



PALPILE

STEEL PILING PRODUCTS

STEEL SHEET PILING - STEEL TUBES AND PIPES - BRACING
MICRO PILING - CASING - ANCHORING - ENGINEERING



PALPILE

STEEL PILING PRODUCTS

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WHO WE ARE

PalPile is a globally operating supplier of steel foundation products and off-shore steel constructions, based in the Netherlands. We specialize in the manufacturing, processing, stockholding and distribution of steel piling products related to the maritime and civil engineering industry.

Our key products are hot rolled steel sheet piles, cold formed steel sheet piles, steel tubes and pipes, micro piling, combined walls, strutting & bracing and (drilled) anchoring. We deliver steel piling products from stock and new production through our global network.

WHAT WE CAN DO

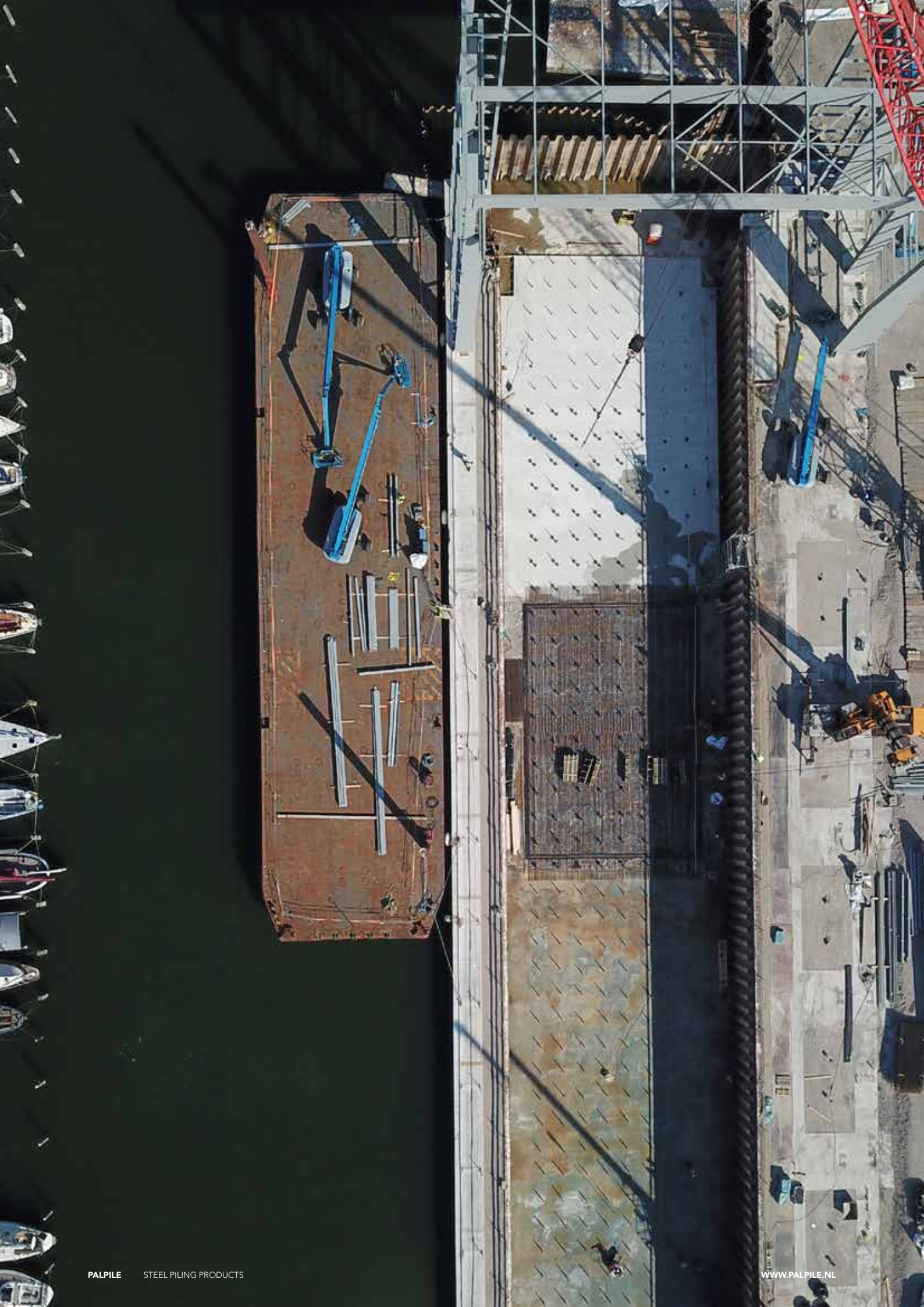
With a stock of over 50.000 tons of steel sheet piling and steel pipes we can supply with very short delivery times. We take care of transportation to your jobsite or warehouse by truck, rail or ship, using only the best logistical partners.

We can provide all required processing on sheet piling: pairing, welding or crimping, cutting, shot blasting/coating and water tightening of the interlocks.

For temporary sheet piling projects, we can supply used piles and/or offer buy-back after completion of your project.

With our wide range of steel pipes - 1st choice welded with CE certification, surplus/overproduction, and thick-walled seamless pipes - we hold a prominent position as a supplier for dealers, local stockholders and end uses.

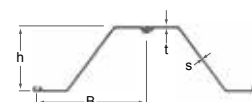
For major projects PalPile can offer value engineering. We can propose cost effective alternatives for sheet pile walls, cofferdams and combined walls in both the tender stage and the execution phase.



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Z-PILING - ESZ

Section	Elastic section modulus W_y cm ³ /m	Width B mm	Weight		Height h mm	Flange thickness t mm	Web thickness s mm	Moment of inertia I_y cm ⁴ /m	Coating area * A m ² /m
			Single pile kg/m	Wall kg/m ²					
ESZ 17-630	1.675	630	69,8	110,8	374	8,5	8,5	31.300	1,68
ESZ 17-700	1.735	700	74,0	105,7	420	8,5	8,5	36.360	1,84
ESZ 18-630	1.805	630	76,0	120,7	375	9,5	9,5	33.860	1,68
ESZ 18-700	1.805	700	77,4	110,6	420	9,0	9,0	37.890	1,84
ESZ 19-630	1.935	630	82,2	130,5	376	10,5	10,5	36.410	1,68
ESZ 19-700	1.875	700	80,8	115,4	421	9,5	9,5	39.420	1,84
ESZ 19-700 10/10	1.945	700	84,2	120,3	421	10,0	10,0	40.940	1,84
ESZ 20-630	2.005	630	85,4	135,6	377	11,0	11,0	37.730	1,68
ESZ 20-700	2.015	700	87,6	125,2	422	10,5	10,5	42.470	1,84
ESZ 23-700	2.324	700	86,6	123,6	458	11,0	9,0	53.219	1,93
ESZ 24-700	2.435	700	89,5	127,9	459	12,0	9,0	55.870	1,93
ESZ 25-700	2.520	700	93,1	133,0	460	12,5	9,5	57.840	1,93
ESZ 26-700	2.600	700	96,7	138,1	460	13,0	10,0	59.810	1,93
ESZ 27-700	2.685	700	100,3	143,3	461	13,5	10,5	61.780	1,93
ESZ 28-700	2.765	700	103,9	148,4	461	14,0	11,0	63.750	1,93
ESZ 29-700	2.930	700	111,1	158,8	462	15,0	12,0	67.740	1,92
ESZ 36-700	3.580	700	116,2	166,1	509	14,0	11,5	91.130	2,11
ESZ 37-700	3.690	700	120,2	171,8	510	14,5	12,0	94.000	2,11
ESZ 38-700	3.800	700	124,2	177,4	510	15,0	12,5	96.860	2,11
ESZ 39-700	3.905	700	128,2	183,1	511	15,5	13,0	99.720	2,11
ESZ 40-700	4.015	700	132,2	188,8	511	16,0	13,5	102.590	2,11



*Coating single pile two sided without the inside of the interlocks

Technical delivery conditions
EN10248-1

Tolerances
EN10248-2

Steel grades
S240GP, S270GP, S355GP, S390GP, S430GP and S460GP in accordance with EN10248-1

Certificates according to EN10204/3.1

Delivered length
24,00 m maximum. Longer lengths upon request

Packing
Free sections or bundles max. 5.000 kg.

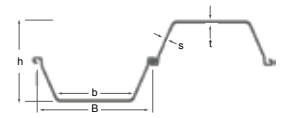
Service
Pairing and joining by crimping or welding upon request.
Handling holes upon request; mill standard diameter 40 mm at 75 mm, 150 mm or 300 mm from sheet pile end.

Z-PILING - ZZ

Section	Elastic section modulus W_y cm ³ /m	Width B mm	Weight		Height h mm	Flange thickness t mm	Web thickness s mm	Moment of inertia I_y cm ⁴ /m	Coating area * A m ² /m
			Single pile kg/m	Wall kg/m ²					
ZZ 12-770	1.252	770	72,8	94,5	344	8,6	8,5	21.496	1,96
ZZ 13-700	1.308	700	74,2	105,9	315	9,6	9,5	20.611	1,82
ZZ 13-770	1.304	770	76,2	99,0	344	9,1	9,0	22.433	1,96
ZZ 14-700	1.408	700	80,5	114,9	316	10,6	10,5	22.262	1,82
ZZ 14-770	1.357	770	79,6	103,4	345	9,6	9,5	23.370	1,96
ZZ 17-700	1.735	700	73,3	104,7	420	8,5	8,4	36.425	1,97
ZZ 18-700	1.807	700	76,7	109,6	421	9,1	9,0	38.001	1,97
ZZ 19-700	1.880	700	80,2	114,6	421	9,6	9,5	39.578	1,97
ZZ 20-700	1.953	700	83,7	119,5	422	10,1	10,0	41.155	1,97
ZZ 24-700	2.437	700	95,8	136,9	459	11,3	11,2	55.949	2,05
ZZ 26-700	2.601	700	103,0	147,1	460	12,3	12,2	59.843	2,05
ZZ 27-700	2.676	700	106,4	147,1	461	12,8	12,7	61.641	2,05
ZZ 28-700	2.764	700	110,1	157,3	461	13,3	13,2	63.740	2,05
ZZ 36-700	3.596	700	118,7	169,6	499	15,1	11,2	89.753	2,18
ZZ 38-700	3.798	700	126,5	180,7	500	16,1	12,2	94.984	2,18
ZZ 40-700	3.999	700	134,3	191,8	501	17,1	13,2	100.219	2,18
ZZ 42-700	4.228	700	143,0	204,2	499	18,1	14,0	105.543	2,17
ZZ 44-700	4.436	700	150,7	215,3	500	19,1	15,0	110.942	2,17
ZZ 46-700	4.635	700	158,5	226,5	501	20,1	16,0	116.159	2,17
ZZ 48-580	4.801	580	139,9	241,1	482	19,2	15,1	115.712	2,01
ZZ 48-700	4.788	700	159,3	227,6	503	22,1	15,0	120.467	2,17
ZZ 50-700	4.973	700	166,7	238,2	504	23,1	16,0	125.358	2,17
ZZ 52-700	5.162	700	174,3	249,0	505	24,1	17,0	130.403	2,17

