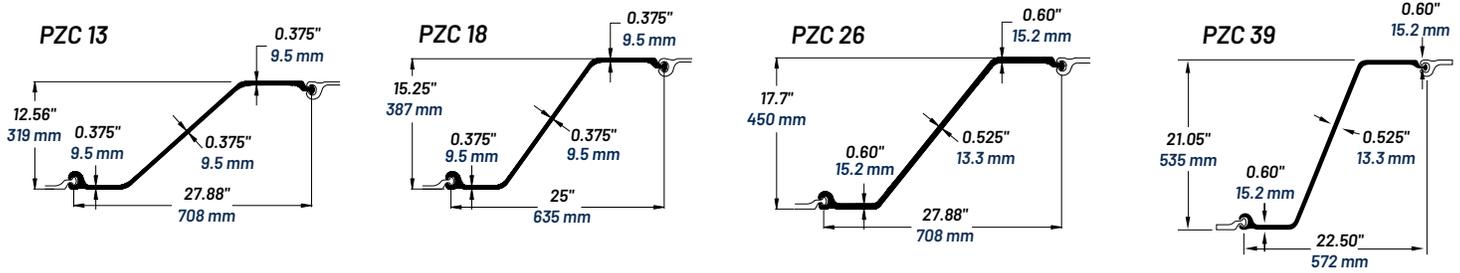




# Steel Sheet Piling

## Quick Reference Guide

# GERDAU SHEET PILING



## PZC SHEET PILING PROPERTIES

Section	PER SINGLE SECTION											PER UNIT OF WALL				
	Nominal Width in. (mm)	Wall Depth (Height) in. (mm)	Web Thickness in. (mm)	Flange Thickness in. (mm)	Cross Sectional Area in. <sup>2</sup> (cm <sup>2</sup> )	Weight lbs/ft (kg/m)	Moment of Inertia in. <sup>4</sup> (cm <sup>4</sup> )	Elastic Section Modulus in. <sup>3</sup> (cm <sup>3</sup> )	Plastic Section Modulus in. <sup>3</sup> (cm <sup>3</sup> )	Total Surface Area ft <sup>2</sup> /ft (m <sup>2</sup> /m)	Nominal Coating Area* ft <sup>2</sup> /ft (m <sup>2</sup> /m)	Cross Sectional Area in. <sup>2</sup> /ft (cm <sup>2</sup> /m)	Weight lbs/ft <sup>2</sup> (kg/m <sup>2</sup> )	Moment of Inertia in. <sup>4</sup> /ft (cm <sup>4</sup> /m)	Elastic Section Modulus in. <sup>3</sup> /ft (cm <sup>3</sup> /m)	Plastic Section Modulus in. <sup>3</sup> /ft (cm <sup>3</sup> /m)
PZC 12	27.88 708	12.52 318	0.335 8.5	0.335 8.5	13.64 88.0	46.4 69.1	324.5 13,510	51.8 850	61.51 1,008	6.1 1.86	5.6 1.71	5.87 124.3	20.0 97.6	139.7 19,080	22.3 1,200	26.47 1,423
PZC 13	27.88 708	12.56 319	0.375 9.5	0.375 9.5	14.82 95.6	50.4 75.1	353.0 14,690	56.2 920	66.93 1,097	6.1 1.86	5.6 1.71	6.38 135.1	21.7 106.0	152.0 20,760	24.2 1,300	28.81 1,549
PZC 14	27.88 708	12.60 320	0.420 10.7	0.420 10.7	16.15 104.2	55.0 81.8	381.6 15,890	60.5 1,190	72.61 990	6.1 1.86	5.6 1.71	6.95 147.2	23.7 115.5	164.3 22,440	26.0 1,400	31.25 1,680
PZC 17	25.00 635	15.21 386	0.335 8.5	0.335 8.5	13.64 88.0	46.4 69.1	491.8 20,470	64.6 1,060	76.04 1,246	6.1 1.86	5.6 1.71	6.55 138.6	22.3 108.8	236.1 32,235	31.0 1,670	36.5 1,962
