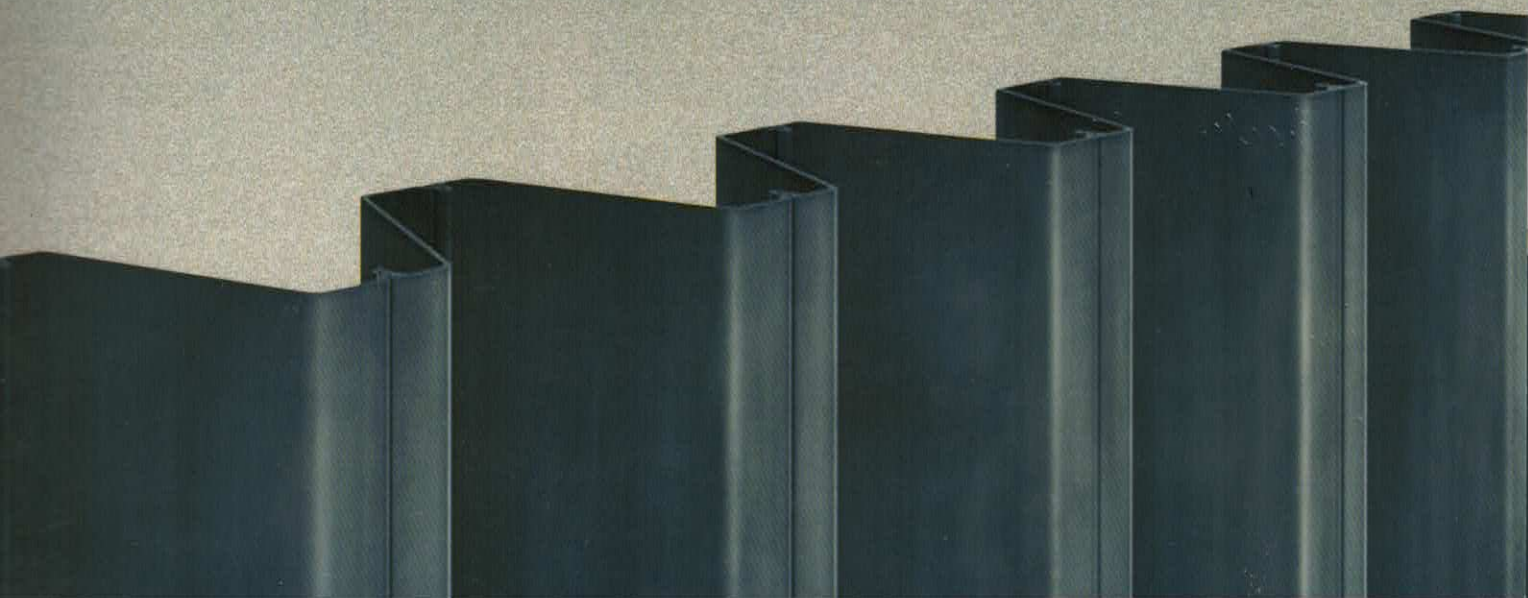


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STEEL SHEET PILING

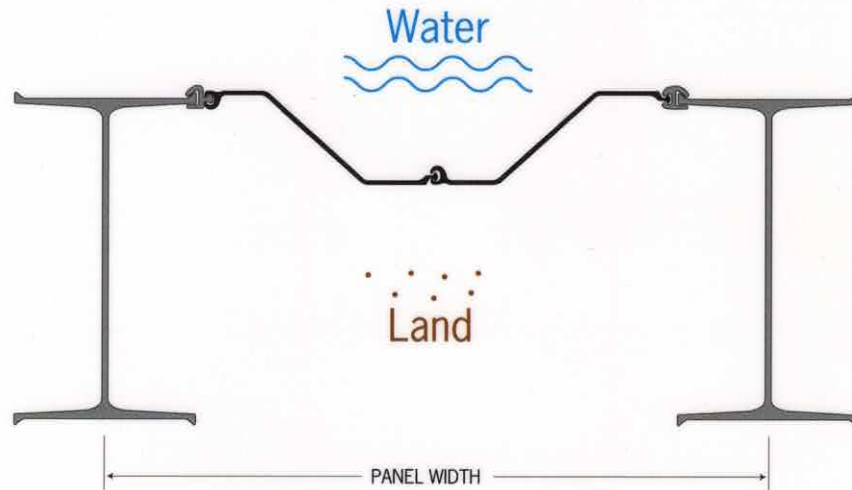
2006



QUICK REFERENCE

PZC-B High Section Modulus Systems

PZC-B systems are combinations of beams and PZC sheet piling designed to achieve higher section modulus requirements. The main load-carrying elements are the beams (Peine Beams, as shown below, or standard Wide Flange Beams). The intermediate sheet piling, along with extruded connectors, serves to close the face of the wall between the beams.



The following table represents a **limited overview of possible PZC-B combinations**. Please refer to www.sheet-piling.com for an extensive solution list and complete details on other PZC-B combinations. This website also has tools available to estimate material requirements. For further assistance, please contact Chaparral directly.