U-PILING - VL

Section	Elastic section modulus W_y cm ³ /m	Width B mm	Weight		Height h mm	Back thickness t mm	Web thickness s mm	Back width b mm	Moment of inertia I_y cm ⁴ /m	Coating area * A m ² /m
			Single pile kg/m	Wall kg/m ²						
VL 601	744	600	46,3	77,2	310	7,5	6,4	250,4	11.530	1,60
VL 601 FP	745	600	47,4	79,0	310	7,2	7,0	248,0	11.547	1,60
VL 601 K	775	600	48,5	80,8	310	7,8	6,8	249,3	12.019	1,60
VL 602 A	806	600	51,3	85,5	310	8,0	7,3	248,9	12.499	1,60
VL 602	842	600	53,4	89,0	310	8,4	7,6	248,9	13.046	1,60
VL 602 K	877	600	55,4	92,3	310	8,8	7,9	248,9	13.590	1,60
VL 602 + 0,5	894	600	56,0	93,3	311	8,9	8,1	248,9	13.905	1,60
VL 603 A	1.138	600	61,5	102,5	320	9,0	8,0	371,2	18.205	1,72
VL 603 AN	1.161	600	62,4	104,0	320	9,2	8,1	371,2	18.601	1,73
VL 603	1.200	600	64,2	107,0	320	9,6	8,2	371,6	19.199	1,73
VL 603 KN	1.230	600	66,9	111,5	320	9,8	8,6	371,1	19.682	1,73
VL 603 K	1.241	600	67,8	113,0	320	9,8	9,0	370,2	19.853	1,73
VL 603 N	1.273	600	63,4	105,7	381	9,8	7,8	268,9	24.269	1,73
VL 603 Z	1.300	600	72,1	120,2	320	10,0	10,0	361,3	20.930	1,73
VL 603 Z11	1.404	600	78,6	131,0	322	11,0	11,0	366,9	22.470	1,73
VL 604 A	1.564	600	71,0	118,3	390	9,6	8,8	359,9	30.495	1,85
VL 604	1.618	600	73,1	121,8	390	10,0	9,0	359,7	31.548	1,85
VL 604 K	1.672	600	75,2	125,3	390	10,4	9,2	358,1	32.600	1,85
VL 604 Z	1.748	600	79,5	132,5	390	10,8	10,0	347,0	34.087	1,85
VL 605 A	1.821	600	76,5	127,5	420	10,7	9,0	347,0	38.243	1,89
VL 605 - 0,6	1.954	600	80,2	133,6	421	11,7	9,2	391,0	41.127	1,89
VL 605 N	2.019	600	82,1	136,9	420	12,3	9,2	348,0	42.664	1,89
VL 605 + 0,5	2.111	600	85,2	142,0	421	12,8	9,7	348,0	44.435	1,89
VL 605 KN	2.117	600	85,6	142,7	424	12,6	10,0	346,5	44.886	1,88
VL 606 A	2.205	600	85,4	142,3	430	13,4	9,0	337,7	47.402	1,90
VL 606 AN	2.355	600	89,8	149,6	432	14,4	9,4	337,7	50.878	1,89
VL 606 N	2.506	600	94,1	156,8	434	15,4	9,8	337,7	54.389	1,89
VL 606 KN	2.774	600	102,3	170,5	433	17,5	10,3	339,1	60.112	1,89
VL 628-1,5	2.607	600	95,2	158,6	452	14,8	9,5	308,8	58.938	1,88
VL 628 AN	2.701	600	97,9	163,1	453	15,4	9,8	308,8	61.219	1,88
VL 628 A	2.809	600	100,8	168,0	455	16,1	10,0	308,8	63.856	1,88
VL 628	2.841	600	101,8	169,6	455	16,3	10,1	308,8	64.640	1,88
VL 628 K	2.903	600	103,5	172,5	456	16,7	10,3	308,8	66.165	1,88
VL 607 A	3.006	600	106,2	177,1	454	17,7	10,0	286,9	68.232	1,95
VL 607 N	3.211	600	112,4	187,3	457	19,0	10,6	286,9	73.300	1,95
VL 607 K	3.365	600	116,8	194,7	459	20,0	11,0	286,9	77.153	1,95
VL 504 A	1.423	500	63,5	127,0	340	11,2	8,7	264,1	24.198	1,56
VL 504	1.504	500	66,6	133,2	340	12,0	9,0	264,2	25.575	1,56
VL 504 K	1.602	500	70,3	140,6	340	13,0	9,3	264,5	27.233	1,56
VL 507 A	2.800	500	92,3	184,6	437	18,4	10,5	255,6	61.185	1,73
Illn	1.600	400	62,2	155,5	290	13,0	9,0	249,3	23.206	1,38



*Coating single pile two sided without the inside of the interlocks

Technical delivery conditions
EN10248-1

Tolerances
EN10248-2

Steel grades
S240GP, S270GP, S355GP, S390GP and S430GP in accordance with EN10248-1.

Certificates according to EN10204/3.1

Delivered length
24,00 m maximum. Longer lengths upon request.

Packing
Free sections or bundles max. 5.000 kg.

Service
Pairing and joining by crimping or welding upon request.
Handling holes upon request; mill standard diameter 40 mm at 75 mm, 150 mm or 300 mm from sheet pile end.

HOT ROLLED SHEET PILES

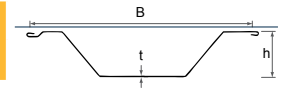
COLD FORMED ALTERNATIVES

WEIGHT ADVANTAGES

VL 601 W_y 744 cm ³ /m' I_y 11.530 cm ⁴ /m' GU7S W_y 740 cm ³ /m' I_y 11.540 cm ⁴ /m'	5 mm	IBO - 781-5	W_y 781 cm ³ /m' I_y 14.118 cm ⁴ /m'	VL 601 - 30% GU7S - 30%
	6 mm	IBO - 788-6	W_y 788 cm ³ /m' I_y 13.009 cm ⁴ /m'	VL 601 - 19% GU7S - 19%
	7 mm	IBO - 797-7	W_y 797 cm ³ /m' I_y 11.192 cm ⁴ /m'	VL 601 - 8% GU7S - 8%
VL 602 W_y 842 cm ³ /m' I_y 13.046 cm ⁴ /m' GU8S W_y 820 cm ³ /m' I_y 12.800 cm ⁴ /m'	5 mm	IBO - 867-5	W_y 867 cm ³ /m' I_y 17.804 cm ⁴ /m'	VL 602 - 40% GU8S - 37%
	6 mm	IBO - 835-6	W_y 835 cm ³ /m' I_y 13.721 cm ⁴ /m'	VL 602 - 29% GU8S - 25%
	7 mm	IBO - 846-7	W_y 846 cm ³ /m' I_y 12.240 cm ⁴ /m'	VL 602 - 19% GU8S - 15%
VL 603 W_y 1.200 cm ³ /m' I_y 19.199 cm ⁴ /m' AZ 12-770 W_y 1.245 cm ³ /m' I_y 21.430 cm ⁴ /m'	6 mm	IBO - 1245-6	W_y 1.245 cm ³ /m' I_y 26.474 cm ⁴ /m'	VL 603 - 34% AZ 12-770 - 25%
	7 mm	IBO - 1319-7	W_y 1.319 cm ³ /m' I_y 26.413 cm ⁴ /m'	VL 603 - 26% AZ 12-770 - 15%
	8 mm	IBO - 1217-8	W_y 1.217 cm ³ /m' I_y 19.814 cm ⁴ /m'	VL 603 - 20% AZ 12-770 - 9%
VL 604 W_y 1.618 cm ³ /m' I_y 31.540 cm ⁴ /m'	8 mm	IBO - 1607-8	W_y 1.607 cm ³ /m' I_y 34.315 cm ⁴ /m'	VL 604 - 23%
	9 mm	IBO - 1757-9	W_y 1.757 cm ³ /m' I_y 37.667 cm ⁴ /m'	VL 604 - 13%