PZC 18	25.00 635	15.25 387	0.375 9.5	0.375 9.5	14.82 95.6	50.4 75.1	532.2 22,150	69.8 1,145	82.2 1,347	6.1 1.86	5.6 1.71	7.12 150.6	24.2 118.2	255.5 34,890	33.5 1,800	39.46 2,121
PZC 19	25.00 635	15.30 388	0.420 10.7	0.420 10.7	16.16 104.2	55.0 81.8	576.3 23,990	75.3 1,235	89.14 1,461	6.1 1.86	5.6 1.71	7.75 164.1	26.4 128.8	276.6 37,780	36.1 1,945	42.79 2,301
PZC 25	27.88 708	17.66 449	0.485 12.3	0.560 14.2	20.40 131.6	69.4 103.3	938.7 39,070	106.3 1,740	126.77 2,077	6.65 2.03	6.15 1.87	8.78 185.9	29.9 145.9	404.1 55,190	45.7 2,455	54.56 2,933
PZC 26	27.88 708	17.70 450	0.525 13.3	0.600 15.2	21.72 140.1	73.9 110.0	994.3 41,390	112.4 1,840	134.46 2,203	6.65 2.03	6.15 1.87	9.35 197.9	31.8 155.4	428.1 58,460	48.4 2,600	57.89 3,112
PZC 28	27.88 708	17.75 451	0.570 14.5	0.645 16.4	23.22 149.8	79.0 117.6	1057 44,000	119.1 1,950	143.07 2,344	6.65 2.03	6.15 1.87	10.00 211.6	34.0 166.1	455.1 62,150	51.3 2,755	61.58 3,311
PZC 37	22.50 572	21.01 534	0.485 12.3	0.560 14.2	20.44 131.9	69.6 103.6	1,352 56,270	128.7 2,109	152.3 2,496	6.75 2.06	6.3 1.92	10.90 230.7	37.1 181.2	721.1 98,470	68.6 3,688	81.20 4,366
PZC 39	22.50 572	21.05 535	0.525 13.3	0.600 15.2	21.83 140.8	74.3 110.6	1,436 59,770	136.4 2,235	162.0 2,655	6.76 2.06	6.3 1.92	11.64 246.4	39.6 193.5	765.9 104,590	72.7 3,909	86.40 4,645
PZC 41	22.50 572	21.09 536	0.562 14.3	0.637 16.2	23.10 149.0	78.6 117.0	1,512 62,930	143.4 2,350	170.8 2,799	6.76 2.06	6.3 1.92	12.32 260.8	41.9 204.7	806.4 110,120	76.5 4,113	91.10 4,898

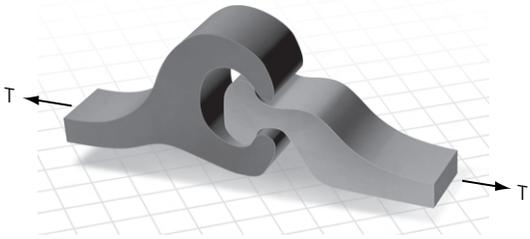
\*Both sides of sheet; excludes socket interior and ball of interlock.

Manufactured to ASTM A6 specifications.

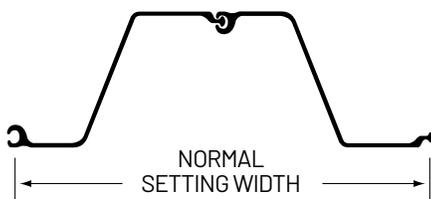
ASTM DESIGNATION**	YIELD STRENGTH		APPLICATION
	ksi	MPa	
A572	60	415	Mill Standard Produced
A588	50	345	Atmospheric Corrosion
A690	50	345	Marine Environment

