Medium, Magnum shoring, KS 100, GLS)	2,80		271,0
861 071	Pressure beam (Medium, Magnum shoring, KS 100, GLS)	3,40		318,0
861 076	Pressure beam (Medium, Magnum shoring, KS 100, GLS)	1,60		176,0
834 015	Pressure plate for boogie car			12,4
834 060	Pull adapter double slide rail			43,6
834 057	Pull adapter single slide rail			33,0
IB 0470F	Screw M 24 x 80			0,4
IB 0614F	Screw M 36 x 80			1,0
HE 0050 F	Spring cotter 6 mm		0,006	0,03
HE 0060F	Spring cotter 8 mm		0,008	0,1
336 960	Support bracket for DKU piling frame element			40,0
821 100	Suspension chain KL-13-8	5,000		25,7
842 704	Waling for DKU piling frame, module length 2.84 m (single slide rail, e+s)	2,60		300,0
842 705	Waling for DKU piling frame, module length 3.88 m (single slide rail, e+s)	3,64		402,0
842 710	Waling for DKU piling frame, module length 4.13 m (single slide rail, e+s)	3,89		420,0
842 711	Waling for DKU piling frame, module length 4.38 m (single slide rail, e+s)	4,13		445,0

l	Length	b _l	Shoring / trench width (inner rail)	G	Weight
b _A	Shoring / trench width (outer rail)	b _c	Inner width		