Section	Solution Type	Section Modulus		Width			Weight*			Moment of Inertia	Nominal Coating Area in Panel Width**		Beam	Sheet	Connector
		in. ³ /ft. of wall (cm ³ /m. of wall)	in. (mm)	lbs/ft ² (kg/m ²)			in. ⁴ /lin. ft. of wall (cm ⁴ /lin. m. of wall)	ft ² /lin. ft. of panel (m ² /lin. m. of panel)	ft ² /lin. ft. of panel (m ² /lin. m. of panel)						
				60%	80%	100%									
PZC-B 37		69.6	69.3	32.8	36.9	41.0	1,144	6.94	20.95	W 33 X 118	PZC 13	BBS M&F			
		3,740	1760	159.9	180.0	200.0	156,200	2.12	6.39						
PZC-B 51		95.1	76.0	36.0	39.8	43.6	1,685	7.76	24.16	PSp 900	PZC 13	PBS M&F			
		5,110	1932	175.9	194.4	213.0	230,000	2.37	7.36						
PZC-B 57		106.5	69.8	41.4	45.5	49.6	1,925	6.99	21.60	W 36 X 170	PZC 13	BBS M&F			
		5,720	1774	202.3	222.2	242.1	262,900	2.13	6.58						
PZC-B 68		126.2	76.0	40.8	44.6	48.4	2,494	7.76	24.75	PSp 1013	PZC 13	PBS M&F			
		6,790	1932	199.1	217.7	236.3	340,600	2.37	7.54						
PZC-B 71		131.7	73.6	44.1	47.9	51.8	2,546	7.30	23.19	W 40 X 199	PZC 13	BBS M&F			
		7,080	1868	215.2	234.0	252.9	347,600	2.23	7.07						
PZC-B 89		165.7	76.0	50.0	53.8	57.6	3,379	7.76	24.78	PSp 1035S	PZC 13	PBS M&F			
		8,910	1932	244.2	262.8	281.4	461,500	2.37	7.55						
PZC-B 100		185.6	73.6	56.7	60.6	64.5	3,684	7.30	23.30	W 40 X 277	PZC 13	BBS M&F			
		9,980	1871	277.0	295.9	314.7	503,000	2.23	7.10						
PZC-B 120		222.9	89.1	64.4	67.6	70.9	4,722	9.53	28.10	PSp 1016 Double	PZC 18	PBS M&F			
		11,990	2263	314.4	330.3	346.1	644,900	2.90	8.56						
PZC-B 147		273.3	94.9	77.7	82.0	86.2	5,864	10.08	29.23	PSp 1035S Double	PZC 26	PBS M&F			
		14,690	2410	379.6	400.3	421.0	800,800	3.07	8.91						

*Length of intermediate sheet piling sections as a percent of the beam's length.

**Excludes socket interior and ball of interlock.

NOTE: Section modulus calculation of the wall does not include the connectors interlocked with the sheet piling.

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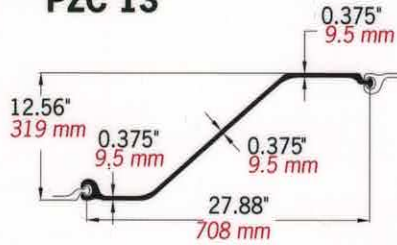
SHEET PILING PROPERTIES

PZC

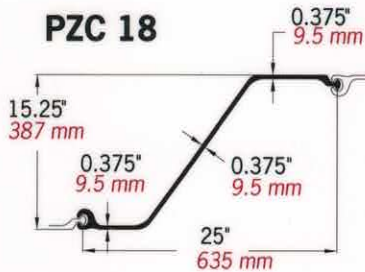
Section	Section Modulus* in. ³ /ft (cm ³ /m)	Nominal Width in. (mm)	Weight* lbs/ft ² (kg/m ²)	Moment of Inertia* in. ⁴ /ft (cm ⁴ /m)
PZC 12	22.3	27.88	20.0	139.7
	1,200	708	97.6	19,080
PZC 13	24.2	27.88	21.7	152.0
	1,300	708	106.0	20,755
PZC 14	26.0	27.88	23.7	164.3
	1,400	708	115.5	22,445
PZC 17	31.0	25.00	22.3	236.1
	1,670	635	108.8	32,235
PZC 18	33.5	25.00	24.2	255.5
	1,800	635	118.2	34,890
PZC 19	36.1	25.00	26.4	276.6
	1,945	635	128.8	37,780
PZC 25	45.7	27.88	29.9	404.1
	2,455	708	145.9	55,190
PZC 26	48.4	27.88	31.8	428.1
	2,600	708	155.4	58,460
PZC 28	51.3	27.88	34.0	455.1
	2,755	708	166.1	62,145
PZC 34	63.8	24.80	37.5	634.8
	3,430	630	183.2	86,685
PZC 36	67.0	24.80	39.6	667.4
	3,600	630	193.2	91,140
PZC 38	70.7	24.80	42.0	706.3
	3,800	630	205.1	96,450

