

Pipe Pile

Similar to H-piles, pipe piles are also designed to transfer structural loads through the foundation to soils below. Where H-piles are typically classified as point bearing, pipe piles are most efficient as friction piles. Pipe piles have substantial surface area that interacts with the surrounding soil to provide great frictional load resistance.

Pipe piles are also used in conjunction with sheet piles to add lateral stiffness and bending resistance where loads exceed the capacity of sheet piles alone.

L.B. Foster provides ERW, DSAW, spiral weld and rolled and welded pipe pile in a wide range of sizes and lengths to meet your requirements. In addition, L.B. Foster provides value added services such as coating and welding to facilitate complete pipe pile solutions.



New Jersey Department of Transportation, Brielle, NJ



USACE, Santa Maria, CA



Route 70 Bridge over the Manasquan River, Brielle, NJ

Pipe Accessories

L.B. Foster can provide the full line of pipe piling accessories



Outside fit cutting shoe



Inside fit cutting shoe



Drive on splicer

And can also offer such services as:

Coating

- Coal tar epoxy
- Fusion bond
- Galvanizing

Cutting and/or splicing of pipe to specific job lengths

Accessory Attachment

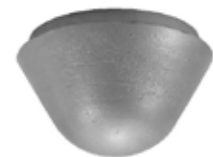
- Cutting shoes
- Conical points
- Backing rings
- Splicers



Backing ring

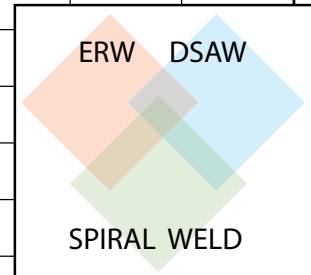


Inside fit conical point



Inside fit conical point snub nose

Pipe Weights		Wall Thickness (inches)									
lbs / ft		0.219	0.250	0.312	0.375	0.438	0.500	0.625	0.750	0.875	1.000
Outside Diameter (inches)	8.625	19.68	22.38	27.73	33.07	38.33	43.43				
	10.75	24.65	28.06	34.81	41.59	48.28	54.79				
	12	27.58	31.40	38.98	46.60	54.14	61.47	76.00			
	12.75	29.34	33.41	41.48	49.61	57.65	65.48	81.01			
	14	32.26	36.75	45.65	54.62	63.50	72.16	89.36			
	16	36.95	42.09	52.32	62.64	72.86	82.85	102.72			
	18	41.63	47.44	58.99	70.65	82.23	93.54	116.09			
	20		52.78	65.66	78.67	91.59	104.23	129.45			
	24		63.47	79.01	94.71	110.32	125.61	156.17	186.41		
	26		68.82	85.68	102.72	119.69	136.30	169.54	202.44		
	28		74.16	92.35	110.74	129.05	146.99	182.90	218.48	253.72	
	30		79.51	99.02	118.76	138.42	157.68	196.26	234.51	272.43	
	32		84.85	105.69	126.78	147.78	168.37	209.62	250.55	291.14	
	34		90.20	112.36	134.79	157.14	179.06	222.99	266.58	309.84	
	36		95.54	119.03	142.81	166.51	189.75	236.35	282.62	328.55	374.15
	38		100.89	125.70	150.83	175.87	200.44	249.71	298.65	347.26	395.53
	40		106.23	132.37	158.85	185.24	211.13	263.07	314.69	365.97	416.91
	42		111.58	139.04	166.86	194.60	211.82	276.44	330.72	384.67	438.29
	44		116.92	145.71	174.88	203.97	232.51	289.80	346.76	403.38	459.67
	46		122.27	152.38	182.90	213.33	243.20	303.16	362.79	422.09	481.05
48		127.61	159.05	190.92	222.70	253.89	316.52	378.83	440.80	502.43	
54			179.06	214.97	250.79	285.96	356.61	426.93	496.92	566.57	
60			199.08	239.02	278.88	318.03	396.70	475.04	553.04	630.71	
66			219.09	263.07	306.98	350.10	436.79	523.14	609.16	694.85	
72			239.10	287.13	335.07	382.17	476.87	571.25	665.29	758.99	
78			259.11	311.18	363.16	414.24	516.96	619.35	721.41	823.13	
84			279.12	335.23	391.26	446.31	557.05	667.46	777.53	887.27	
90			299.13	359.28	419.35	478.38	597.14	715.56	833.65	951.41	
96			319.15	383.34	447.44	510.45	637.22	763.67	889.78	1015.55	



Electric Resistance Weld

Electric resistance weld (ERW) pipe is normally produced in sizes from 2- $\frac{3}{8}$ " OD thru 24" OD.

