OFFSHORE ENERGY SERVICES, INC

Grade X-52 **Min. Yield** 52,000 PSI

Allowable Blow Count (S) for Diesel Hammers in Blows/ft

Pipe O.D. (In.)	Pipe Wall (In.)	Pipe I.D. (In.)	Pipe X-Sec. (A) (Sq. In.)	Weight Per Ft. (Lbs.)	Pipe Yield (Tons)	Allow. Brg.Load (P) Tons (1.85 Safe F.)	D-12	D-15	D-22	D-30	D-30.02	D-36	D-46	D-62	D-80	D-100
							Hammer Energy (E) in ft-lbs									
							22,500	28,488	39,700	54,250	66,100	83,100	105,000	152,538	225,000	300,000
14	3/8	13 1/4	16.05	55	417	226	-	-	294.22	129.89	89.28	61.64	44.06	27.21	17.19	12.45
14	1/2	13	21.21	73	551	298	-	-	-	263.02	154.97	97.51	65.99	38.78	23.81	17.01
14	5/8	12 3/4	26.26	90	683	369	-	-	-	-	277.31	149.77	94.05	52.03	30.95	21.81
14	3/4	12 1/2	31.22	107	812	439	-	-	-	-	-	232.93	131.22	67.37	38.68	26.85
14	1	12	40.84	140	1,062	574	-	-	-	-	-	-	258.92	106.57	56.18	37.72
16	3/8	15 1/4	18.41	63	479	259	-	-	-	177.10	114.94	76.45	53.41	32.28	20.14	14.50
16	1/2	15	24.35	84	633	342	-	-	-	-	220.03	127.28	82.48	46.76	28.17	19.95
16	5/8	14 3/4	30.19	104	785	424	-	-	-	-	-	211.67	122.47	63.96	37.01	25.77
16	3/4	14 1/2	35.93	124	934	505	-	-	-	-	-	379.20	180.89	84.72	46.79	31.98
16	1	14	47.12	162	1,225	662	-	-	-	-	-	-	-	142.42	69.85	45.73
20	3/8	19 1/4	23.12	79	601	325	-	-	-	357.50	191.26	114.73	75.70	43.55	26.43	18.79
20	1/2	19	30.63	105	796	430	-	-	-	-	-	220.46	126.14	65.40	37.72	26.23
20	5/8	18 3/4	38.04	131	989	535	-	-	-	-	-	-	210.12	93.57	50.70	34.40
20	3/4	18 1/2	45.36	156	1,179	637	-	-	-	-	-	-	377.65	131.24	65.80	43.40
20	1	18	59.69	205	1,552	839	-	-	-	-	-	-	-	263.93	104.74	64.48
24	3/8	23 1/4	27.83	96	724	391	-	-	-	-	341.03	171.54	104.58	56.61	33.32	23.37
24	1/2	23	36.91	127	960	519	-	-	-	-	-	-	193.81	88.74	48.59	33.09
24	5/8	22 3/4	45.90	158	1,193	645	-	-	-	-	-	-	397.02	134.55	67.02	44.11
24	3/4	22 1/2	54.78	188	1,424	770	-	-	-	-	-	-	-	205.13	89.69	56.68
24	1	22	72.26	248	1,879	1,016	-	-	-	-	-	-	-	-	155.33	88.02
26	3/8	25 1/4	30.19	104	785	424	-	-	-	-	-	211.67	122.47	63.96	37.01	25.77
26	1/2	25	40.06	138	1,041	563	-	-	-	-	-	-	243.82	102.76	54.61	36.77
26	5/8	24 3/4	49.82	171	1,295	700	-	-	-	-	-	-	-	161.57	76.40	49.43
26	3/4	24 1/2	59.49	205	1,547	836	-	-	-	-	-	-	-	261.17	104.10	64.16
26	1	24	78.54	270	2,042	1,104	-	-	-	-	-	-	-	-	190.26	102.19
26	1 1/4	23 1/2	97.19	334	2,527	1,366	-	-	-	-	-	-	-	-	377.65	158.52
26	1 1/2	23	115.45	397	3,002	1,623	-	-	-	-	-	-	-	-	-	250.46
30	1/2	29	46.34	159	1,205	651	-	-	-	-	-	-	-	137.33	68.03	44.69
30	5/8	28 3/4	57.68	198	1,500	811	-	-	-	-	-	-	-	237.43	98.32	61.20
30	3/4	28 1/2	68.92	237	1,792	969	-	-	-	-	-	-	-	-	139.80	81.20
30	1	28	91.11	313	2,369	1,280	-	-	-	-	-	-	-	-	295.72	137.24
