



ESC-CRU SERIES

U PROFILE SHEET PILES

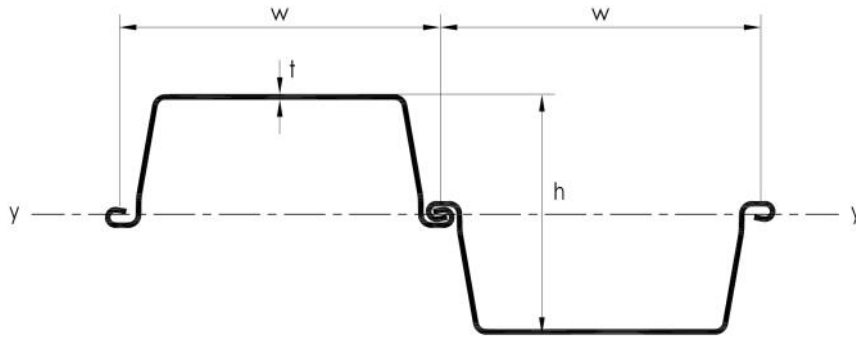
A REUSABLE AND ECONOMIC ALTERNATIVE TO HOT ROLLED U SHEET PILES

The ESC-CRU series is a cold rolled sheet pile profile. U-shaped steel sheet piles have long been familiar to designers and constructors because of the long-standing traditions and technologies, and are widely used for permanent structures, temporarily installed soil-retaining construction and temporary cofferdams. ESC-CRU profiles provide an economic alternative to Hot Rolled U Sheet Piles as they are of similar size and possess similar structural properties, with a section modulus ranging from 500cm³/m all the way up to 4,650cm³/m. With over 50 choices in profile, the CRU series sheet piles allow greater fine tuning in the design for the most economical solution.

ORDER OPTIONS

- | | |
|-------------------------|---|
| Steel Grades | <ul style="list-style-type: none"> ✓ Q235B, Q345B, Q345C, Q390B, Q420B ✓ S235JR, S275JR, S355JR, S355JO ✓ ASTM A572 Gr42, Gr50, Gr60 ✓ Others available on request |
| Length | <ul style="list-style-type: none"> 35.0m maximum Any project specific length can be produced |
| Delivery Options | <ul style="list-style-type: none"> ✓ Single or Pairs ✓ Pairs either loose, welded or crimped ✓ Lifting Hole ✓ Grip Plate ✓ By container (11.8m or less) or Break Bulk ✓ Corrosion Protection Coatings |



