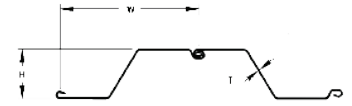


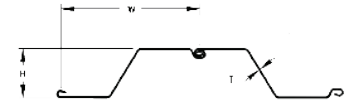
## FURTHER DOMESTIC US OPTIONS

### ESC-Z SERIES



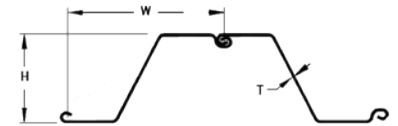
SECTION	WIDTH	HEIGHT	THICKNESS	CROSS SECTIONAL AREA	WEIGHT		ELASTIC SECTION MODULUS	MOMENT OF INERTIA	COATING AREA *(both side per pile)
	(w)	(h)	(t)		Per Pile	Per Wall			
	in	in	in	in <sup>2</sup> /ft	lb/ft	lb/ft <sup>2</sup>	in <sup>3</sup> /ft	in <sup>4</sup> /ft	ft <sup>2</sup> /ft
	mm	mm	mm	cm <sup>2</sup> /m	kg/m	kg/m <sup>2</sup>	cm <sup>3</sup> /m	cm <sup>4</sup> /m	m <sup>2</sup> /m
ESC-Z55	24.0 610	8.64 219	0.217 5.5	7.57 48.8	25.8 38.4	12.9 63.0	11.4 613	49.7 6,790	5.20 1.59
ESC-Z60	24.0 610	8.66 220	0.236 6.0	8.26 53.3	28.2 42.0	14.1 68.8	12.4 667	54.2 7,400	5.20 1.59
ESC-Z65	24.0 610	8.68 220	0.256 6.5	8.95 57.7	30.6 45.5	15.3 74.7	13.4 720	58.7 8,010	5.20 1.59
ESC-Z70	24.0 610	8.70 221	0.276 7.0	9.64 62.2	33.0 49.1	16.5 80.6	14.4 774	63.2 8,630	5.20 1.59
ESC-Z75	24.0 610	8.72 221	0.295 7.5	10.3 66.5	35.2 52.4	17.6 85.9	15.6 839	67.7 9,250	5.20 1.59

### ESC-EZ SERIES



SECTION	WIDTH	HEIGHT	THICKNESS	CROSS SECTIONAL AREA	WEIGHT		ELASTIC SECTION MODULUS	MOMENT OF INERTIA	COATING AREA *(both side per pile)
	(w)	(h)	(t)		Per Pile	Per Wall			
	in	in	in	in <sup>2</sup> /ft	lb/ft	lb/ft <sup>2</sup>	in <sup>3</sup> /ft	in <sup>4</sup> /ft	ft <sup>2</sup> /ft
	mm	mm	mm	cm <sup>2</sup> /m	kg/m	kg/m <sup>2</sup>	cm <sup>3</sup> /m	cm <sup>4</sup> /m	m <sup>2</sup> /m
ESC-EZ75	25.0 635	10.72 272	0.295 7.5	11.3 73.0	38.5 57.4	18.6 90.4	19.20 1,030	103 14,100	5.6 1.71
ESC-EZ80	25.0 635	10.75 273	0.315 8.0	12.1 77.9	41.1 61.2	19.8 96.4	20.50 1,100	110 15,000	5.6 1.71
ESC-EZ88	25.0 635	10.78 274	0.344 8.75	13.2 85.1	44.9 66.8	21.6 105	22.4 1,200	121 16,500	5.6 1.71
ESC-EZ95	25.0 635	10.81 275	0.375 9.5	14.4 92.7	48.9 72.8	23.5 115	24.4 1,310	131 17,900	5.6 1.71