30	1 1/4	27 1/2	112.90	388	2,935	1,587	-	-	-	-	-	-	-	-	-	234.12
30	1 1/2	27	134.30	462	3,492	1,888	-	-	-	-	-	-	-	-	-	-
36	5/8	34 3/4	69.46	239	1,806	976	-	-	-	-	-	-	-	-	142.19	82.27
36	3/4	34 1/2	83.06	286	2,159	1,167	-	-	-	-	-	-	-	-	221.38	113.63
36	1	34	109.96	378	2,859	1,545	-	-	-	-	-	-	-	-	-	216.97
36	1 1/4	33 1/2	136.46	469	3,548	1,918	-	-	-	-	-	-	-	-	-	-
36	1 1/2	33	162.58	559	4,227	2,285	-	-	-	-	-	-	-	-	-	-
42	3/8	41 1/4	49.04	169	1,275	689	-	-	-	-	-	-	-	155.71	74.45	48.34
42	1/2	41	65.19	224	1,695	916	-	-	-	-	-	-	-	361.47	124.39	74.09
42	5/8	40 3/4	81.24	279	2,112	1,142	-	-	-	-	-	-	-	-	208.14	108.89
42	3/4	40 1/2	97.19	334	2,527	1,366	-	-	-	-	-	-	-	-	377.65	158.52
42	1	40	128.81	443	3,349	1,810	-	-	-	-	-	-	-	-	-	368.33
42	1 1/4	39 1/2	160.03	550	4,161	2,249	-	-	-	-	-	-	-	-	-	-
42	1 1/2	39	190.85	656	4,962	2,682	-	-	-	-	-	-	-	-	-	-
42	1 3/4	38 1/2	221.29	761	5,753	3,110	-	-	-	-	-	-	-	-	-	-
48	3/4	46 1/2	111.33	383	2,895	1,565	-	-	-	-	-	-	-	-	-	224.76
48	1	46	147.66	508	3,839	2,075	-	-	-	-	-	-	-	-	-	-
48	1 1/4	45 1/2	183.59	631	4,773	2,580	-	-	-	-	-	-	-	-	-	-
48	1 1/2	45	219.13	753	5,697	3,080	-	-	-	-	-	-	-	-	-	-
48	1 3/4	44 1/2	254.27	874	6,611	3,574	-	-	-	-	-	-	-	-	-	-
48	2	44	289.03	994	7,515	4,062	-	-	-	-	-	-	-	-	-	-
48	2 1/2	43	357.36	1229	9,291	5,022	-	-	-	-	-	-	-	-	-	-
60	1	58	185.35	637	4,819	2,605	-	-	-	-	-	-	-	-	-	-
60	1 1/4	57 1/2	230.71	793	5,998	3,242	-	-	-	-	-	-	-	-	-	-
60	1 1/2	57	275.68	948	7,168	3,874	-	-	-	-	-	-	-	-	-	-
60	1 3/4	56 1/2	320.25	1101	8,326	4,501	-	-	-	-	-	-	-	-	-	-
60	2	56	364.43	1253	9,475	5,122	-	-	-	-	-	-	-	-	-	-
60	2 1/4	55 1/2	408.21	1403	10,614	5,737	-	-	-	-	-	-	-	-	-	-
60	2 1/2	55	451.61	1553	11,742	6,347	-	-	-	-	-	-	-	-	-	-
72	1	70	223.05	767	5,799	3,135	-	-	-	-	-	-	-	-	-	-
72	1 1/2	69	332.22	1142	8,638	4,669	-	-	-	-	-	-	-	-	-	-
72	2	68	439.82	1512	11,435	6,181	-	-	-	-	-	-	-	-	-	-
72	2 1/2	67	545.85	1877	14,192	7,671	-	-	-	-	-	-	-	-	-	-
72	3	66	650.31	2236	16,908	9,140	-	-	-	-	-	-	-	-	-	-

1) - DENOTES THAT BLOW COUNTS IN EXCESS OF 400 BLOWS PER FOOT ARE REQUIRED TO YIELD THE PIPE.
2) THE ABOVE CHART IS BASED ON YIELD ONLY AND DOES NOT TAKE INTO ACCOUNT DEFLECTION OR MISALIGNMENT.
3) HAMMERS ARE DESIGNED FOR A MAXIMUM BLOW COUNT OF 250 BLOWS PER FOOT. ANY SITUATION REQUIRING MORE THAN 250 BLOWS PER FOOT THE NEXT SIZE HAMMER JOB SHOULD BE USED.
4) ALL BLOW COUNTS ARE CALCULATED VALUES BASED ON THE ENGINEERING NEWS FORMULA USING A 1.25 FACTOR.
S = {1/[[(2*E)/(1.25*P)]-.1]}*12; BLOW COUNT (S) IS IN BLOWS PER FOOT, HAMMER ENERGY (E) IS IN FOOT POUNDS, ALLOWABLE BEARING LOAD (P) IS IN POUNDS
P = (A*YIELD STRENGTH)/1.85