\*\*Other grades available upon request

## BALL AND SOCKET INTERLOCK



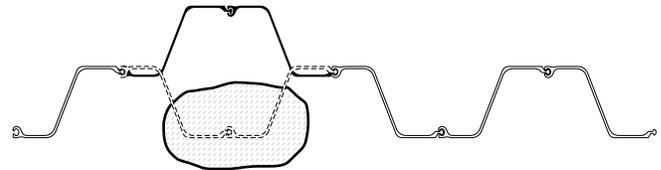
**The advantages of the ball-and-socket interlock:**  
Most rugged, durable, and flexible interlock available.  
Easier setting, driving, and extraction.  
Highest interlock "T" (tensile) strength relative to other Z-Profiles.  
Ideal for reuse in multiple projects.  
Higher "buy back/resale" value.  
Flexibility when setting-allows adjustment by interlock swing/rotation.



The reversed interlock arrangement can be utilized to bypass obstructions when they are encountered along the driving line or to shift the driving line.

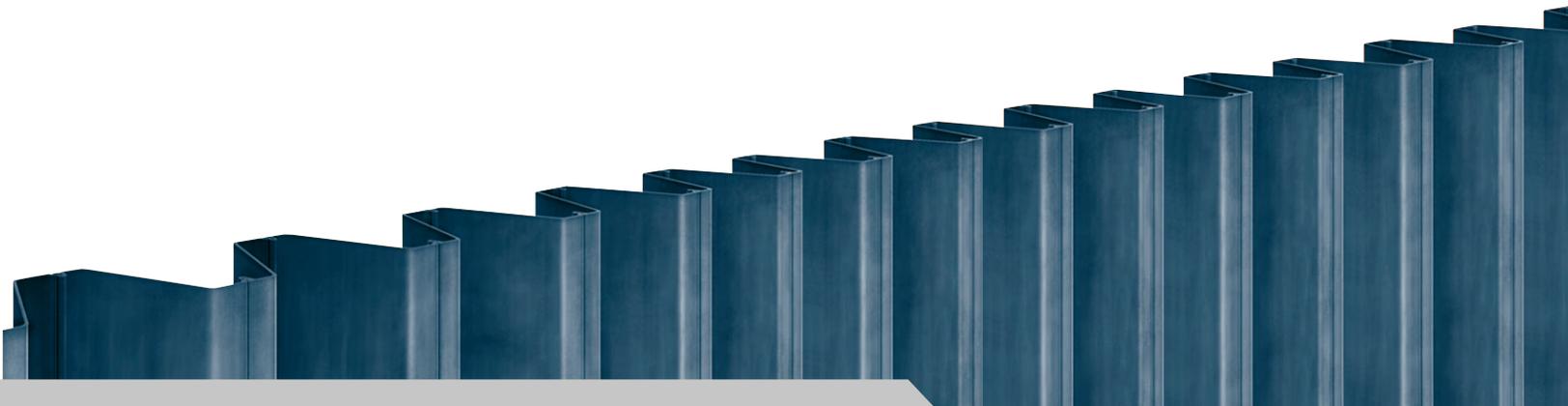


Normal Layout



Layout to Avoid an Obstruction

**100% MELTED AND MANUFACTURED IN THE UNITED STATES**



## SPECIFICATIONS

Gerdau Steel Grades for PZC and PS Profiles

### NORTH AMERICAN GRADES

ASTM	YIELD STRENGTH	
	ksi	MPa
A 572 Grade 50	50	345
A 572 Grade 60	60	415
A 572 Grade 65	65	450
A588	50	345
A 690*	50	345

A572 Grade 60 is the most economical and readily available grade. Please inquire for minimum order requirements for other grades.

\*A690 contains specified levels of Ni, Cu, and P at higher levels than the other listed grades on the table.