*Per Unit of Wall

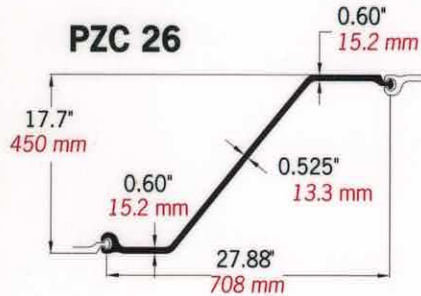
PZC 13



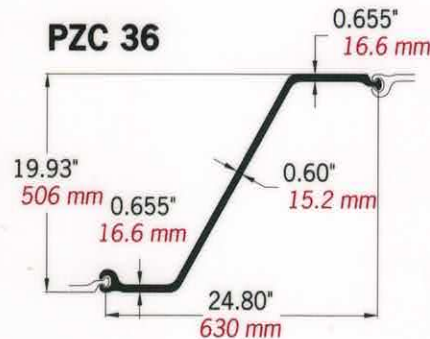
PZC 18



PZC 26



PZC 36



PZ

Section	Section Modulus* in. ³ /ft (cm ³ /m)	Nominal Width in. (mm)	Weight* lbs/ft ² (kg/m ²)	Moment of Inertia* in. ⁴ /ft (cm ⁴ /m)
PZ 22	18.4	22.00	22.6	85.1
	990	559	110.6	11,620
PZ 27	31.0	18.00	27.7	187.3
	1,660	457	135.1	25,580
PZ 35	48.9	22.64	35.0	369.5
	2,635	575	170.8	50,455
PZ 40	61.3	19.69	40.0	502.7
	3,300	500	195.2	68,645

*Per Unit of Wall

PZ sheet piling is a traditional sheet piling profile produced in North America. These sections are named for weight. For example, PZ 35 weighs 35 pounds per square foot of wall.

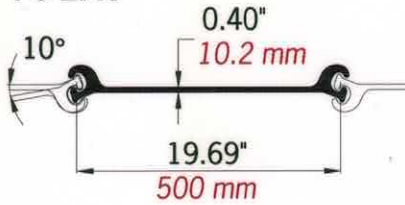
PZC sections are the "latest generation" of sheet piling profiles and were developed to be lighter, wider, and stronger than the older traditional PZ sections. PZC profiles are named for their strength in metric designations. For example, PZC 18 has a Section Modulus of 1,800 cm³/meter. **PZC profiles should always be the designer's first choice in order to provide the end user the most efficient retention wall with the most efficient ratio of section modulus to weight.**



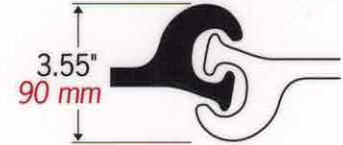
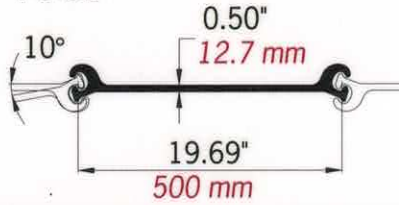
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PS (FLAT SHEET) PILING PROPERTIES

PS 27.5



PS 31

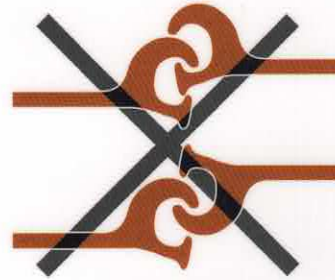


Section	Nominal Width in. (mm)	Depth (Height) in. (mm)	Wall Depth (Height) in. (mm)	Web Thickness in. (mm)	Per Single Section						Per Unit of Wall			
					Area in. ² (cm ²)	Weight lbs/ft (kg/m)	Moment of Inertia in. ⁴ (cm ⁴)	Section Modulus in. ³ (cm ³)	Total Surface Area ft ² /ft (m ² /m)	Nominal Coating Area* ft ² /ft (m ² /m)	Area in. ² /ft (cm ² /m)	Weight lbs/ft ² (kg/m ²)	Moment of Inertia in. ⁴ /ft (cm ⁴ /m)	Section Modulus in. ³ /ft (cm ³ /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

*Excludes interior of interlock.



Proper Interlock



Improper Interlock

Grade	Minimum Interlock Strength ⁽¹⁾	Minimum Swing ⁽²⁾
A328	16 kips/in. (2,800 kN/m)	10 degrees
A572-50	20 kips/in. (3,500 kN/m)	10 degrees
A572-65	24 kips/in. (4,200 kN/m)	10 degrees

Higher interlock strengths are available but obtainable swing will be reduced in interlock strengths above 24 kips/in (4,200 kN/m).

NOTE: INTERLOCKING OF CHAPARRAL PS SECTIONS WITH ANOTHER PRODUCER'S SECTION SHOULD NEVER BE CONSIDERED. PS and Z-Piling sections should not be interlocked together. Chaparral PS 27.5 and PS 31 can be interlocked with each other.

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

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

CHAPARRAL STEEL

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