### ESC-XZ SERIES



SECTION	WIDTH	HEIGHT	THICKNESS	CROSS SECTIONAL AREA	WEIGHT		ELASTIC SECTION MODULUS	MOMENT OF INERTIA	COATING AREA *(both side per pile)
	(w)	(h)	(t)		Per Pile	Per Wall			
	in	in	in	in <sup>2</sup> /ft	lb/ft	lb/ft <sup>2</sup>	in <sup>3</sup> /ft	in <sup>4</sup> /ft	ft <sup>2</sup> /ft
	mm	mm	mm	cm <sup>2</sup> /m	kg/m	kg/m <sup>2</sup>	cm <sup>3</sup> /m	cm <sup>4</sup> /m	m <sup>2</sup> /m
ESC-XZ85	25.0 635	14.06 357	0.335 8.5	13.6 87.9	46.4 69.0	22.3 109	30.2 1,630	212 29,000	6.03 1.84
ESC-XZ90	25.0 635	14.09 358	0.354 9.0	14.4 93.0	48.9 72.7	23.5 115	31.8 1,710	225 30,800	6.03 1.84

\*excludes internal section of interlock

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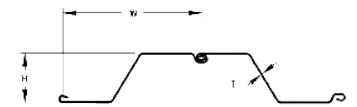


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## ESC-XZ SERIES

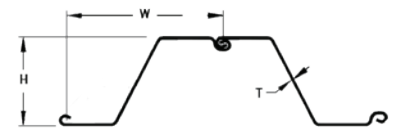
SECTION	WIDTH	HEIGHT	THICKNESS	CROSS SECTIONAL AREA	WEIGHT		ELASTIC SECTION MODULUS	MOMENT OF INERTIA	COATING AREA *(both side per pile)
	(w)	(h)	(t)		Per Pile	Per Wall			
	in	in	in		lb/ft	lb/ft <sup>2</sup>			
	mm	mm	mm	kg/m	kg/m <sup>2</sup>	in <sup>3</sup> /ft	in <sup>4</sup> /ft	ft <sup>2</sup> /ft	
	mm	mm	mm	cm <sup>2</sup> /m	kg/m	kg/m <sup>2</sup>	cm <sup>3</sup> /m	cm <sup>4</sup> /m	m <sup>2</sup> /m
ESC-XZ95	25.0 635	14.12 359	0.375 9.5	15.2 98.2	51.7 76.9	24.8 121	33.5 1,800	237 32,400	6.03 1.84
ESC-XZ100	25.0 635	14.15 360	0.394 10.0	15.9 103.0	54.2 80.7	26.0 127	35.3 1,900	250 34,200	6.03 1.84
ESC-XZ105	25.0 635	14.17 360	0.413 10.5	16.7 108.0	56.9 84.7	27.3 133	37.1 2,000	263 35,900	6.03 1.84

## ESC-DZ SERIES



SECTION	WIDTH	HEIGHT	THICKNESS	CROSS SECTIONAL AREA	WEIGHT		ELASTIC SECTION MODULUS	MOMENT OF INERTIA	COATING AREA *(both side per pile)
	(w)	(h)	(t)		Per Pile	Per Wall			
	in	in	in		lb/ft	lb/ft <sup>2</sup>			
	mm	mm	mm	kg/m	kg/m <sup>2</sup>	in <sup>3</sup> /ft	in <sup>4</sup> /ft	ft <sup>2</sup> /ft	
	mm	mm	mm	cm <sup>2</sup> /m	kg/m	kg/m <sup>2</sup>	cm <sup>3</sup> /m	cm <sup>4</sup> /m	m <sup>2</sup> /m
ESC-DZ80	29.00 737	16.44 418	0.315 8.0	14.47 93.3	49.20 73	20.40 99	31.96 1,718	262.72 35,876	6.80 2.08
ESC-DZ85	29.00 737	16.46 418	0.335 8.5	15.35 99.0	52.20 78	21.60 106	33.86 1,820	278.67 38,055	6.80 2.08
ESC-DZ90	29.00 737	16.48 419	0.354 9.0	16.23 104.7	55.20 82	22.90 112	35.75 1,922	294.58 40,227	6.80 2.08
ESC-DZ95	29.00 737	16.50 419	0.375 9.5	17.15 110.6	58.40 87	24.20 118	37.72 2,028	311.22 42,500	6.80 2.08
ESC-DZ100	29.00 737	16.52 420	0.394 10.0	17.98 116.0	61.20 91	25.30 124	39.49 2,123	326.23 44,549	6.80 2.08
ESC-DZ105	29.00 737	16.54 420	0.413 10.5	18.85 121.6	64.20 95	26.50 130	41.35 2,223	341.98 46,700	6.80 2.08