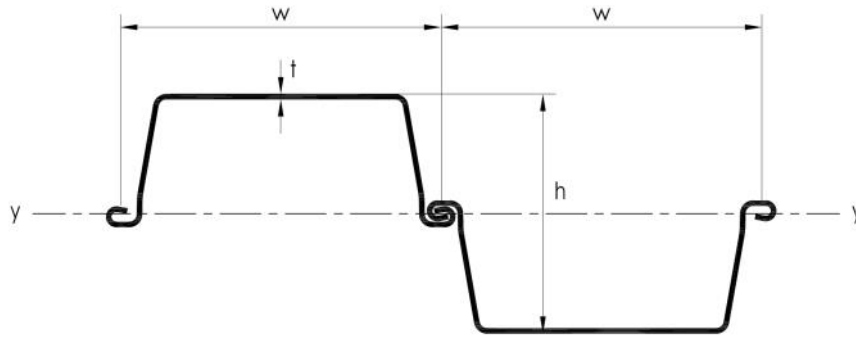


INTERLOCKING CLUTCH



Section	Width (w)	Height (h)	Thickness (t)	Cross Sectional Area	Weight		Elastic Section Modulus	Moment of Inertia	Coating Area (both sides per pile)
	mm	mm	mm		cm ² /m	Per Pile (kg/m)			
ESC-CRU5-600	600	150	9.5	119.0	56.40	94.0	510	3,825	1.52
ESC-CRU7-600	600	340	6.0	98.1	46.20	77.0	745	12,665	1.96
ESC-CRU8-600	600	325	7.0	110.0	51.80	86.3	825	13,406	1.89
ESC-CRU11-600	600	360	8.0	131.6	62.00	103.3	1,110	19,980	1.98
ESC-CRU12-600	600	310	9.0	137.6	64.80	108.0	1,200	18,600	1.84
ESC-CRU12-700	700	440	7.5	123.0	67.60	96.6	1,210	26,620	2.30
ESC-CRU12-450	450	360	10.0	184.0	65.00	144.4	1,250	22,482	1.66
ESC-CRU12-600	600	400	7.5	77.8	61.07	101.8	1,257	25,143	2.08
ESC-CRU13-600	600	400	8.0	83.0	65.14	108.6	1,337	26,745	2.08
ESC-CRU15-600	600	400	9.0	93.4	73.28	122.1	1,496	29,921	2.08
ESC-CRU15-675	675	420	8.5	142.0	75.90	112.0	1,520	31,920	2.26
ESC-CRU16-400	400	290	11.5	203.8	64.00	160.0	1,565	22,693	1.42
ESC-CRU16-600	600	400	10.0	103.7	81.42	135.7	1,653	33,061	2.08
ESC-CRU17-500	500	420	12.0	224.0	88.00	176.0	1,660	34,860	1.87
ESC-CRU17-750	750	430	9.5	151.0	89.10	119.0	1,670	35,905	2.39
ESC-CRU18-750	750	460	9.0	150.3	88.50	118.0	1,780	40,940	2.51
ESC-CRU18-600	600	430	9.5	165.4	77.90	129.8	1,800	38,700	2.09
ESC-CRU20-750	750	460	10.0	164.4	96.80	129.0	2,005	46,115	2.47
ESC-CRU20-650	650	500	10.0	121.0	94.99	146.1	2,029	50,732	2.43
ESC-CRU20-650	650	540	8.0	150.1	76.60	117.8	2,075	56,025	2.44
ESC-CRU21-750	750	500	10.0	169.3	99.70	133.0	2,080	49,920	2.47
ESC-CRU22-600	600	500	10.0	186.6	87.90	146.5	2,200	55,000	2.24
ESC-CRU22-650	650	500	11.0	133.1	104.50	160.8	2,222	55,553	2.43
ESC-CRU23-750	750	480	10.5	173.4	102.10	136.1	2,275	54,600	2.48
ESC-CRU23-650	650	540	9.0	109.5	86.00	132.3	2,295	61,954	2.44
ESC-CRU23-700	700	540	9.0	114.0	89.52	127.9	2,299	62,060	2.54
ESC-CRU23-750	750	540	9.0	118.5	93.05	124.1	2,302	62,153	2.64
ESC-CRU24-650	650	500	12.0	145.2	114.00	175.4	2,413	60,331	2.43
ESC-CRU25-750	750	470	11.5	188.2	110.80	147.7	2,500	58,750	2.46

*excludes internal section of interlock



INTERLOCKING CLUTCH



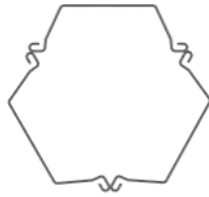
Section	Width (w)	Height (h)	Thickness (t)	Cross Sectional	Weight		Elastic Section	Moment of Inertia	Coating Area (both sides per pile)
	mm	mm	mm	cm ² /m	Per Pile kg/m	Per Wall kg/m ²	cm ³ /m	cm ⁴ /m	m ² /m
ESC-CRU25-650	650	540	10.0	121.7	95.54	147.0	2,539	68,549	2.44
ESC-CRU25-700	700	540	10.0	126.7	99.47	142.1	2,543	68,669	2.54
ESC-CRU25-750	750	540	10.0	131.7	103.39	137.9	2,547	68,773	2.64
ESC-CRU26-650	650	540	10.0	186.2	95.00	146.1	2,560	69,120	2.42
ESC-CRU26-750	750	451	12.0	192.0	113.20	151.0	2,580	58,179	2.41
ESC-CRU26-650	650	540	10.5	127.8	100.32	154.3	2,667	72,017	2.44
ESC-CRU27-750	750	560	10.0	141.8	111.34	148.5	2,699	75,567	2.84
ESC-CRU26-700	700	560	10.0	136.8	107.42	153.5	2,699	75,562	2.74
ESC-CRU26-650A	650	560	10.0	131.8	103.49	159.2	2,699	75,557	2.64
ESC-CRU27-650	650	540	11.0	133.9	105.10	161.6	2,760	74,767	2.11
ESC-CRU27-700	700	540	11.0	139.4	109.41	156.3	2,774	74,903	2.54
ESC-CRU28-750	750	540	11.0	144.9	113.73	151.6	2,790	75,338	2.64
ESC-CRU28-600	600	480	12.0	216.0	101.90	169.8	2,840	68,160	2.17
ESC-CRU29-650	650	560	11.0	145.0	113.85	175.2	2,956	82,778	2.64
ESC-CRU29-750	750	560	11.0	156.0	122.48	163.3	2,957	82,794	2.84
ESC-CRU29-700	700	560	11.0	150.5	118.17	168.8	2,957	82,787	2.74
ESC-CRU30-650	650	540	12.0	146.1	114.65	176.4	3,021	81,570	2.44
ESC-CRU30-700	700	540	12.0	152.1	119.36	170.5	3,027	81,718	2.54
ESC-CRU30-750	750	540	12.0	158.1	124.07	165.4	3,031	81,847	2.64
ESC-CRU32-750	750	605	11.0	204.0	120.00	160.0	3,170	95,893	2.78
ESC-CRU32-600	600	520	13.0	242.0	114.00	190.0	3,200	83,200	2.24
ESC-CRU32-650	650	560	12.0	158.2	124.20	191.1	3,212	89,941	2.64
ESC-CRU32-750	750	560	12.0	170.2	133.62	178.2	3,213	89,963	2.84
ESC-CRU32-700	700	560	12.0	164.2	128.91	184.2	3,213	89,953	2.74
ESC-CRU35-750	750	608	12.0	226.0	133.00	177.0	3,465	105,336	2.83
ESC-CRU37-750	750	610	13.0	243.0	143.00	191.0	3,750	114,344	2.81
ESC-CRU40-750	750	610	14.0	263.0	155.00	207.0	4,045	123,373	2.83
ESC-CRU43-750	750	610	15.0	283.0	167.00	223.0	4,340	132,309	2.84
ESC-CRU46-750	750	615	16.0	302.0	178.00	237.0	4,645	142,834	2.84