### GERDAU SHEET PILING GRADES AND THEIR CHEMISTRIES

	ASTM A572-50	ASTM A572-60	ASTM A572-65	ASTM A588	ASTM A690
C %	0.23 max	0.26 max	0.23 max	0.20 max	0.22 max
Mn %	1.35 maxA	1.35 maxA	1.65 maxB	0.75 - 1.35	0.60 - 0.90C
P %	0.04 max	0.04 max	0.04 max	0.030 max	0.08 - 0.15
S %	0.05 max	0.05 max	0.05 max	0.030 max	0.04 max
Si %	0.40 max	0.40 max	0.40 max	0.15 - 0.50	0.40 max
Cu %	**	**	**	0.20 - 0.40	0.50 min
Ni %	**	**	**	0.50 max	0.40 - 0.75
Cr %	**	**	**	0.40 - 0.70	**
Mo %	**	**	**	**	**
Sn %	**	**	**	**	**
V %	0.010 - 0.15*	0.010 - 0.15*	0.010 - 0.15*	0.01 - 0.10	**
Cb / Nb %	0.005 - 0.05*	0.005 - 0.05*	0.005 - 0.05*	**	**
Yield ksi [MPa]	50 min [345]	60 min [415]	65 min [450]	42 min [345]	50 min [345]
Tensile ksi [MPa]	65 min [450]	75 min [520]	80 min [550]	63 min [485]	70 min [485]
Elong %	18 @ 8 in.	16 @ 8 in.	15 @ 8 in.	18 @ 8 in.	18 @ 8 in.

\*would contain singly or in combination, dependent on production type (1, 2 or 3)

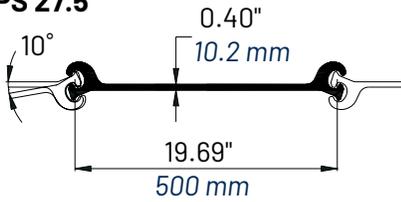
\*\*= not specified (Where \*\*is shown for copper a minimum of 0.20 may be specified).

(A) For each reduction of 0.01% below C maximum, an increase of 0.06% Mn above specified maximum is permitted, up to a maximum of 1.50%. (B) For material with thickness of 1/2" (13mm) or less, Mn maximum of 1.35% would apply when C is greater than 0.21%.

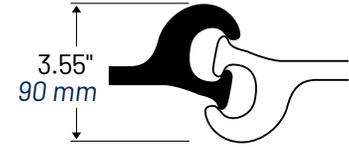
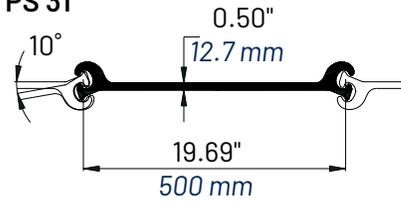
(C) For each reduction of 0.01% below C maximum, an increase of 0.06% Mn above specified maximum is permitted, up to a maximum of 1.10%.

# GERDAU SHEET PILING

PS 27.5



PS 31



## PS (FLAT SHEET) PILING PROPERTIES

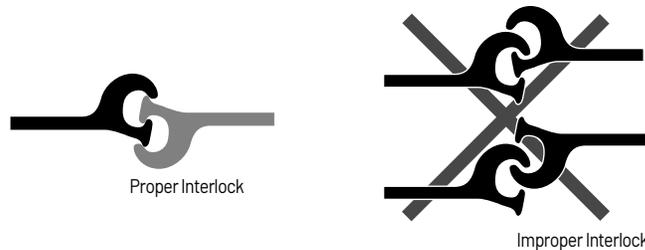
Section	Per Single Section										Per Unit of Wall			
	Nominal Width	Depth (Height)	Wall Depth (Height)	Web Thickness	Area	Weight	Moment of Inertia	Section Modulus	Total Surface Area	Nominal Coating Area*	Area	Weight	Moment of Inertia	Section Modulus
	in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. <sup>2</sup> (cm <sup>2</sup> )	lbs/ft (kg/m)	in. <sup>4</sup> (cm <sup>4</sup> )	in. <sup>3</sup> (cm <sup>3</sup> )	ft <sup>2</sup> /ft (m <sup>2</sup> /m)	ft <sup>2</sup> /ft (m <sup>2</sup> /m)	in. <sup>2</sup> /ft (cm <sup>2</sup> /m)	lbs/ft <sup>2</sup> (kg/m <sup>2</sup> )	in. <sup>4</sup> /ft (cm <sup>4</sup> /m)	in. <sup>3</sup> /ft (cm <sup>3</sup> /m)
PS 27.5	19.69	2.83	3.55	0.40	13.26	45.1	5.0	3.2	4.50	3.64	8.08	27.5	3.0	1.9
	500	72	90	10.2	85.5	67.1	207	52	1.37	1.11	171.0	134.2	414	103
PS 31	19.69	2.83	3.55	0.50	14.96	50.9	5.0	3.2	4.50	3.64	9.11	31.0	3.0	1.9
	500	72	90	12.7	96.5	75.7	207	52	1.37	1.11	192.9	151.4	414	103