## ESC-JZ SERIES



SECTION	WIDTH	HEIGHT	THICKNESS	CROSS SECTIONAL AREA	WEIGHT		ELASTIC SECTION MODULUS	MOMENT OF INERTIA	COATING AREA *(both side per pile)
	(w)	(h)	(t)		Per Pile	Per Wall			
	in	in	in		lb/ft	lb/ft <sup>2</sup>			
	mm	mm	mm	kg/m	kg/m <sup>2</sup>	in <sup>3</sup> /ft	in <sup>4</sup> /ft	ft <sup>2</sup> /ft	
	mm	mm	mm	cm <sup>2</sup> /m	kg/m	kg/m <sup>2</sup>	cm <sup>3</sup> /m	cm <sup>4</sup> /m	m <sup>2</sup> /m
ESC-JZ112	26.5 673	16.44 418	0.441 11.2	20.1 129.7	68.2 101	30.9 151	45.3 2,430	374 51,100	6.51 1.99
ESC-JZ120	26.5 673	16.47 418	0.472 12.0	21.5 138.7	73.0 109	33.0 161	48.5 2,610	401 54,700	6.51 1.99
ESC-JZ127	26.5 673	16.50 419	0.500 12.7	22.7 146.5	77.3 115	35.0 171	51.4 2,760	424 57,900	6.51 1.99

\*excludes internal section of interlock

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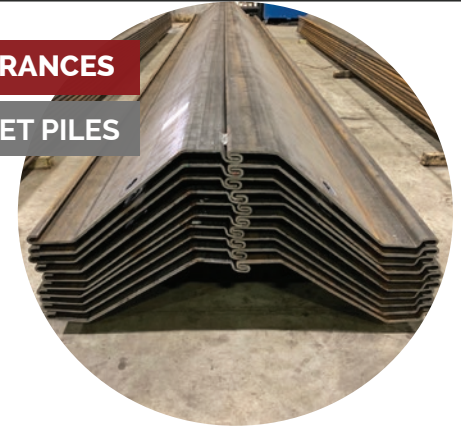
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## STEEL GRADES & MANUFACTURING TOLERANCES

### COLD ROLLED & COLD FORMED SHEET PILES

#### MANUFACTURING TOLERANCES

COMPONENT	BS EN1024-9	ASTM A6	NOMINAL THICKNESS	TOLERANCE
Mass	± 5%	±2.5%	0.197" / 5mm	± 0.0114" / 0.29mm
Length	± 2.0" / 50mm	+ 5.0" / 127mm	0.236" / 6mm	± 0.0122" / 0.31mm
Height (≤ 7.87" / 200mm)	± 0.157" / 4.0mm		0.315" / 8mm	± 0.0138" / 0.35mm
Height (> 7.87" / 200mm & ≤ 11.8" / 300mm)	± 0.236" / 6.0mm		0.354" / 9mm	± 0.0157" / 0.40mm
Height (> 11.8" / 300mm & ≤ 15.8" / 400mm)	± 0.315" / 8.0mm		0.393" / 10mm	± 0.0157" / 0.40mm
Height (> 15.8" / 400mm)	± 0.394" / 10.0mm		0.472" / 12mm	± 0.0169" / 0.43mm
Width of Single Pile	± 2% of width		0.512" / 13mm	± 0.0181" / 0.46mm
Width of Double Z or Wide U	± 3% of width		0.591" / 15mm	± 0.0181" / 0.46mm
Squareness of Ends	2% of width		N/A	
Straightness	±0.2% of the length			
Squareness of Ends	± 2% of the width			



#### SHEET PILE MARKING

ESC is able to apply adhesive stickers to its products to provide useful information such as destination, order number, project identifier, client name and others. To enable good traceability, material heat number & pile specification is included as standard.