*excludes internal section of interlock

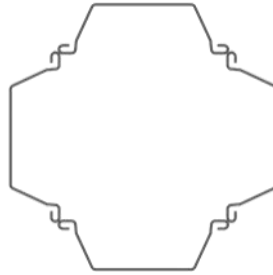
BOX PILES



Double CRU Box Pile



Triple CRU Box Pile

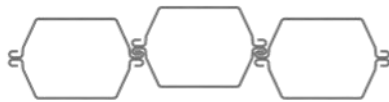


Quadruple CRU Box Pile

ESC-CRU Series Sheet Piles can be combined to create special arrangements. These combined sections presented can greatly amplify the bending strength of a single section by over 5 times. Box Piles with intermediate standard U Piles can be designed. The welded box section can also be incorporated along a certain section of the length where the bending moments are the highest. Please contact our engineering department at engineering@escpile.com if you would like to receive more information about the presented combined pile systems.

COMBINED WALL CONFIGURATIONS

1/1



1/3



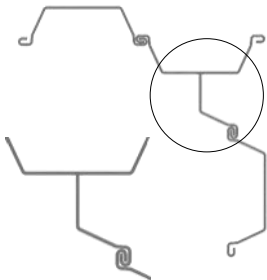
1/2



1/4

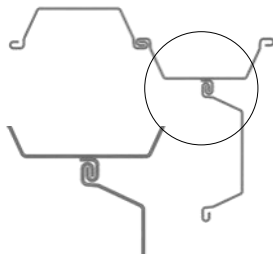


CORNER PILES



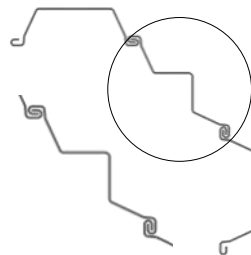
OPTION 1

Cut & weld on section from CRU Sheet Pile



OPTION 2

ESC Welded Interlocks



OPTION 3

Cold Form bending of CRU flange at any angle between 20°

ESC is able to offer 3 options for Corner Pile configurations in the ESC-CRU Series. Option 1 is frequently used when the installation contractor prefers to create their own corner piles on site depending on the as-driven layout. However this produces wastage on the offcut pile. Option 2 allows welding at the mill or on site and provides the installation contractor with more flexibility on corner pile location. Option 3 provides an option with no welding required and provides increased accuracy at corners that are deviated from the typical 90° corner.