\*Both sides of sheet; excludes interior of interlock.

All listed dimensions are nominal. Due to rolling practices, variations in web thickness is common. Permitted variations for such dimensions are not addressed.

GRADE*	MINIMUM INTERLOCK STRENGTH <sup>(1)</sup>	MINIMUM SWING <sup>(2)</sup>
A572-50	20 kips/in. (3,500 kN/m)	10 degrees
A572-60	24 kips/in. (4,200 kN/m)	10 degrees

\*\*Other grades available upon request

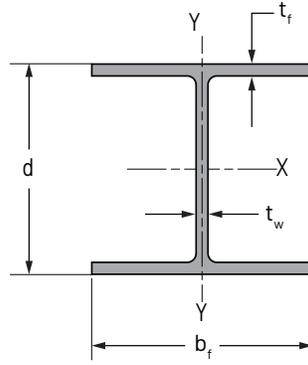


(1) These minimum ultimate interlock strengths assume proper interlocking of sheets. To verify the strength of PS Sheet Piling, consider both yielding of the web and failure of the interlock.

(2) Swing reduces 1.5 degrees for each 10 feet (3 meters) in length over 70 feet (21 meters).

As a general rule, Gerdau advises against interlocking PS sections with other producers' section(s). Gerdau PS 27.5 and PS 31 can be interlocked together. PS and Z-Piling sections should not be interlocked together.