#### STEEL GRADES

CLASSIFICATION		MECHANICAL PROPERTIES					CHEMICAL COMPOSITION % (MAX)					
		MINIMUM YIELD STRENGTH		ULTIMATE TENSILE STRENGTH		MINIMUM ELONGATION	IMPACT STRENGTH (CHARPY)	C	Si	Mn	P	S
		ksi	MPa	ksi	MPa	%						
ASTM A36-14	A36	36	250	58-80	400-550	23	-	0.26	0.40	-	0.040	0.050
ASTM A572-2013a	A572 Gr.42	42	290	≥ 60	≥415	20	-	0.21	0.40	1.35	0.040	0.050
	A572 Gr.50	50	345	≥ 65	≥450	18	-	0.23	0.40	1.30	0.040	0.050
	A572 Gr.55	55	380	≥ 60	≥485	17	-	0.25	0.40	1.35	0.030	0.030
	A572 Gr.60	60	413	≥ 75	≥517	16	-	0.26	0.40	1.35	0.040	0.050
	A572 Gr.65	65	450	≥ 80	≥550	15	-	0.23	0.40	1.35	0.030	0.030
ASTM A588	A588 Gr.50A	50	345	≥ 70	≥485	18	-	0.19	0.30-0.65	0.80-1.25	0.040	0.050
	A588 Gr.50B	50	345	≥ 70	≥485	18	-	0.20	0.15-0.50	0.75-1.35	0.040	0.050
ASTM A690	A690 Gr.50	50	345	≥ 70	>485	21	-	0.22	0.40	0.60-0.90	0.08-.015	0.040
ASTM A871	A871 Gr.60 Type I	60	415	≥ 75	>520	16	15ft-lb [20J] @ 0°F [-18°C] for t≤0.5" [12mm] 15ft-lb [20J] @ -20°F [-29°C] for t>0.5" [12mm]	0.19	0.30-0.65	0.8-1.35	0.030	0.030
	A871 Gr.60 Type II	60	415	≥ 75	>520	16		0.20	0.15-0.50	0.75-1.35	0.030	0.030
	A871 Gr.60 Type IV	60	415	≥ 75	>520	16		0.17	0.25-0.50	0.50-1.20	0.030	0.030
	A871 Gr.65 Type I	65	450	≥ 80	>550	15	15ft-lb [20J] @ 0°F [-18°C] for t≤0.5" [12mm] 15ft-lb [20J] @ -20°F [-29°C] for t>0.5" [12mm]	0.19	0.30-0.65	0.80-1.35	0.030	0.030
	A871 Gr.65 Type II	65	450	≥ 80	>550	15		0.20	0.15-0.50	0.75-1.35	0.030	0.030
	A871 Gr.65 Type IV	65	450	≥ 80	>550	15		0.17	0.25-0.50	0.50-1.20	0.030	0.030
ASTM A1018	A1018 Gr.50 Class1	50	340	≥ 65	>450	16	-	0.23	-	1.50	0.040	0.040
	A1018 Gr.50 Class2	50	340	≥ 60	>410	16	-	0.15	-	1.50	0.040	0.040
	A1018 Gr.60 Class1	60	410	≥ 75	>520	14	-	0.26	-	1.50	0.040	0.040
	A1018 Gr.60 Class2	60	410	≥ 70	>480	14	-	0.15	-	1.50	0.040	0.040
	A1018 Gr.70 Class1	70	480	≥ 85	>590	10	-	0.26	-	1.65	0.040	0.040
	A1018 Gr.70 Class2	70	480	≥ 80	>550	10	-	0.15	-	1.65	0.040	0.040
	A1018 Gr.80	80	550	≥ 90	>620	10	-	0.15	-	1.65	0.025	0.035

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