IBO

Section	Elastic section modulus W_y cm ³ /m'	Width B mm	Weight		Height h mm	Thickness t mm	Moment of inertia I_y cm ⁴ /m'	Coating area * A m ² /m'
			Single pile kg/m	Wall kg/m ²				
IBO 264-4	264	1.017	40	39,3	160	4	2.128	2,26
IBO 434-4	434	1.661	64	38,6	250	4	5.649	2,29
IBO 619-4	619	1.540	64	41,6	350	4	10.926	2,47
IBO 448-5	448	1.513	72	47,6	205	5	4.608	2,25
IBO 462-5	462	1.504	72	47,9	215	5	5.044	2,26
IBO 518-5	518	1.651	80	48,2	255	5	7.035	2,3
IBO 619-5	619	1.643	80	48,7	300	5	9.747	2,31
IBO 708-5	708	1.558	80	51,3	315	5	11.413	2,44
IBO 720-5	720	1.365	72	52,7	325	5	11.724	2,49
IBO 781-5	781	1.330	72	54,1	360	5	14.118	2,56
IBO 867-5	867	1.492	80	53,6	410	5	17.804	2,55
IBO 541-6	541	1.510	86,4	57,2	220	6	6.025	2,25
IBO 616-6	616	1.477	86,4	58,5	255	6	7.897	2,3
IBO 689-6	689	1.443	86,4	59,9	275	6	9.538	2,37
IBO 788-6	788	1.380	86,4	62,6	320	6	13.009	2,46
IBO 790-6	790	1.550	96	61,9	300	6	12.462	2,45
IBO 835-6	835	1.363	86,4	63,4	325	6	13.721	2,49
IBO 973-6	973	1.494	96	64,3	360	6	17.715	2,54
IBO 1052-6	1.052	1.471	96	65,3	410	6	21.609	2,58
IBO 1149-6	1.149	1.380	96	69,6	425	6	25.317	2,75
IBO 1245-6	1.245	1.354	96	70,9	425	6	26.474	2,81
IBO 733-7	733	1.625	112	68,9	260	7	9.737	2,34
IBO 764-7	764	1.415	100,8	71,2	259	7	9.689	2,4
IBO 797-7	797	1.425	100,8	70,7	280	7	11.192	2,39
IBO 833-7	833	1.600	112	70	280	7	11.976	2,38
IBO 846-7	846	1.403	100,8	71,8	290	7	12.290	2,42
IBO 935-7	935	1.500	112	74,7	300	7	14.733	2,53
IBO 1319-7	1.319	1.400	112	80	400	7	26.413	2,71
IBO 1350-7	1.350	1.385	112	80,9	405	7	27.360	2,74
IBO 1438-7	1.438	1.351	112	82,9	430	7	30.932	2,81
IBO 512-8	512	1.222	96	78,6	160	8	4.105	2,29
IBO 544-8	544	1.528	115,2	75,4	170	8	4.636	2,23
IBO 582-8	582	1.675	128	76,4	175	8	5.442	2,27
IBO 617-8	617	1.186	96	80,9	185	8	5.730	2,36
IBO 848-8	848	1.600	128	80	290	8	13.285	2,38
IBO 878-8	878	1.375	115,2	83,8	290	8	13.016	2,47
IBO 928-8	928	1.568	128	81,6	290	8	13.758	2,42
IBO 956-8	956	1.362	115,2	84,7	300	8	14.876	2,5
IBO 978-8	978	1.314	115,2	87,7	300	8	16.003	2,59
IBO 1090-8	1.090	1.540	128	83,1	345	8	18.900	2,47
IBO 1217-8	1.217	1.489	128	86	325	8	19.814	2,55
IBO 1310-8	1.310	1.470	128	87,1	360	8	23.620	2,59
IBO 1492-8	1.492	1.330	128	96,2	400	8	30.953	2,86
IBO 1607-8	1.607	1.357	128	94,3	425	8	34.315	2,8
IBO 1805-8	1.805	1.278	128	100,2	450	8	52.106	2,97
IBO 1225-9	1.225	1.338	129,6	96,9	315	9	19.303	2,54
IBO 1483-9	1.483	1.430	144	100,7	420	9	33.442	2,66
IBO 1757-9	1.757	1.352	144	106,5	420	9	37.667	2,81
IBO 1814-9	1.814	1.346	144	107	425	9	38.577	2,82
IBO 1922-9	1.922	1.303	144	110,5	430	9	41.339	2,92
IBO 655-10	655	1.435	144	100,3	165	10	5.723	2,65
IBO 1383-10	1.383	993	120	120,8	300	10	21.039	2,82
IBO 1424-10	1.424	1.525	160	104,9	350	10	24.990	2,49
IBO 2032-10	2.032	1.340	160	119,4	440	10	44.717	2,84



*Coating single pile two sided without the inside of the interlocks

Technical delivery conditions
EN10249-1

Tolerances
EN10249-2

Steel grades
S235, S275, S355 or equivalent

Certificates according to EN10204/3.1

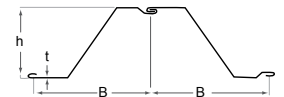
Delivered length
24,00 m maximum. Longer lengths upon request.

Packing
Free sections or bundles max. 5.000 kg.

Service
Pairing and joining by crimping or welding upon request.
Handling holes upon request; mill standard diameter 40 mm at 75 mm, 150 mm or 300 mm from sheet pile end.

IBZ

Section	Elastic section modulus W_y cm ³ /m'	Width B mm	Weight		Height h mm	Thickness t mm	Moment of inertia I_y cm ⁴ /m'	Coating area * A m ² /m'
			Single pile kg/m	Wall kg/m ²				
IBZ 471-5	471	809	40	49,4	230	5	5.421	2,22
IBZ 617-5	617	766	40	52,2	270	5	8.338	2,35
IBZ 644-5	644	766	40	52,2	304	5	9.785	2,35
IBZ 784-5	784	722	40	55,4	355	5	13.136	2,49
IBZ 965-5	965	676	40	59,2	425	5	20.516	2,66
IBZ 699-6	699	792	48	62,7	275	6	9.611	2,27
IBZ 783-6	783	748	48	64,1	305	6	11.939	2,41
IBZ 878-6	878	725	48	66,2	325	6	14.265	2,48
IBZ 1153-6	1.153	655	48	73,2	377	6	21.741	2,75
IBZ 1167-6	1.167	659	48	72,8	405	6	23.626	2,73
IBZ 1246-6	1.246	903	60	66,4	470	6	29.280	2,55
IBZ 491-7	491	794	56	70,5	175	7	4.293	2,27
IBZ 532-7	532	787	56	71,1	185	7	4.923	2,29
IBZ 846-7	846	737	56	75,9	275	7	11.628	2,44
IBZ 921-7	921	727	56	77	306	7	14.095	2,48
IBZ 1078-7	1.078	694	56	80,6	330	7	17.790	2,59
IBZ 1257-7	1.257	665	56	84,3	390	7	24.517	2,71
IBZ 1330-7	1.330	644	56	86,9	378	7	25.130	2,8
IBZ 1201-8	1.201	685	64	93,4	330	8	19.820	2,63
IBZ 1227-8	1.227	683	64	93,6	335	8	20.865	2,64
IBZ 1257-8	1.257	679	64	94,3	350	8	22.000	2,65
IBZ 1481-8	1.481	639	64	100,1	378	8	28.008	2,82
IBZ 1244-9	1.244	700	72	102,9	314	9	19.527	2,57
IBZ 1307-9	1.307	686	72	105	320	9	20.908	2,62
IBZ 1684-9	1.684	630	72	114,3	375	9	31.568	2,86
IBZ 1735-9	1.735	627	72	114,7	395	9	34.270	2,87
IBZ 1771-9	1.771	882	90	102	450	9	39.857	2,61
IBZ 1832-9	1.832	871	90	103,3	450	9	41.228	2,64
IBZ 1349-10	1.349	682	80	117,2	305	10	20.567	2,64
IBZ 1404-10	1.404	677	80	118,1	320	10	22.468	2,66
IBZ 1720-10	1.720	636	80	125,7	360	10	30.964	2,83
IBZ 1929-10	1.929	607	80	131,7	380	10	36.648	2,97
IBZ 2354-10	2.354	808	100	123,8	475	10	55.898	2,85
IBZ 2468-10	2.468	795	100	125,8	500	10	61.702	2,89
IBZ 2628-10	2.628	776	100	128,9	535	10	70.289	2,96
IBZ 3082-10	3.082	715	100	139,8	575	10	88.594	3,22



*Coating single pile two sided without the inside of the interlocks

Technical delivery conditions
EN10249-1

Tolerances
EN10249-2

Steel grades
S235, S275, S355 or equivalent

Certificates according to
EN10204/3.1

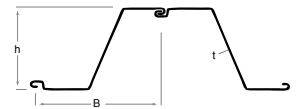
Delivered length
24,00 m maximum. Longer lengths upon request.

Packing
Free sections or bundles max. 5.000 kg.

Service
Pairing and joining by crimping or welding upon request.
Handling holes upon request; mill standard diameter 40 mm at 75 mm, 150 mm or 300 mm from sheet pile end.

IBZZ

Section	Elastic section modulus W_y cm ³ /m'	Width B mm	Weight		Height h mm	Thickness t mm	Moment of inertia I_y cm ⁴ /m'
			Single pile kg/m	Wall kg/m ²			
IBZZ 5-850	656	850	42,8	50,4	340	5	11.160
IBZZ 6-800	638	800	48,5	62	300	6	9.505
IBZZ 7-850	714	850	51,3	60,6	340	6	12.034
IBZZ 7-725	730	725	45	60,4	300	6	10.727
IBZZ 8-725	846	725	52	71,7	271	7	11.540
IBZZ 12-770	1.245	770	72,6	94	344	8,5	21.430
IBZZ 12-850	1.205	850	44,3	75,3	420	7	24.651
IBZZ 13-770	1.300	770	76,1	99	344	9	22.360
IBZZ 13-850	1.318	850	73,1	86	400	8	26.360
IBZZ 14-770	1.355	770	79,5	103	345	9,5	23.300
IBZZ 17-700	1.730	700	73,1	104,4	420	8,5	36.330
IBZZ 18-700	1.800	700	76,5	109	420	9	37.800
IBZZ 18-850	1.805	850	85,9	101,1	480	9	43.335
IBZZ 19-750	1.944	750	80,9	107,8	460	9	44.718
IBZZ 20-700	1.945	700	83,3	119	421	10	40.950
IBZZ 20-850	2.000	850	96	112,9	470	10	46.862
IBZZ 24-700	2.430	700	95,7	136,7	459	11,2	55.768
IBZZ 26-700	2.600	700	102,9	147	460	12,2	59.800
IBZZ 28-700	2.760	700	110	157	440	13,2	63.620
IBZZ 28-725	2.800	725	94,9	130,9	550	10	75.965
IBZZ 33-700	3.285	700	76,7	163	500	12	82.929
IBZZ 36-700	3.600	700	118,6	169,4	520	12,5	89.668
IBZZ 37-700	3.710	700	124,5	177,8	499	12,5	92.415
IBZZ 39-700	3.905	700	133	190	560	13,5	97.500
IBZZ 42-750	4.231	750	141,6	188,8	550	13	116.350
IBZZ 46-580	4.600	580	133	229	540	15	110.465
IBZZ 48-750	4.805	750	172,4	229,8	520	15	124.921
IBZZ 50-580	5.020	580	146,8	253	580	16	121.070



Technical delivery conditions
EN10249-1

Tolerances
EN10249-2

Steel grades
S235, S275, S355 or equivalent

Certificates according to
EN10204/3.1

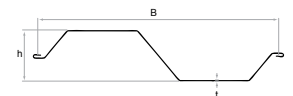
Delivered length
24,00 m maximum. Longer lengths upon request.

Packing
Free sections or bundles max. 5.000 kg.

Service
Pairing and joining by crimping or welding upon request.
Handling holes upon request; mill standard diameter 40 mm at 75 mm, 150 mm or 300 mm from sheet pile end.