ERW is produced from individual sheets or continuously from rolls of skelp. There are two important differences in the production of ERW pipe versus CW pipe. ERW pipe is cold formed into a cylindrical shape rather than hot formed. An electric current rather than a flame is used to heat the edges of the strip for the fusion weld. Revolving copper discs serve as electrodes and raise the temperature to approximately 2600°F for effective welding. As in CW pipe, no extraneous

metal is added; in fact, due to the extreme pressure of the rolls, steel is extruded on both the inside and outside of the pipe at the point of the weld. This is called flash and is removed on the OD by stationary cutters while still white-hot for A252 grades, and both the ID and OD for other grades. As in CW production, ERW pipe is subject to numerous finishing operations. ERW pipe is primarily used as API line pipe for the transmission of gas and oil. It is also used for the transmission of water, under AWWA specifications, as piling and slurry pipe and in mechanical applications.

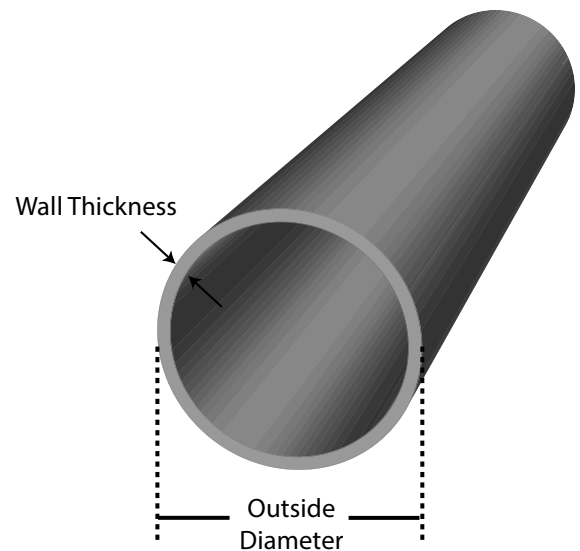


Electric Resistance Weld

ERW		<i>Wall Thickness (inches)</i>								
lbs / ft		0.188	0.219	0.250	0.312	0.375	0.438	0.500	0.625	0.750
<i>Outside Diameter (inches)</i>	8.625	16.96	19.68	22.38	27.73	33.07	38.33	43.43		
	10.75	21.23	24.65	28.06	34.81	41.59	48.28	54.79		
	12.75	25.25	29.34	33.41	41.48	49.61	57.65	65.48		
	14	27.76	32.26	36.75	45.65	54.62	63.50	72.16		
	16	31.78	36.95	42.09	52.32	62.64	72.86	82.85	102.72	
	18		41.63	47.44	58.99	70.65	82.23	93.54	116.09	
	20			52.78	65.66	78.67	91.59	104.23	129.45	
	24			63.47	79.01	94.71	110.32	125.61	156.17	186.41

ERW is able to be produced to pipe specifications A252, A500, A53 and API 5L.

Pipe can be produced to the above specifications utilizing other grades of steel (A36, A572, A588, etc.)



Pipe Weight Calculation:

$$LB / FT = (OD - WT) \times WT \times 10.69$$

OD = Outside Diameter

WT = Wall Thickness

Double Submerged Arc Weld

Double submerged arc weld pipe (DSAW) derives its name from the welding process wherein the welding arc is submerged in flux while the welding takes place. Both inside and outside welds are required and are usually accomplished in separate processes, hence the word "double." These separate welds consume a portion of the other, resulting in a single high quality weld nugget.

DSAW pipe is normally produced in sizes from 24" through 48" OD and wall thicknesses from .312" through 1".

Two different processes are used to manufacture DSAW pipe; the pyramid rolls method, and the U-O-E method. The difference in the processes is found only in the method of forming the cylinder. In the pyramid rolls process the cylinder is formed between three rolls arranged in a pyramidal fashion. As the name implies, the U-O-E method uses a "U" press and "O" press for forming. Other parts of the process such as finishing and inspection are similar. Both processes use flat steel plate as the raw material.

DSAW pipe may or may not be cold expanded. Cold expansion is a process where the pipe is expanded (up to 1.5%) to obtain its final OD dimension. In the process, a gain of yield strength results. Expansion is most often utilized in a U-O-E mill due to the need to recover the yield strength lost during forming in the "O" press.

DSAW pipe is normally produced in double random lengths with square ends or beveled for welding. Fabrication services are available to produce lengths longer than the standard DRL (double random lengths 38'-42'). A wide range of external coatings and internal linings are available with DSAW pipe.