STEEL GRADES & MANUFACTURING TOLERANCES

COLD ROLLED & COLD FORMED SHEET PILES

STEEL GRADES

Classification		Mechanical Properties				Impact Strength (Charpy)	Chemical Composition % (max)				
		Minimum Yield Point MPa		Ultimate Tensile Strength MPa	Elongation % (min)		C	Si	Mn	P	S
		t≤16	16<t≤40		3≤t≤40						
BS EN 10025-2: 2004	S275JR	275	265	410-560	23	27J at 20°C	0.21	-	1.50	0.035	0.035
	S275J2	275	265	410-560	21	27J at -20°C	0.18	-	1.50	0.025	0.025
	S355JR	355	345	470-630	22	27J at 20°C	0.24	0.55	1.60	0.035	0.035
BS EN 102481: 1998	S390GP	390	390	≥ 490	20	-	0.24	0.55	1.60	0.04	0.040
	S430GP	430	430	≥510	19	-	0.24	0.55	1.60	0.04	0.040
GB/T 700:2006	Q235B	235	225	375-500	26	27J at 20°C	0.20	0.35	1.40	0.045	0.045
	Q275B	275	265	410-540	22	27J at 20°C	0.21	0.35	1.50	0.045	0.045
GB/T1591:2008	Q345B	345	335	470-630	20	34J at 20°C	0.20	0.50	1.70	0.035	0.035
	Q390B	390	370	490-650	20	34J at 20°C	0.20	0.50	1.70	0.030	0.030
	Q420B	420	400	540-680	19	34J at 20°C	0.20	0.50	1.70	0.030	0.030
	MDB350	350	350	470-630	21	40J at 20°C	0.20	0.50	1.50	0.025	0.020
ASTMA36-14	A36	250	250	400-550	23	-	0.26	0.40	-	0.040	0.050
ASTM A572-2013a	A572 Gr.42	290	290	≥415	20	-	0.21	0.40	1.35	0.040	0.050
	A572 Gr.50	345	345	≥450	18	-	0.23	0.40	1.30	0.040	0.050
	A572 Gr.60	413	413	≥517	16	-	0.26	0.40	1.35	0.040	0.050
ASTM A690-2013a	A690	345	345	>485	21	-	0.22	0.40	0.60-0.90	0.08-.015	0.040
JIS G3101-2010	SS400	245	235	400-510	17 (5<t<16), 21 (t≤5 or t>16)	-	-	-	-	0.050	0.050
	SS490	285	275	490-610	15 (5<t<16), 19 (t≤5 or t>16)	-	-	-	-	0.050	0.050
	SS540	400	330	≥540	13 (5<t<16), 16 (t≤5 or t>16)	-	0.30	-	1.60	0.040	0.040
JIS A5523-2012	SYW295	295	295	≥490	17	43J at 0°C	0.18	0.55	1.50	0.040	0.040
	SYW390	390	390	≥ 540	15	43J at 0°C	0.18	0.55	1.50	0.040	0.040
MS 2025-1:2006	S235JR	235	225	360-510	26	-	0.17	-	1.40	0.035	0.035
	S275JR	275	265	410-560	23	-	0.21	-	1.50	0.035	0.035
	S355JO	355	345	470-630	22	-	0.20	0.55	1.60	0.030	0.030

MANUFACTURING TOLERANCES TO BS EN 10249

Component	Tolerance	Nominal Thickness	Tolerance
Mass	± 5%		
Length	± 50mm		
Height (≤ 200mm)	± 4.0mm	5mm	± 0.29mm
Height (> 200mm & ≤ 300mm)	± 6.0mm	6mm	± 0.31mm
Height (> 300mm & ≤ 400mm)	± 8.0mm	8mm	± 0.35mm
Height (> 400mm)	± 10.0mm	9mm	± 0.40mm
Width of Single Pile	± 2% of width	10mm	± 0.40mm
Width of Double Z or Wide U	± 3% of width	12mm	± 0.43mm
Squariness of Ends	2% of width	13mm	± 0.46mm
		15mm	± 0.46mm

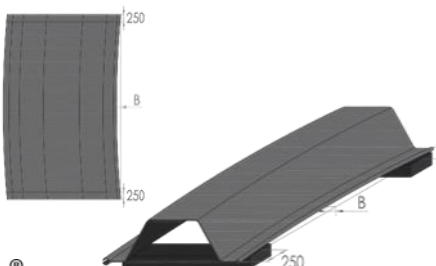
SHEET PILE MARKING

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.

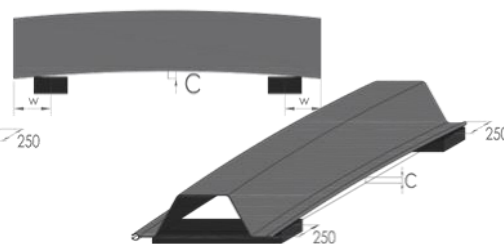


Bending B

±0.2% of the length



Curving C



Twisting T

±0.2% of the length but no more than 100mm