MKU

Section	Elastic section modulus W_y cm ³ /m'	Width B mm	Weight		Height h mm	Thickness t mm	Moment of inertia I_y cm ⁴ /m'	Coating area * A m ² /m'
			Single pile kg/m	Wall kg/m ²				
MKU 130-3	130	795	24	30,2	120	3	778	2,31
MKU 520-8	520	1.170	96	82,1	185	8	4.811	2,39
MKU 940-8	940	1.531	128	83,6	325	8	15.291	2,48
MKU 1202-8	1.202	1.401	128	91,4	440	8	26.457	2,71



*Coating two sided without the inside of the interlocks

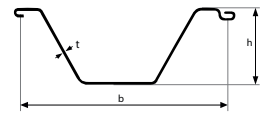
TRENCH SHEETS

Section	Elastic section modulus W_y cm ³ /m	Width b mm	Weight		Height h mm	Thickness t mm	Moment of inertia I_y cm ⁴ /m
			Single pile kg/m	Wall kg/m ²			
MKD VI/6	182	600	62,5	37,5	78	6	726
MKD VI/8	242	600	83,3	50	80	8	968



MKL

Section	Elastic section modulus W_y cm ³ /m	Width b mm	Weight		Height h mm	Thickness t mm	Moment of inertia I_y cm ⁴ /m
			Single pile kg/m	Wall kg/m ²			
MKL 3-4	302	700	32,4	46,3	150	4	2.209
MKL 3-5	374	700	40,4	57,7	152	5	2.753
MKL 3-6	455	700	48,5	69,3	154	6	3.369
MKL 3-7	540	700	56,3	80,4	156	7	4.004
MKL 3-8	600	700	64,2	88,9	158	8	4.460
MKL 3-9	680	700	72	102,9	160	9	5.120
MKL 4-5	774	710	49,5	69,7	294	5	10.920
MKL 4-6	933	710	57,9	82,8	296	6	13.530
MKL 4-7	1.080	710	67,3	96,2	298	7	15.701
MKL 4-8	1.230	710	76,7	109,6	300	8	17.896
MKL 4-9	1.380	710	85,6	122,3	300	9	20.896



Technical delivery conditions
EN10249-1

Tolerances
EN10249-2

Steel grades
S235, S275, S355 or equivalent
ASTM A572 Gr 50, Gr 60 and
Gr 65

Certificates according to
EN10204/3.1

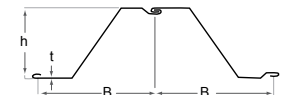
Delivered length
24,00 m maximum. Longer
lengths upon request.

Packing
Free sections or bundles max.
5.000 kg.

Service
Pairing and joining by crimping
or welding upon request.
Handling holes upon request; mill
standard diameter 40 mm at 75
mm, 150 mm or 300 mm from
sheet pile end.

MSZ

Section	Elastic section modulus W_y cm ³ /m	Width b mm	Weight		Height h mm	Thickness t mm	Moment of inertia I_y cm ⁴ /m	Coating area * A m ² /m'
			Single pile kg/m	Wall kg/m ²				
MSZ 14-340	1.145	878	80.5	91.7	310	8.6	17.968	2.30
MSZ 14-350	1.178	878	82.9	94.4	310	8.9	18.504	2.30
MSZ 14-375	1.257	878	88.8	101.2	310	9.5	19.719	2.30
MSZ 15-340	1.412	833	80.5	96.7	358	8.6	25.607	2.30
MSZ 15-350	1.455	833	82.9	99.5	358	8.9	26.391	2.30
MSZ 15-375	1.554	833	88.8	106.6	358	9.5	28.272	2.30
MSZ 16-350	1.706	789	82.9	105.1	395	8.9	34.119	2.30
MSZ 16-375	1.825	789	88.8	112.6	395	9.5	36.580	2.30
MSZ 16-406	1.976	789	96.1	121.9	395	10.3	39.703	2.30
MSZ 17-350	1.895	755	82.9	109.8	417	8.9	40.061	2.30
MSZ 17-375	2.027	755	88.8	117.7	417	9.5	42.957	2.30
MSZ 17-406	2.194	755	96.1	127.4	417	10.3	46.570	2.30
MSZ 18-350	2.075	721	82.9	115.0	437	8.9	45.893	2.30
MSZ 18-375	2.220	721	88.8	123.2	437	9.5	49.162	2.30
MSZ 18-406	2.403	721	96.1	133.4	437	10.3	53.364	2.30



*Coating two sided without the
inside of the interlocks

Technical delivery conditions
EN10249-1

Tolerances
EN10249-2

Steel grades
S235, S275, S355 or equivalent

Certificates according to
EN10204/3.1

Delivered length
24,00 m maximum. Longer lengths
upon request.

Packing
Free sections or bundles max.
5.000 kg.

Service
Pairing and joining by crimping or
welding upon request.
Handling holes upon request; mill
standard diameter 40 mm at 75
mm, 150 mm or 300 mm from
sheet pile end.



PHOTOGRAPH COURTESY OF: MASAYUKI INAGASE / CAKE SKATE



COMBINED WALLS

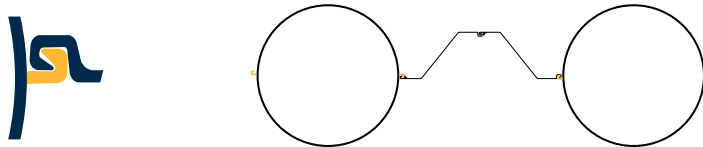
A highly economical solution for heavy retaining structures is the pipe - sheet pile combination. Hot rolled steel interlocks are welded to spirally welded pipe. After the pipes are driven into the ground, sheet piles are installed in between to create an extraordinary strong wall. This solution is particularly suited for maritime and tunnel construction and deep foundation projects.

Combi-wall pipes and pipe piling for jetty structures can be provided with various types of pile shoes to make driving easier in hard soils conditions and to assure a solid footing.

EXAMPLES OF COMBI-WALL STRUCTURES - WITH Z-PILING

Pipe Pile diameter x WT	Double sheet pile	System width	Elastic section modulus	Moment of inertia	Sheet pile length / Pipe pile length			Allowable elastic moment		
					100% kg/m ²	85% kg/m ²	70% kg/m ²	X 70 kNm/m'	S 440 kNm/m'	S 355 kNm/m'
mm		mm	cm ³ m'	cm ⁴ /m'						
914,4 x 12,5	ESZ 17-700	2.364	3.802	173.838	180,1	170,7	161,3	1.836	1.673	1.350
1.118,0 x 14,2	ESZ 17-700	2.568	5.579	311.850	208,3	199,7	191,1	2.695	2.455	1.980
1.219,2 x 15,9	ESZ 19-700 10/10*	2.669	7.037	428.997	239,8	230,4	221,0	3.399	3.096	2.498
1.422,4 x 25,0	ESZ 19-700 10/10*	2.872	13.394	952.562	359,2	350,4	341,7	6.469	5.893	4.755

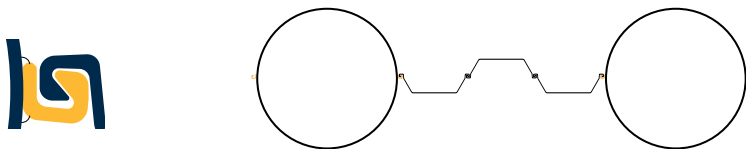
*The ESZ 19-700 10/10 sheet piles provide extra thickness to compensate for loss of thickness due to corrosion.



EXAMPLES OF COMBI-WALL STRUCTURES - WITH TRIPLE U-PILING

Pipe Pile diameter x WT	Triple sheet pile	System width	Elastic section modulus	Moment of inertia	Sheet pile length / Pipe pile length			Allowable elastic moment		
					100% kg/m ²	85% kg/m ²	70% kg/m ²	X 70 kNm/m'	S 440 kNm/m'	S 355 kNm/m'
mm		mm	cm ³ m'	cm ⁴ /m'						
1.016,0 x 12,5	VL 603	2.866	3.644	185.138	175,0	164,9	154,9	1.890	1.721	1.389
1.219,2 x 16,5	VL 605 A	3.069	6.391	389.545	234,1	222,9	211,7	3.087	2.812	2.269
1.422,4 x 25,0	VL 603 Z11*	3.272	11.679	830.404	335,5	324,7	313,9	5.641	5.139	4.146

*The VL 603 Z11 sheet piles provide extra thickness to compensate for loss of thickness due to corrosion.

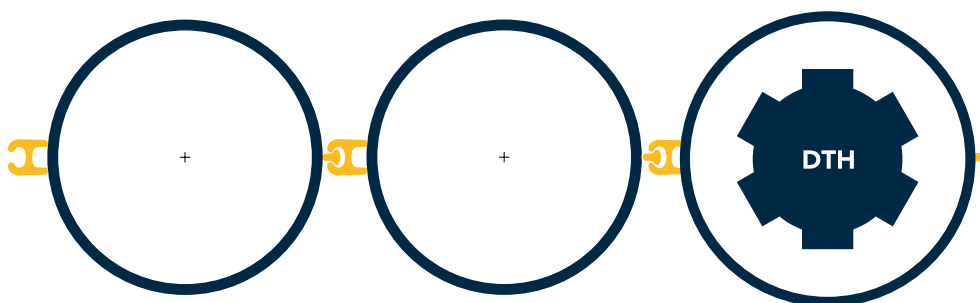


PILE WALLS

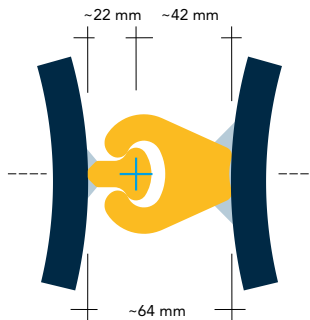
PalPile can supply continuous steel pile retaining wall solutions consisting of steel piles with welded-on steel interlocks. The PalPile pile wall is capable of taking both horizontal as vertical loads and is usually installed with a DTH-drilling hammer. The most commonly used dimensions are \varnothing 219,1 mm until \varnothing 406,4 mm. Larger pile dimensions are available on request.

The piles are stocked in steel grades S355J2H and S460MH. S500, S550J2H qualities are available upon request. The dimensions and tolerances are according to EN10219-2. The male-female interlocks are available in S355 and S430 and are stocked in 12,0 m. An injection channel on the female interlock is optional. The standard distance between the piles is 64 mm, but interlocks allowing a 75 mm, 88 mm and 100 mm distance are also available.

Lock welding is done automatically and is according to EN1090 EXC2 and EXC3. Welding of ring bits is also available on request.