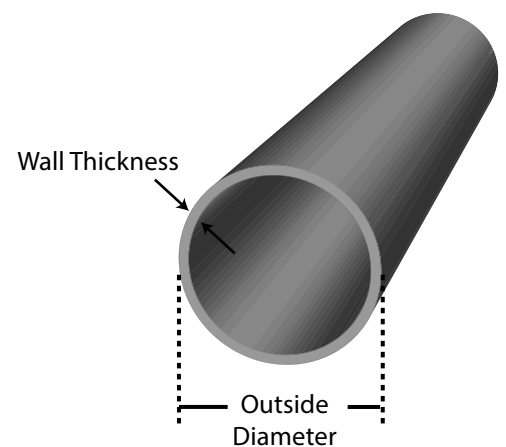


Double Submerged Arc Weld

DSAW		<i>Wall Thickness (inches)</i>						
	lbs / ft	0.312	0.375	0.500	.0625	0.750	0.875	1.000
Outside Diameter (inches)	24	79.01	94.71	125.61	156.17	186.41		
	26	85.68	102.72	136.30	139.54	202.44		
	28	92.35	110.74	146.99	182.90	218.48	253.72	
	30	99.02	118.76	157.68	196.26	234.51	272.43	
	32	105.69	126.78	168.37	209.62	250.55	291.14	
	34	112.36	134.79	179.06	222.99	266.58	309.84	
	36		142.81	189.75	236.35	282.62	328.55	
	38		150.83	200.44	249.71	298.65	347.26	
	40		158.85	211.13	263.07	314.69	365.97	
	42		166.86	211.82	276.44	330.72	384.67	438.29
	44		174.88	232.51	289.80	346.76	403.38	459.67
	46		182.90	243.20	303.16	362.79	422.09	481.05
	48		190.92	253.89	316.52	378.83	440.80	502.43

DSAW is able to be produced to pipe specifications A252 and API 5L.

Pipe can be produced to the above specifications utilizing other grades of steel (A36, A572, A588, etc.)



Pipe Weight Calculation:

$$LB / FT = (OD - WT) \times WT \times 10.69$$

OD = Outside Diameter
WT = Wall Thickness

Spiral Weld

Spiral weld pipe, as the name implies, is a steel pipe that has a seam running its entire length in a spiral form.

In the past, due to the method of manufacture, spiral welded pipe was relegated to low pressure and structural applications. With the development of the submerged arc welding process, the production of large hot rolled coils of sufficient width and the development of dependable non-destructive testing methods, it is now possible to produce spiral weld pipe for high-pressure service.

Present spiral weld mills consist of a de-coiling device (in the case of strip base material), a strip connecting welder, straightening rollers, edge preparation tools (shearing and trimming), prebending devices, a bending and cage forming system, an internal welder, an external welder (both submerged arc), ultrasonic testing apparatus and cutting devices.

The material passes through all these production stages continuously. The angle between the flat strip being fed into the machine and the finished pipe leaving the machine controls the pipe diameter in ratio to strip width and the angle of the weld in the pipe.

Because of the method of manufacture, a wide variety of diameters can be produced. The diameter tolerance is small, particularly with regard to ovality; and the pipe, due to its axial symmetry, has an inherent straightness. The length range is infinite and is controlled only by the economics of transportation.



Spiral weld pipe is used for piling and structural applications, as well as for dredging, slurry, water and other pipelines.

Spiral weld pipe is produced in accordance with the dimensional and tolerance requirements of various ASTM, AWWA and API specifications.

Spiral Weld

Spiral Weld		Wall Thickness (inches)									
Outside Diameter (inches)	lbs / ft	0.250	0.312	0.375	0.438	0.500	0.625	0.750	0.875	1.000	
	18	47.4	59.0	70.7	82.2	93.5					
	20	52.8	65.7	78.7	91.6	104.2					
	22	58.1	72.3	86.7	101.0	114.9	142.8				
	24	63.5	79.0	94.7	110.3	125.6	156.2	186.4			
	26	68.8	85.7	102.7	119.7	136.3	169.5	202.4			
	28	74.2	92.4	110.7	129.1	147.0	182.9	218.5			
	30	79.5	99.0	118.8	138.4	157.7	196.3	234.5	272.4		
	32	84.9	105.7	126.8	147.8	168.4	209.6	250.5	291.1		
	34	90.2	112.4	134.8	157.1	179.1	223.0	266.6	309.8		
	36	95.5	119.0	142.8	166.5	189.7	236.3	282.6	328.6	374.2	
	38	100.9	125.7	150.8	175.9	200.4	249.7	298.7	347.3	395.5	
	40	106.2	132.4	158.8	185.2	211.1	263.1	314.7	366.0	416.9	
	42	111.6	139.0	166.9	194.6	221.8	276.4	330.7	384.7	438.3	
	48	127.6	159.1	190.9	222.7	253.9	316.5	378.8	440.8	502.4	
	54		179.1	215.0	250.8	286.0	356.6	426.9	496.9	566.6	
	60		199.1	239.0	278.9	318.0	396.7	475.0	553.0	630.7	
	66		219.1	263.1	307.0	350.1	436.8	523.1	609.2	694.9	
	72		239.1	287.1	335.1	382.2	476.9	571.2	665.3	759.0	
78		259.1	311.2	363.2	414.2	517.0	649.4	721.4	823.1		
84		279.1	335.2	391.3	446.3	557.0	667.5	777.5	887.3		
90		229.1	359.3	419.3	478.4	597.1	715.6	833.7	951.4		
96		319.1	383.3	447.4	510.4	637.2	763.7	889.8	1015.6		

Spiral weld is able to be produced to pipe specifications A252, API 5L and A139.

Pipe can be produced to the above specifications utilizing other grades of steel (A36, A572, A588, etc.)

Pipe Weight Calculation:

$$LB / FT = (OD - WT) \times WT \times 10.69$$

OD = Outside Diameter
WT = Wall Thickness