# GERDAU SHEET PILING



## H-Pile Properties

Section	Weight lb/ft (kg/m)	Area A in. <sup>2</sup> (cm <sup>2</sup> )	Depth d in. (mm)	Web b <sub>f</sub> in. (mm)	THICKNESS		Coating Area ft <sup>2</sup> /ft <sup>2</sup> (m <sup>2</sup> /m <sup>2</sup> )	PROPERTIES							
					Flange t <sub>f</sub> in. (mm)	Web t <sub>w</sub> in. (mm)		AXIS X-X				AXIS Y-Y			
								I in. <sup>4</sup> (cm <sup>4</sup> )	S in. <sup>3</sup> (cm <sup>3</sup> )	Z in. <sup>3</sup> (cm <sup>3</sup> )	r in. (mm)	I in. <sup>4</sup> (cm <sup>4</sup> )	S in. <sup>3</sup> (cm <sup>3</sup> )	Z in. <sup>3</sup> (cm <sup>3</sup> )	r in. (mm)
HP 8 HP 200	36	10.6	8.02	8.16	0.445	0.445	3.92	119	29.8	33.6	3.36	40.3	9.88	15.2	1.95
	54	68.4	204	207	11.3	11.3	1.21	4980	488	552	8.53	1670	162	249	4.95
HP 10 HP 250	42	12.4	9.70	10.10	0.420	0.415	4.83	210	43.4	48.3	4.13	71.7	14.2	21.8	2.41
	62	79.8	246	256	10.7	10.5	1.50	8750	711	792	10.5	3000	234	358	6.13
	57	16.7	9.99	10.20	0.565	0.565	4.91	294	58.8	66.5	4.18	101	19.7	30.3	2.45
	85	109.0	254	259	14.4	14.4	1.50	12300	968	1090	10.6	4230	325	500	6.23
HP 12 HP 310	53	15.5	11.80	12.00	0.435	0.435	5.82	393	66.7	74.0	5.03	127	21.1	32.2	2.86
	79	99.8	299	306	11.0	11.0	1.80	16300	1090	1210	12.8	5260	344	525	7.26
	63	18.4	11.90	12.10	0.515	0.515	5.86	472	79.1	88.3	5.06	153	25.3	38.7	2.88
	94	119.0	303	308	13.1	13.1	1.81	19600	1300	1450	12.9	6390	415	635	7.33
	74	21.8	12.10	12.20	0.610	0.605	5.91	569	93.8	105	5.11	186	30.4	46.6	2.92
	110	141.0	308	310	15.5	15.4	1.83	23700	1540	1730	13.0	7710	497	763	7.40
	84	24.6	12.30	12.30	0.685	0.685	5.97	650	106	120	5.14	213	34.6	53.2	2.94
	125	159.0	312	312	17.4	17.4	1.84	27000	1730	1960	13.0	8820	566	870	7.45
	89	25.9	12.36	12.32	0.720	0.720	6.04	689	111.6	126.3	5.16	225	36.5	56.2	2.94
	132	167	314	313	18.3	18.3	1.84	28700	1830	2070	13.1	9370	599	922	7.48
	102	29.9	12.56	12.64	0.819	0.819	6.17	811	129.3	147.6	5.20	276	43.7	67.1	3.04
	152	193	319	321	20.8	20.8	1.88	33800	2120	2420	13.2	11500	716	1100	7.71
HP 14 HP 360	117	34.4	12.76	12.87	0.929	0.929	6.26	946	148.2	170.8	5.24	331	51.4	79.3	3.11
	174	222	324	327	23.6	23.6	1.91	39400	2430	2800	13.3	13800	843	1300	7.89
	73	21.4	13.60	14.60	0.505	0.505	6.96	729	107	118	5.84	261	35.8	54.6	3.49
	108	138	346	370	12.8	12.8	2.15	30300	1750	1940	14.8	10800	585	891	8.86
	89	26.1	13.80	14.70	0.615	0.615	7.02	904	131	146	5.88	326	44.3	67.7	3.53
132	168	351	373	15.6	15.6	2.16	37500	2140	2380	14.9	13500	724	1110	8.96	
	102	30.1	14.00	14.80	0.705	0.705	7.06	1050	150	169	5.92	380	51.4	78.8	3.56
	152	194	356	376	17.9	17.9	2.18	43900	2470	2770	15.0	15900	845	1290	9.05
	117	34.4	14.20	14.90	0.805	0.805	7.12	1220	172	194	5.96	443	59.5	91.4	3.59
174	222	361	378	20.4	20.4	2.19	50800	2820	3180	15.2	18400	973	1490	9.11	
HP 16 HP 410	88	25.8	15.30	15.70	0.540	0.540	7.52	1110	145	161	6.56	349	44.5	68.2	3.68
	131	167	389	399	13.7	13.7	2.29	46201	2376	2638.3	16.7	14526	729	1117.6	9.35
	101	29.9	15.50	15.80	0.625	0.625	7.56	1300	168	187	6.59	412	52.2	80.1	3.71
	150	193	394	401	15.9	15.9	2.30	54110	2753	3064.4	16.7	17149	855	1312.6	9.42
	121	35.8	15.80	15.90	0.750	0.750	7.62	1590	201	226	6.66	504	63.4	97.6	3.75
	180	231	401	404	19.1	19.1	2.32	66180	3294	3703.5	16.9	20978	1039	1599.4	9.53
	141	41.7	16.00	16.00	0.875	0.875	7.69	1870	234	264	6.70	599	74.9	116	3.79
210	269	406	406	22.2	22.2	2.34	77835	3835	4326.2	17.0	24932	1227	1900.9	9.83	