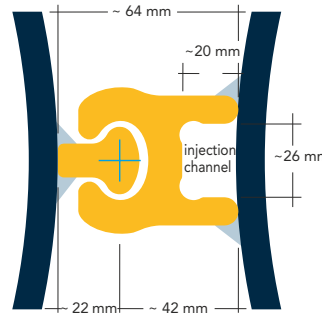


MALE - FEMALE INTERLOCKS



Properties M22+F40

Steel grade: S355J2
 Length: 8 m, 11,8 m
 Steel thickness: 12 mm
 Weight M22: 3,4 kg/m
 Weight F40: 14,28 kg/m
 Max. tensile strength: 3,419 kN/m



Properties M22+F40-IC

Steel grade: S355J2
 Length: 8 m, 11,8 m
 Steel thickness: 10 mm / 12 mm
 Weight M22: 3,4 kg/m
 Weight F40-IC: 13,55 kg/m
 Max. tensile strength: 3,167 kN/m

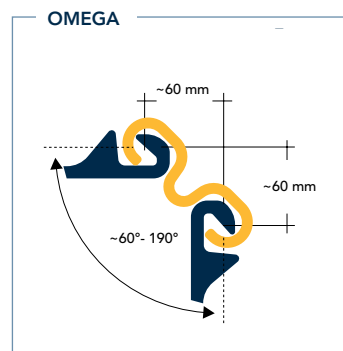
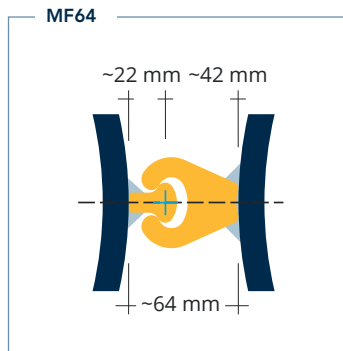
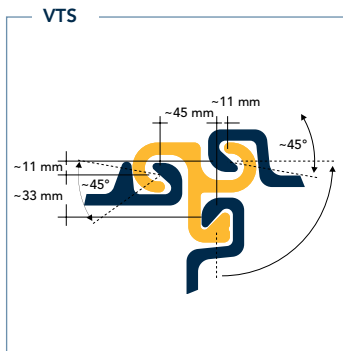
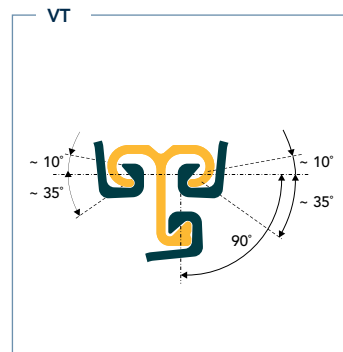
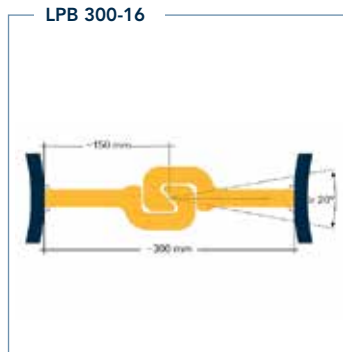
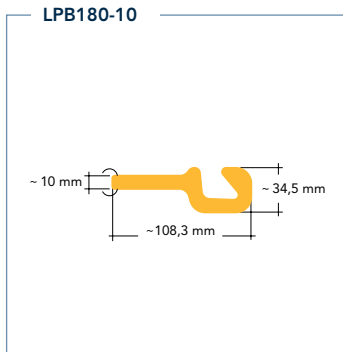
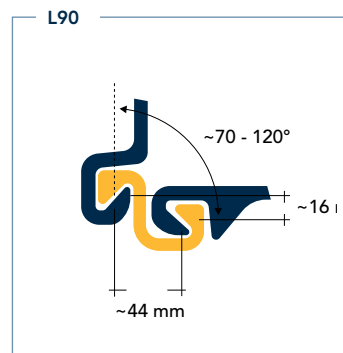
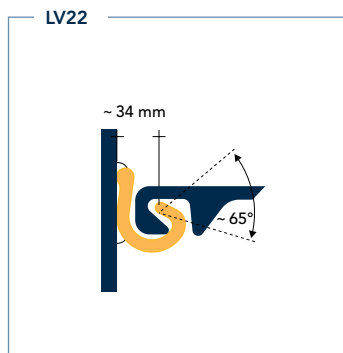
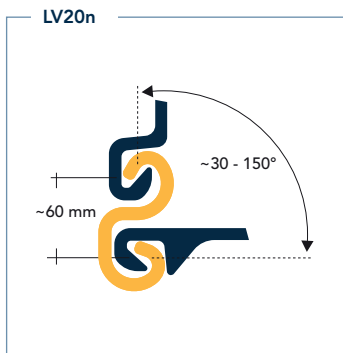
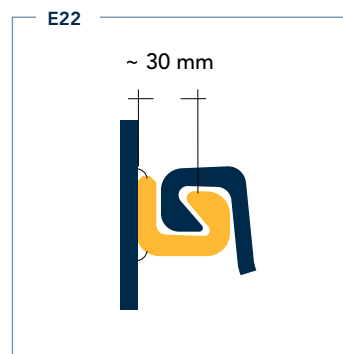
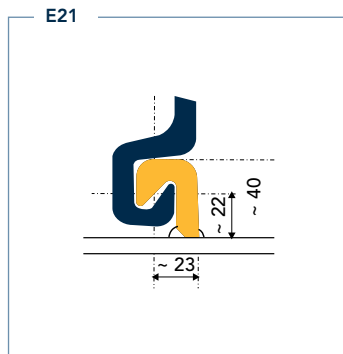
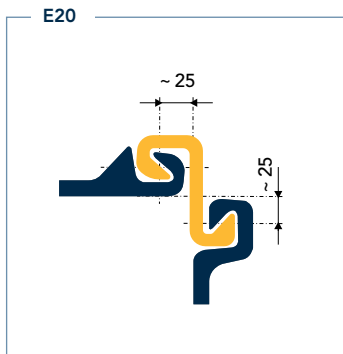
PROPERTIES

Dimension	WT	Elastic section modulus	Plastic section modulus	Elastic Moment Capacity	Plastic Moment Capacity
[mm]	[mm]	[cm ³ /m]	[cm ³ /m]	[kNm/m]	[kNm/m]
219,1	10,0	1.169	1.553	538	714
219,1	12,5	1.411	1.896	649	872
273,0	10,0	1.565	2.061	720	948
273,0	12,5	1.902	2.528	875	1.163
323,9	10,0	1.945	2.548	895	1.172
323,9	12,5	2.376	3.135	1.093	1.442
406,4	12,5	3.155	4.132	1.451	1.901

WEIGHT OF PILE

Dimension	WT	Weight			
		[kg/m]	6 m	12 m	18 m
[mm]	[mm]	[kg/m]			
219,1	10,0	51,56	309,38	618,77	928
219,1	12,5	63,68	382,11	764,21	1.146
273,0	10,0	64,86	389,13	778,27	1.167
273,0	12,5	80,30	481,79	963,59	1.445
323,9	10,0	77,41	464,45	928,89	1.393
323,9	12,5	95,99	575,93	1.151,87	1.728
406,4	12,5	121,42	728,52	1.457,04	2.186





STEEL PIPES

PalPile can supply SSAW, LSAW, and ERW steel pipes from stock and from preferred partner mills in Europe, Russia, Turkey and China, all CE certified. Dimensions are up to 2.032 mm in diameter, 40 mm wall thickness (depending on steel grade) and up to 70,0 m length. All steel grades per EN10219-1 and API 5L are available. Third Party Inspection by a certified control agency based on a client approved ITP is standard procedure.

For smaller projects which require quick delivery, we can supply surplus steel pipes from our own and partner stocks at very attractive prices. Circular (butt) welding and E20, E22 or LPB connector welding is offered. NDT (Ultrasonic Testing, Dye Penetrant Testing and Magnetic Particle Testing) is standard procedure.

PalPile has supplied pipe piles for building foundations, quay walls, jetties and temporary excavations throughout Europe.

Seamless tubes: sizes from Ø 30 mm - 5 mm wall thickness up to Ø 660 mm - 80 mm wall thickness are available from stock. Tolerances as per standard EN10210-2. Steel grades EN10210 / EN10297 S355J2H / E355N / P 355N-TC1.

SSAW STEEL PIPES

Ø: 219,1 mm – 3.200,0 mm

WT: 3,50 mm – 26,00 mm

Lengths: ≤ 70,00 m

Steel qualities: S235JR - X70 PSL1

According to standards: EN102019-1/2, ASTM, API 5L and GHOST.

Certificates according to EN10204/3.1

LSAW / ERW STEEL PIPES

Ø: 21,3 mm – 1.420,0 mm

WT: 2,0 mm – 45,00 mm

Lengths: ≤ 16,00 m

Steel qualities: S235JR - X70 PSL1

According to standards: EN102019-1/2, ASTM, API 5L and GHOST.

Certificates according to EN10204/3.1

SEAMLESS STEEL PIPES

Ø: 21,3 mm – 711,0 mm

WT: 2,5 mm – 120,00 mm

Lengths: ≤ 16,00 m

Steel qualities: S235JR - X70 PSL1

According to standards: EN102019-1/2, ASTM, API 5L and GHOST.

Certificates according to EN10204/3.1



ANCHORING

PalPile can supply a cold threaded self-drilling hollow bar system in steel grades S460NH and E470. The TAB hollow bar system can be used as grout injection anchors. Diameters from Ø 30 to Ø 135 mm. All accessories - couplers, nuts, washer plates, clay bits and (button) rock bits - are available from stock. Galvanizing and full duplex coatings are possible. We can also provide the necessary flushing rods for your drilling rig of choice. Our products offer a considerable economic advantage to those of the well-known market leaders.

Fields of application:

- Soil nailing and wall stabilizations;
- Wall and shaft stabilization for mining and tunneling;
- Wall anchorage for construction pits, sheet piling, retaining walls;
- Anchoring against flotation in (submerged) concrete floors of construction pits or tunnel entrances;
- Micro piles in pile and pad foundations or for building and foundation repairs;
- For specific applications, such as geothermal energy, jet grouting and other injection techniques.

Solid threaded bars from Ø 30 mm up to Ø 100 mm can be used as solid core tensile and compression anchors. Available in steel grades S355, S530 and S600, they offer a competitive alternative to all GEWI® solutions. PalPile can offer a complete program of threaded solid bars (upset or with cold rolled threads). All accessories such as couplers, turnbuckles, nuts, washer plates are available.

