

# SHEET PILE TECHNICAL SPECIFICATION

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## ESC-BP SERIES



Interlocking Clutch



SECTION	WIDTH	HEIGHT	THICKNESS	CROSS SECTIONAL AREA	WEIGHT		ELASTIC SECTION MODULUS	MOMENT OF INERTIA	COATING AREA
	(w) in mm	(h) in mm	(t) in mm	in <sup>2</sup> /ft cm <sup>2</sup> /m	Per Pile lb/ft kg/m	Per Wall lb/ft <sup>2</sup> kg/m <sup>2</sup>	in <sup>3</sup> /ft cm <sup>3</sup> /m	in <sup>4</sup> /ft cm <sup>4</sup> /m	ft <sup>2</sup> /ft m <sup>2</sup> /m
ESC-6BP-S	41.85 1,063	11.46 291	0.23 5.75	4.33 91.8	51.48 76.60	14.77 72.10	11.16 600	66.80 9,150	9.35 2.85
ESC-7BP-S	40.79 1,036	12.64 321	0.23 5.75	4.45 94.2	51.48 76.60	15.13 73.90	13.02 700	82.78 11,340	9.35 2.85
ESC-8BP-S	39.45 1,002	13.86 352	0.23 5.75	4.60 97.4	51.48 76.60	15.65 76.40	14.88 800	101.47 13,900	9.35 2.85
ESC-9BP-S	37.44 951	14.65 372	0.23 5.75	4.84 102.6	51.48 76.60	16.51 80.60	16.74 900	121.25 16,610	9.35 2.85
ESC-10BP-S	35.55 903	15.31 389	0.23 5.75	5.10 108.1	51.48 76.60	17.39 84.90	18.60 1,000	140.53 19,250	9.35 2.85
ESC-11BP-S	33.54 852	15.91 404	0.23 5.75	5.40 114.5	51.48 76.60	18.41 89.90	20.46 1,100	161.55 22,130	9.35 2.85
ESC-12BP-S	31.73 806	16.34 415	0.23 5.75	5.71 121	51.48 76.60	19.46 95.00	22.32 1,200	181.48 24,860	9.35 2.85
ESC-13BP	48.58 1,234	17.44 443	0.31 7.75	5.54 117.4	72.37 107.69	17.88 87.30	24.74 1,330	206.01 28,220	11.38 3.47
ESC-13BP-S	29.905 759	16.745 425	0.227 5.75	6.07 128.5	51.48 76.60	20.66 100.9	24 1,310	203 27,820	9.35 2.85
ESC-14BP	47.44 1,205	17.95 456	0.31 7.75	5.67 120.2	72.37 107.69	18.31 89.40	26.04 1,400	224.04 30,690	11.38 3.47
ESC-14BP-S	28.289 718	17.06 433	0.227 5.75	6.42 135.9	51.48 76.60	21.83 106.6	26 1,410	223 30,550	9.35 2.85
ESC-15BP	45.98 1,168	18.50 470	0.31 7.75	5.85 124	72.37 107.69	19.93 97.30	27.90 1,500	247.84 33,950	11.38 3.47
ESC-16BP-S	57.051 1,448	21.237 539	0.305 7.75	5.48 116.0	84.87 126.30	17.86 87.2	30 1,610	300 41,080	13.35 4.07
ESC-16BP	44.49 1,130	19.06 484	0.31 7.75	6.05 128.2	72.37 107.69	19.52 95.30	29.76 1,600	273.09 37,410	11.38 3.47
ESC-17BP	42.91 1,090	19.61 498	0.31 7.75	6.27 132.8	72.37 107.69	20.23 98.80	31.81 1,710	299.96 41,090	11.38 3.47
ESC-18BP-S	54 1,376	22.419 569	0.305 7.75	5.77 122.1	87.87 126.30	18.8 91.80	33 1,790	355 48,590	13.35 4.07
ESC-18BP	41.65 1,058	20.00 508	0.31 7.75	6.46 136.9	72.37 107.69	20.85 101.80	33.48 1,800	322.59 44,190	11.38 3.47
ESC-19BP	40.35 1,025	20.35 517	0.31 7.75	6.67 141.3	72.37 107.69	21.52 105.10	35.15 1,890	346.39 47,450	11.38 3.47
ESC-20BP-S	51.22 1,300	23.522 597	0.305 7.75	6.11 129.2	87.87 126.30	19.91 97.2	37 2,000	416 56,920	13.35 4.07
ESC-20BP	57.87 1,470	20.59 523	0.38 9.75	6.56 138.9	107.65 160.20	22.32 109.00	37.01 1,990	359.01 49,180	13.48 4.11
ESC-21BP	56.54 1,436	21.18 538	0.38 9.75	6.71 142.1	107.65 160.20	22.86 111.60	39.06 2,100	389.97 53,420	13.48 4.11

\*excludes internal section of interlock

**ESC STEEL LLC**

**CHARLOTTE, NC**

18805 W Catawba Ave, Suite #207, Cornelius,  
North Carolina 28031, USA  
T : 980 689 4388  
E : engineering@escsteel.com

**HOUSTON, TX**

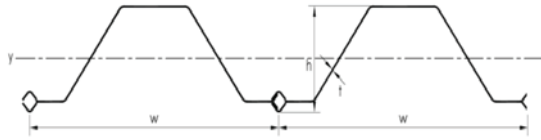
9595 Six Pines Dr. Suite 8210, The Woodlands  
Texas 77380, USA  
T : 281 205 7261  
E : info@escsteel.com