SELF DRILLING THREADED HOLLOW ANCHOR BARS - Steel grade E500/700

Anchor type OD x WT	Cross-sectional area	Weight	Min. yield strength	Min. tensile strength	Load at yield	Ultimate load
mm	mm ²	kg/m	R _s N/mm ²	R _m N/mm ²	R _s kN	R _m kN
42,4 x 8,0	865	6,79	500	700	432	605
42,4 x 11,0	1.085	8,52	500	700	543	760
51,0 x 10,0	1.288	10,11	500	700	644	902
51,0 x 11,0	1.382	10,85	500	700	691	968
51,0 x 12,5	1.512	11,87	500	700	756	1.058
60,3 x 12,5	1.877	14,74	500	700	939	1.314
60,3 x 16,0	2.227	17,48	500	700	1.113	1.559
70,0 x 14,2	2.489	19,54	500	700	1.245	1.742
70,0 x 17,5	2.886	22,66	500	700	1.443	2.020
70,0 x 20,0	3.142	24,66	500	700	1.571	2.199
76,1 x 14,2	2.761	21,68	500	700	1.381	1.933
76,1 x 17,5	3.222	25,29	500	700	1.611	2.255
76,1 x 20,0	3.525	27,67	500	700	1.762	2.467
82,5 x 17,5	3.574	28,05	500	700	1.787	2.501
82,5 x 20,0	3.927	30,83	500	700	1.963	2.749
82,5 x 22,2	4.206	33,01	500	700	2.103	2.944
82,5 x 25,0	4.516	35,45	500	700	2.258	3.161
95,0 x 20,0	4.712	36,99	500	700	2.356	3.299
95,0 x 22,2	5.077	39,86	500	700	2.539	3.554
95,0 x 25,0	5.498	43,16	500	700	2.749	3.848
101,6 x 17,5	4.624	36,30	500	700	2.312	3.237
101,6 x 20,0	5.127	40,25	500	700	2.564	3.589
101,6 x 22,2	5.538	43,47	500	700	2.769	3.876
101,6 x 25,0	6.016	47,23	500	700	3.008	4.211
101,6 x 28,0	6.474	50,82	500	700	3.237	4.532
101,6 x 30,0	6.748	52,97	500	700	3.374	4.724
114,3 x 25,0	7.014	55,06	500	700	3.507	4.910
114,3 x 28,0	7.591	59,59	500	700	3.796	5.314
114,3 x 30,0	7.945	62,37	500	700	3.973	5.562
114,3 x 32,0	8.274	64,95	500	700	4.137	5.792
133,0 x 25,0	8.482	66,59	500	700	4.241	5.938
133,0 x 30,0	9.708	76,20	500	700	4.854	6.795
139,7 x 30,0	10.339	81,16	500	700	5.169	7.237
139,7 x 36,0	11.728	92,07	500	700	5.864	8.210
139,7 x 40,0	12.529	98,35	500	700	6.264	8.770

- Steel grade 'E500/700'
- Including Charpy test min. 27J at -20°C on basematerial
- Additional dimensions available on request

HOT ROLLED ANCHOR BARS - Steel grade E550/620

Diameter	Cross-sectional area	Weight	Min. yield strength	Min. tensile strength	Load at yield	Ultimate load
mm	mm ²	kg/m	R _e N/mm ²	R _m N/mm ²	R _e kN	R _m kN
25L	491	3,85	550	620	270	304
28L	616	4,83	550	620	339	382
32L	804	6,31	550	620	442	499
40L	1.257	9,86	550	620	691	779
50L	1.963	15,41	550	620	1.080	1.217
57,5L	2.597	20,38	550	620	1.428	1.610
63,5L	3.167	24,86	550	620	1.742	1.963
75L	4.418	34,68	550	620	2.430	2.739

- Steel grade '550/620'
- HRAB's are also available with double corrosion protection (DCP)

HOT ROLLED ANCHOR BARS - Steel grade E670/800

Diameter	Cross-sectional area	Weight	Min. yield strength	Min. tensile strength	Load at yield	Ultimate load
mm	mm ²	kg/m	R _e N/mm ²	R _m N/mm ²	R _e kN	R _m kN
22R	380	2,98	670	800	255	304
25R	491	3,85	670	800	329	393
28R	616	4,83	670	800	413	493
30R	707	5,55	670	800	474	565
35R	962	7,55	670	800	645	770
43R	1.452	11,40	670	800	973	1.162
50R	1.963	15,41	670	800	1.316	1.571
57,5R	2.597	20,38	670	800	1.740	2.077
63,5R	3.167	24,86	670	800	2.122	2.534
75R	4.418	34,68	670	800	2.960	3.534

- Steel grade '670/800'
- HRAB's are also available with double corrosion protection (DCP)

SOLID THREADED ANCHOR BARS - Steel grade E355/470

Diameter	Cross-sectional area	Weight	Min. yield strength	Min. tensile strength	Load at yield	Ultimate load
mm	mm ²	kg/m	R _e N/mm ²	R _m N/mm ²	R _e kN	R _m kN
40	1.257	9,86	355	470	446	591
45	1.590	12,48	355	470	565	748
50	1.963	15,41	355	470	697	923
55	2.376	18,65	355	470	843	1.117
60	2.827	22,20	355	470	1.004	1.329
65	3.318	26,05	355	470	1.178	1.560
70	3.848	30,21	355	470	1.366	1.809
75	4.418	34,68	355	470	1.568	2.076
80	5.027	39,46	355	470	1.784	2.362
85	5.675	44,54	355	470	2.014	2.667
90	6.362	49,94	355	470	2.258	2.990
95	7.088	55,64	355	470	2.516	3.331
100	7.854	61,65	355	470	2.788	3.691

- Steel grade 'S355/470'
- Including Charpytest min. 27J at -20° C on basematerial
- Additional diameters available on request
- STAB's are also available with double corrosion protection (DCP)

SOLID THREADED ANCHOR BARS Steel grade S500/700

Diameter	Cross-sectional area	Weight	Min. yield strength	Min. tensile strength	Load at yield	Ultimate load
mm	mm ²	kg/m	R _e N/mm ²	R _m N/mm ²	R _e kN	R _m kN
40	1.257	9,86	500	700	628	880
45	1.590	12,48	500	700	795	1.113
50	1.963	15,41	500	700	982	1.374
55	2.376	18,65	500	700	1.188	1.663
60	2.827	22,20	500	700	1.414	1.979
65	3.318	26,05	500	700	1.659	2.323
70	3.848	30,21	500	700	1.924	2.694
75	4.418	34,68	500	700	2.209	3.093
80	5.027	39,46	500	700	2.513	3.519
85	5.675	44,54	500	700	2.837	3.972
90	6.362	49,94	500	700	3.181	4.453
95	7.088	55,64	500	700	3.544	4.962
100	7.854	61,65	500	700	3.927	5.498

- Steel grade 'S500/700'
- Including Charpytest min. 27J at -20°C on basematerial
- Additional diameters available on request
- STAB's are also available with double corrosion protection (DCP)



OFFSHORE STEEL CONSTRUCTION AND MARINE ENGINEERING

At 150.000 m², of which 13.000 m² roofed, we manufacture pressure vessels and heat exchanger as well as welded equipment for power, process industries and infrastructure.

Key figures of our capacities:

Diameter: 5,6 m

Length: 50 m

Weight: up to 200 metric tons

Plate thickness up to 120 mm

Welding EN1090 EXC 2, EXC 3, EXC 4

- Monopiles
- Dolphins and mooring piles
- Tripod structures for windmill foundations
- Collision protection
- Combined walls
- King Piles



BRACING



PALPILE BRACING SYSTEM

The PalPile Bracing System is very easy and straightforward to assemble, very adaptable, modular hydraulic bracing system that has interchangeable extension modules in various lengths.

The PalPile 300 or 400 Series Bracing can be used with heavy duty steel trench sheets or sheet piles to support excavations of various size and depths. The PalPile 300 or 400 Series Bracing extension modules have built in shear stops to incorporate the use of knee braces and cross bracing. The PalPile 300 or 400 Series Bracing are recommended for excavations from 2,1 m to 16,7 m and are normally assembled and installed within the excavation using either excavators or cranes. Bigger sizes of excavations can be braced using this system with intermediate bracing struts such as the PP 300, PP 400, PP 600, and PP 1000 Bracing Strut.

Fabricated from grade S460 UC steel sections the extension modules are quickly assembled into brace legs using simple pin and retaining clip / bolt and nut assemblies. Each hydraulic leg contains a double acting hydraulic ram which gives 650 mm of stroke. These are joined together at corners to form frames with a simple pin and retaining clip. Extending the rams with the PalPile Power Pack and hydraulic jack allows the leg lengths to be easily adjusted to suit the excavation sizes. Lifting and restraining points are provided on each leg to allow the assembly / removal of the brace to be secure and safe. PalPile can supply a full range of suitable lifting and restraining chains.



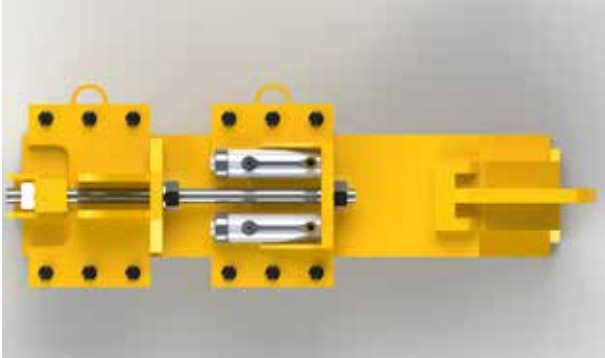
PRODUCT NOTES

- The hydraulic brace is a heavy duty piece of equipment and should only be assembled, installed and removed by qualified personnel and as per the installation instructions. When assembling on site ensure that all pins and retaining clips are in place and secured and all bolts are installed and fully tightened with a minimum of two threads visible beyond the nut.
- Hanging chains are connected to the sheet piles and attached to the brace to help with installation / extraction of the brace and to support at all times. All the hanging chains should be connected every 3,0 m and adjusted to ensure the brace is in the correct position. Hanging chains should never be used for lifting.
- Always visually inspect the brace before installation.
- The brace should always be installed square to the excavation walls and contact with all the inward facing sheet piles must be insured. Any gaps must be securely packed by using hardwood wedges.
- Safe access and edge protection (for personnel) and barrier protection (for plant) should always be considered.
- Prior to removal of the brace, all hydraulic rams must be released and retracted to avoid the need for excessive extraction forces and to avoid damaging corner joints.
- No matter how much care is taken during the installation and removal of hydraulic bracing systems some ground movement will occur in the areas immediately surrounding the excavation. Great care must be taken when specifying these systems for use adjacent to existing structures and services.

PALPILE 300 AND 400 SERIES BRACING

Hydraulic

PalPile 300 and 400 Series Bracing gives a 650 mm stroke of adjustment.



Description	Product No.	Weight (kg)
300 series Hydraulic Unit	0300	450

Description	Product No.	Weight (kg)
400 series Hydraulic Unit	0400	900

Extendable ram section is powered with 700 bar hydraulic jack.

Mechanism and automation control of extendable ram section is powered by safe 24V voltage.



Lengths

PalPile 300 and 400 Series Bracing consists of different beams in lengths of 0,5 m, 1,0 m, 2,0 m, 3,0 m and 6,0 m. All lengths are given as pin to pin.



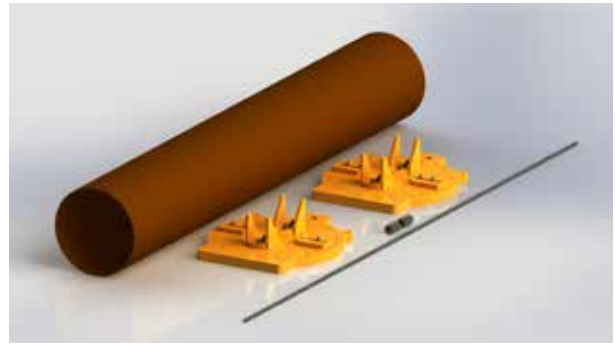
Description	Product No.	Weight (kg)
300 Series 0,5 m Extension	0305	103
300 Series 1,0 m Extension	0301	207
300 Series 2,0 m Extension	0320	330
300 Series 3,0 m Extension	0330	452
300 Series 6,0 m Extension	0360	825

Description	Product No.	Weight (kg)
400 Series 0,5 m Extension	0405	162
400 Series 1,0 m Extension	0401	325
400 Series 2,0 m Extension	0420	524
400 Series 3,0 m Extension	0430	723
400 Series 6,0 m Extension	0460	1334

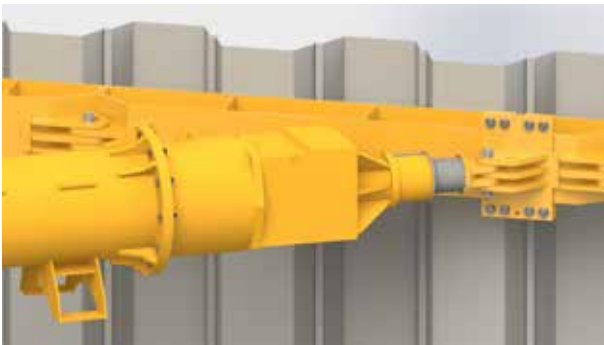
PALPILE 300 AND 400 SERIES BRACING



Ø 50 mm pins are used to connect selected extensions and hydraulic units into the frame.
All sections are connected with a Ø 50 mm Grade 50 pin and a safety clip. Then secured with nuts and bolts.



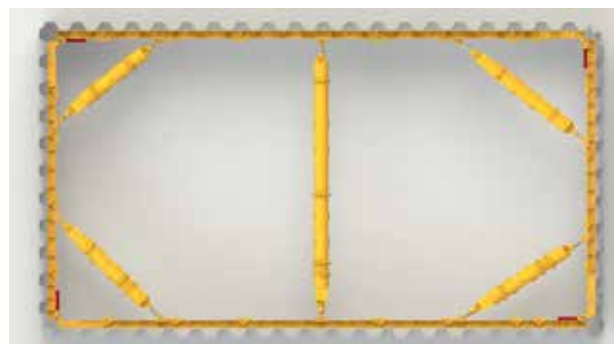
The power pack comes with a double acting 50 ton jack and 6,0 m female and male hoses.
Corners should be packed out with hardwood wedges to ensure the brace is evenly loaded.



Lifting points to ensure safe connection while moving the selected extension or hydraulic unit.



Connection points to secure restraint chains to ensure the brace is secured safely within the excavation.

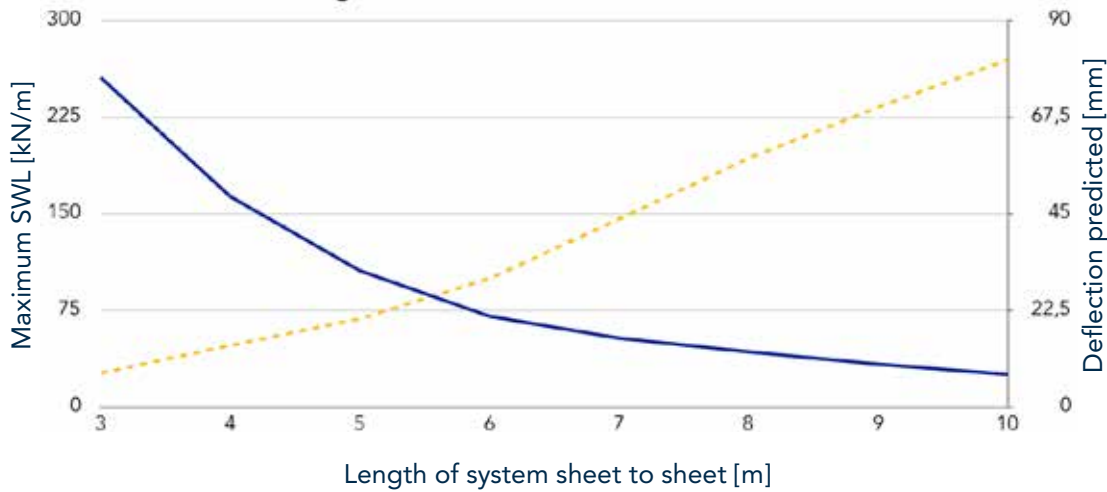


PALPILE BRACING - 300 SERIES

Hydraulic Unit 450 kg	0,5 mtr Ext 103 kg	1,0 mtr Ext 207 kg	2,0 mtr Ext 330 kg	3,0 mtr Ext 452 kg	6,0 mtr Ext 825 kg	Sheet to sheet		Clear opening	
						Min (mm)	Max (mm)	Min (mm)	Max (mm)
1						2.050	2.700	1.450	2.100
1	1					2.550	3.200	1.950	2.600
1		1				3.050	3.700	2.450	3.100
1	1	1				3.550	4.200	2.950	3.600
1			1			4.050	4.700	3.450	4.100
1	1		1			4.550	5.200	3.950	4.600
1				1		5.050	5.700	4.450	5.100
1	1			1		5.550	6.200	4.950	5.600
1		1		1		6.050	6.700	5.450	6.100
1	1	1		1		6.550	7.200	5.950	6.600
1			1	1		7.050	7.700	6.450	7.100
1	1		1	1		7.550	8.200	6.950	7.600
1					1	8.050	8.700	7.450	8.100
1	1				1	8.550	9.200	7.950	8.600
1		1			1	9.050	9.700	8.450	9.100
1	1	1			1	9.550	10.200	8.950	9.600
1			1		1	10.050	10.700	9.450	10.100

Heavy duty double acting 4-sided hydraulic support system to be used together with PalPile sheet piling or trench sheeting, giving support to excavations from 2,1-10,00 m.