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## CLASSIFICATION

All sheet piles, excluding the -S Series are class 2 or 3 for grade S355 Grade 50 and below. BP-S Series sheet piles are class 3 for S275 Grade 42 and below in accordance to EN 1993-5:2007. Contact [engineering@escsteel.com](mailto:engineering@escsteel.com) if further detail is required



### Interlocking Clutch

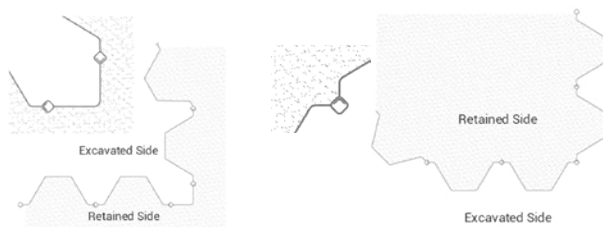


SECTION	WIDTH	HEIGHT	THICKNESS	CROSS SECTIONAL AREA	WEIGHT		ELASTIC SECTION MODULUS	MOMENT OF INERTIA	COATING AREA <small>*(both side per pile)</small>
	(w)	(h)	(t)		Per Pile	Per Wall			
	in	in	in	in <sup>2</sup> /ft	lb/ft	lb/ft <sup>2</sup>	in <sup>3</sup> /ft	in <sup>4</sup> /ft	ft <sup>2</sup> /ft
	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-21BP-S	37.706 957	21.04 534	0.305 7.75	7.15 151.3	72.37 107.69	24.33 118.8	39 2,100	398 54,480	11.38 3.47
ESC-22BP-S	48.501 1,231	24.389 619	0.305 7.75	6.45 136.5	84.87 126.30	21.01 102.6	41.00 2,190	474 64,940	13.35 4.07
ESC-22BP	55.16 1,401	21.73 552	0.38 9.75	6.88 145.7	107.65 160.20	23.43 114.40	41.11 2,210	422.45 57,870	13.48 4.11
ESC-23BP	54.09 1,374	22.13 562	0.38 9.75	7.01 148.5	107.65 160.20	23.88 116.60	42.78 2,300	447.86 61,350	13.48 4.11
ESC-23BP-S	35.302 896	21.552 547	0.305 7.75	7.64 161.7	72.37 107.69	23.04 112.5	43 2,300	447 61,260	11.38 3.47
ESC-24BP	53.03 1,347	22.48 571	0.38 9.75	7.15 151.5	107.65 160.20	24.35 118.90	44.45 2,390	474.06 64,940	13.48 4.11
ESC-24BP-S	45.665 1,159	25.177 639	0.305 7.75	6.85 145.0	84.87 126.3	22.32 109.0	45 2,410	538 73,760	13.35 4.07
ESC-25BP	51.57 1,310	22.99 584	0.38 9.75	7.35 155.8	107.65 160.20	25.05 122.30	46.87 2,520	510.56 69,940	13.48 4.11
ESC-26BP	50.43 1,281	23.35 593	0.38 9.75	7.52 159.3	107.65 160.20	25.60 125.00	48.55 2,610	539.03 73,840	13.48 4.11
ESC-27BP	49.29 1,252	23.66 601	0.38 9.75	7.69 163	107.65 160.20	26.19 127.90	50.59 2,720	568.52 77,880	13.48 4.11
ESC-28BP	48.15 1,223	23.98 609	0.38 9.75	7.88 166.9	107.65 160.20	26.83 131.00	52.45 2,820	599.11 82,070	13.48 4.11
ESC-29BP	47.36 1,203	24.17 614	0.38 9.75	8.01 169.6	107.65 160.20	27.28 133.20	53.94 2,900	620.06 84,940	13.48 4.11
ESC-30BP	46.18 1,173	24.49 622	0.38 9.75	8.21 174	107.65 160.20	27.98 136.60	55.99 3,010	652.55 89,390	13.48 4.11
ESC-31BP	51.30 1,303	22.01 559	0.46 11.75	8.88 188.1	129.25 192.33	30.23 147.60	57.47 3,090	589.48 80,750	13.48 4.11
ESC-32BP	50.24 1,276	22.28 566	0.46 11.75	9.07 192.1	129.25 192.33	30.88 150.80	59.52 3,200	619.04 84,800	13.48 4.11
ESC-34BP	48.43 1,230	22.76 578	0.46 11.75	9.40 199.2	129.25 192.33	32.03 156.40	63.05 3,390	670.21 91,810	13.48 4.11
ESC-36BP	46.57 1,183	23.15 588	0.46 11.75	9.77 207	129.25 192.33	33.28 162.50	66.77 3,590	723.80 99,150	13.48 4.11
ESC-38BP	44.72 1,136	23.50 597	0.46 11.75	10.18 215.7	129.25 192.33	34.67 169.30	70.87 3,810	780.01 106,850	13.48 4.11

\*excludes internal section of interlock

## CORNER PILES

Due to the flexibility of the forming process, the ESC-BP Series Sheet Piles can be formed to almost any corner configuration, without requiring any wastage or welding. Note that the interlocks should be orientated toward the retained side as shown in the following figures.



## 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	0.08-0.15	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

#### ESC STEEL LLC

#### CHARLOTTE, NC

18805 W Catawba Ave, Suite #207, Cornelius,  
 North Carolina 28031, USA  
 T : 980 689 4388  
 E : engineering@escsteel.com

#### HOUSTON, TX

9595 Six Pines Dr. Suite 8210, The Woodlands  
 Texas 77380, USA  
 T : 281 205 7261  
 E : info@escsteel.com