LOADING CHART CURVE FOR BRACE 300 ACC. TO EN 14653

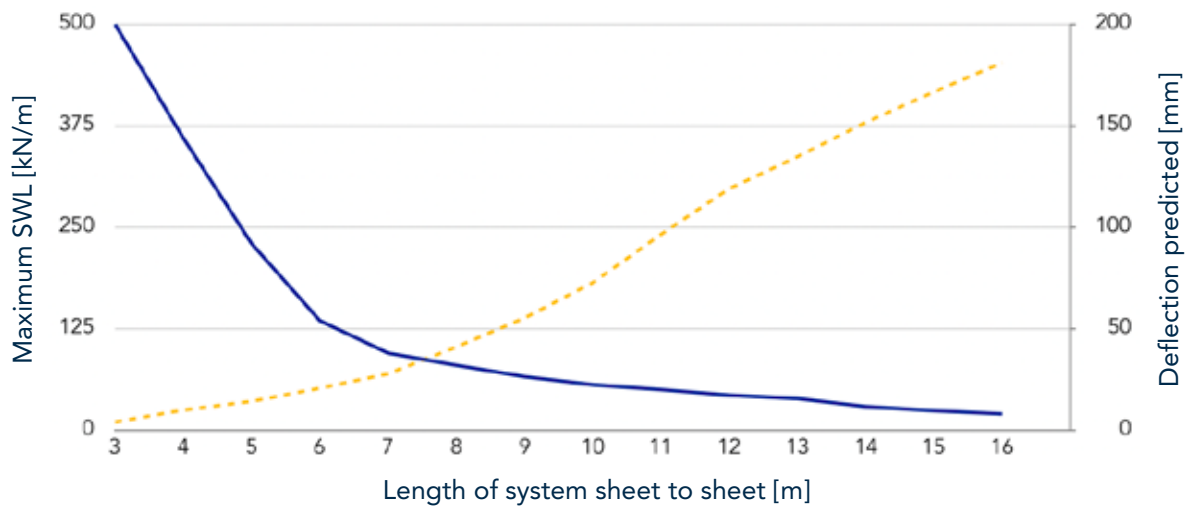


PALPILE BRACING - 400 SERIES

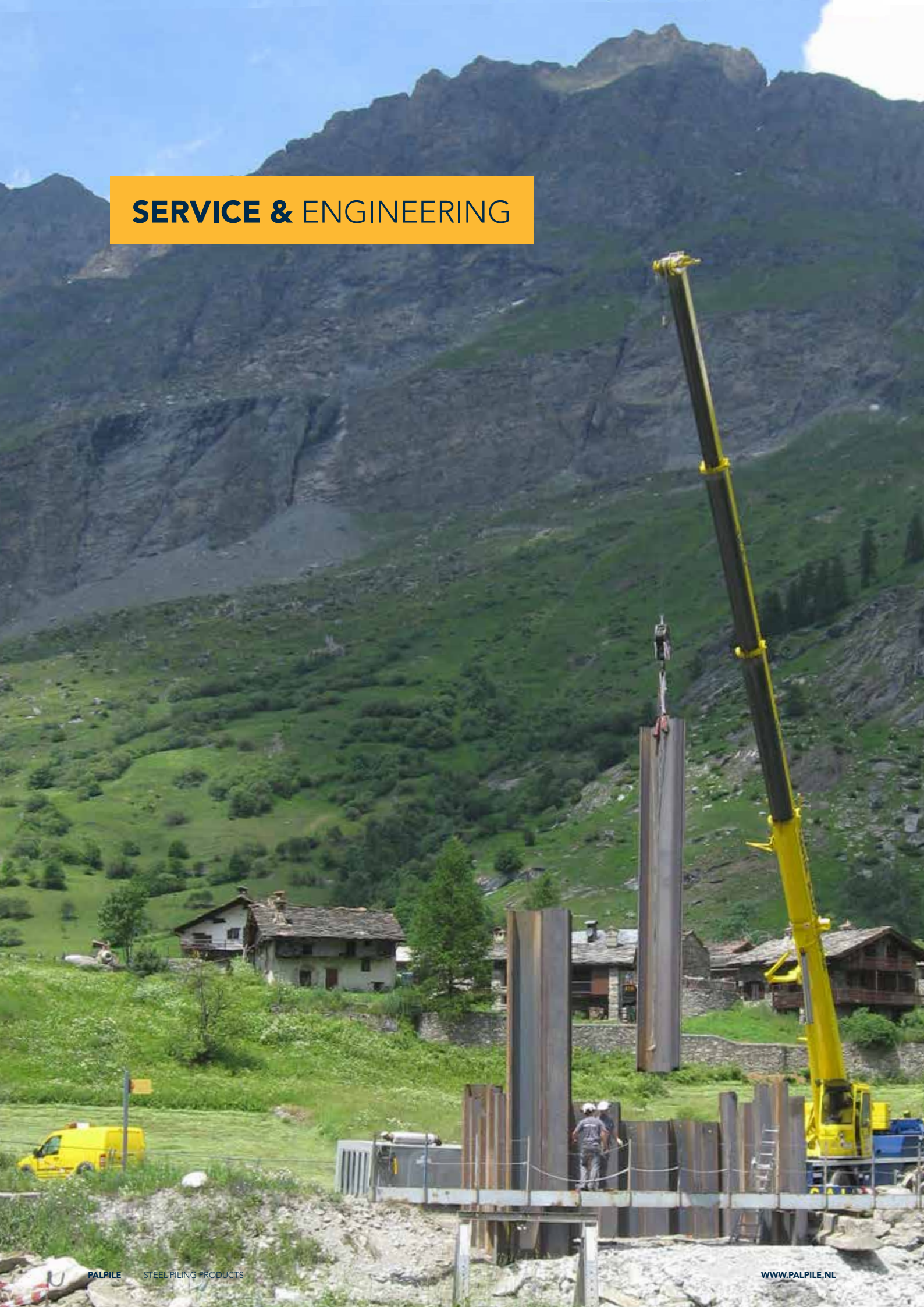
Hydraulic Unit 900 kg	0,5 mtr Ext 162 kg	1,0 mtr Ext 325 kg	2,0 mtr Ext 524 kg	3,0 mtr Ext 723 kg	6,0 mtr Ext 1.334 kg	Sheet to sheet		Clear opening	
						Min (mm)	Max (mm)	Min (mm)	Max (mm)
1						2.550	3.250	1.950	2.650
1	1					3.050	3.750	2.450	3.150
1		1				3.550	4.250	2.950	3.650
1	1	1				4.050	4.750	3.450	4.150
1			1			4.550	5.250	3.950	4.650
1	1		1			5.050	5.750	4.450	5.150
1				1		5.550	6.250	4.950	5.650
1	1			1		6.050	6.750	5.450	6.150
1		1		1		6.550	7.250	5.950	6.650
1	1	1		1		7.050	7.750	6.450	7.150
1			1	1		7.550	8.250	6.950	7.650
1	1		1	1		8.050	8.750	7.450	8.150
1					1	8.550	9.250	7.950	8.650
1	1				1	9.050	9.750	8.450	9.150
1		1			1	9.550	10.250	8.950	9.650
1	1	1			1	10.050	10.750	9.450	10.150
1			1		1	10.550	11.250	9.950	10.650
1	1		1		1	11.050	11.750	10.450	11.150
1				1	1	11.550	12.250	10.950	11.650
1	1			1	1	12.050	12.750	11.450	12.150
1				2	1	12.550	13.250	11.950	12.650
1	1			2	1	13.050	13.750	12.450	13.150
1			1	1	1	13.550	14.250	12.950	13.650
1	1		1	1	1	14.050	14.750	13.450	14.150
1					2	14.550	15.250	13.950	14.650
1	1				2	15.050	15.750	14.450	15.150
1		1			2	15.550	16.250	14.950	15.650
1	1	1			2	16.050	16.750	15.450	16.150

Heavy duty double acting 4-sided hydraulic support system to be used together with PalPile sheet piling or trench sheeting, giving support to excavations from 2,6-16,00 m.

LOADING CHART CURVE FOR BRACE 400 ACC. TO EN 14653



SERVICE & ENGINEERING



PROCESSING OF SHEET PILES

- Welding;
- Bending;
- Handling;
- Cutting of handling holes;
- Cutting to length with reduced tolerances;
- Pairing piles in doubles or triples; joining by means of crimping or welding;
- Fabrication of box piles.

INTERLOCK SEALING

Pertex Bitumen

Pertex Bitumen is the most cost-effective interlock sealant. It significantly reduces water leakage through the sheet pile interlocks. PalPile can provide the sheet piles with the interlocks filled. Alternatively, we can supply the Bitumen, the equipment and the instructions to enable our clients to apply the product themselves on site when they so choose.

Pile Lock

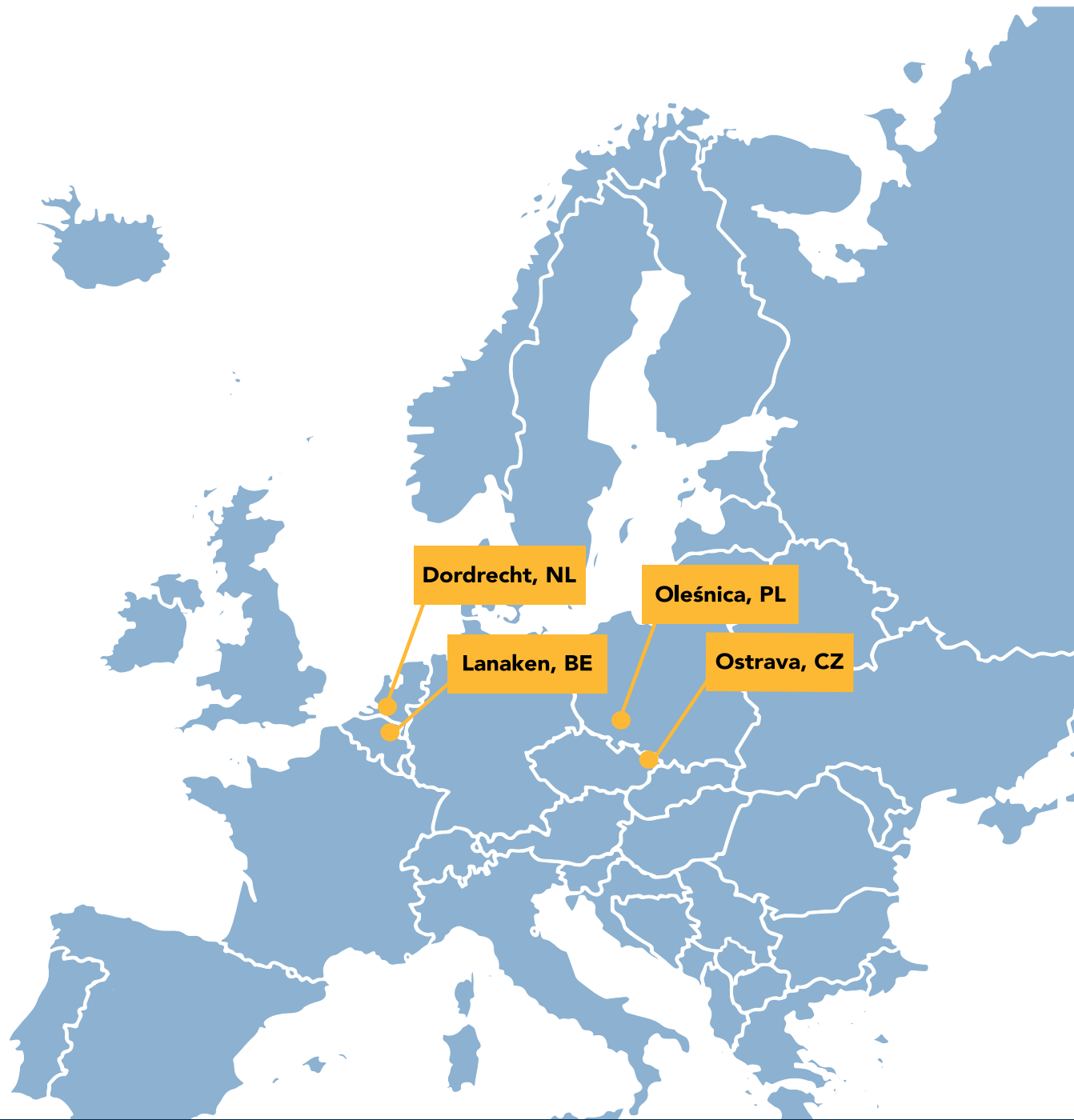
The Japanese product Pile Lock is the solution of choice for optimal water tightness. It expands up to twenty times its original volume when it comes into contact with water, enabling a waterproof solution. As with Pertex it can be applied by PalPile or delivered to the jobsite for on-site application.

CORROSION PROTECTION

- Shot blasting and coating of all major brand systems can be offered at the producing mills or the stock locations. Certification and warranties as per ACQPA or other institutions are provided.
- Hot dip galvanizing can be offered, taking the special requirements of the steel metallurgy into account.

VALUE ENGINEERING

For major projects PalPile can offer value engineering. We can propose cost effective alternatives for sheet pile walls, cofferdams and combined walls in both the tender stage and the execution phase. These alternatives are developed by experienced Civil Engineers (MSc CE) free of charge.



PALPILE

STEEL PILING PRODUCTS

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