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OFFSHORE ENERGY SERVICES, INC

Grade **X-42** Min. Yield **42,000 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. (Sq. In.)	Weight Per Ft. (Lbs.)	Pipe Yield (Tons)	Allow. Brg. Load (P) (1.85 Safe F.)	Hammer Energy (E) in ft-lbs										
							D-12	D-15	D-22	D-30	D-30.02	D-36	D-46	D-62	D-80	D-100	
14	3/8	13 1/4	16.05	55	337	182	22,500	28,488	39,700	54,250	66,100	83,100	105,000	152,538	225,000	300,000	
14	1/2	13	21.21	73	445	241	-	-	161.49	86.84	63.09	45.31	33.24	21.06	13.52	9.86	
14	5/8	12 3/4	26.26	90	551	298	-	-	375.70	149.45	100.27	68.11	48.20	29.49	18.52	13.38	
14	3/4	12 1/2	31.22	107	656	354	-	-	-	263.24	155.07	97.56	66.01	38.79	23.82	17.02	
14	1	12	40.84	140	858	464	-	-	-	-	243.82	137.00	87.57	49.11	29.42	20.79	
16	3/8	15 1/4	18.41	63	387	209	-	-	-	-	276.50	147.80	73.52	41.63	28.73	-	
16	1/2	15	24.35	84	511	276	-	-	230.79	111.42	78.40	55.01	39.73	24.79	15.76	11.44	
16	5/8	14 3/4	30.19	104	634	343	-	-	-	210.41	131.39	85.38	58.84	35.14	21.77	15.62	
16	3/4	14 1/2	35.93	124	755	408	-	-	-	220.95	127.66	82.69	46.86	28.22	19.99	-	
16	1	14	47.12	162	990	535	-	-	-	-	190.51	113.27	60.25	35.16	24.57	-	
20	3/8	19 1/4	23.12	79	486	262	-	-	-	-	210.41	93.66	50.74	34.42	-	-	
20	1/2	19	30.63	105	643	348	-	-	183.58	118.24	78.27	54.53	32.88	20.48	14.73	-	
20	5/8	18 3/4	38.04	131	799	432	-	-	-	230.39	131.58	84.75	47.82	28.73	20.33	-	
20	3/4	18 1/2	45.36	156	952	515	-	-	-	222.44	126.96	65.72	37.88	26.33	-	-	
20	1	18	59.69	205	1,253	678	-	-	-	-	190.02	87.58	48.08	32.77	-	-	
24	3/8	23 1/4	27.83	96	584	316	-	-	-	-	-	149.81	72.44	47.21	-	-	
24	1/2	23	36.91	127	775	419	-	-	321.12	178.11	108.67	72.34	41.92	25.55	18.19	-	
24	5/8	22 3/4	45.90	158	964	521	-	-	-	-	204.58	119.44	62.75	36.41	25.38	-	
24	3/4	22 1/2	54.78	188	1,150	622	-	-	-	-	-	195.98	89.40	48.88	33.27	-	
24	1	22	72.26	248	1,517	820	-	-	-	-	-	342.06	124.69	63.34	41.97	-	
26	3/8	25 1/4	30.19	104	634	343	-	-	-	-	-	246.01	100.46	62.30	-	-	
26	1/2	25	40.06	138	841	455	-	-	-	220.95	127.66	82.69	46.86	28.22	19.99	-	
26	5/8	24 3/4	49.82	171	1,046	566	-	-	-	-	259.67	141.60	71.26	40.56	28.05	-	
26	3/4	24 1/2	59.49	205	1,249	675	-	-	-	-	-	247.30	103.66	54.98	37.00	-	
26	1	24	78.54	270	1,649	892	-	-	-	-	-	-	148.71	72.06	46.99	-	
26	1 1/4	23 1/2	97.19	334	2,041	1,103	-	-	-	-	-	-	325.41	117.76	70.92	-	
26	1 1/2	23	115.45	397	2,425	1,311	-	-	-	-	-	-	-	190.02	102.10	-	
30	1/2	29	46.34	159	973	526	-	-	-	-	-	-	201.02	90.91	49.55	33.68	
30	5/8	28 3/4	57.68	198	1,211	655	-	-	-	-	-	-	-	138.91	68.60	45.02	
30	3/4	28 1/2	68.92	237	1,447	782	-	-	-	-	-	-	-	214.34	92.25	58.03	
30	1	28	91.11	313	1,913	1,034	-	-	-	-	-	-	-	-	162.05	90.86	
30	1 1/4	27 1/2	112.90	388	2,371	1,282	-	-	-	-	-	-	-	-	296.65	137.51	
30	1 1/2	27	134.30	462	2,820	1,525	-	-	-	-	-	-	-	-	-	208.96	
36	5/8	34 3/4	69.46	239	1,459	788	-	-	-	-	-	-	-	219.09	93.53	58.71	
36	3/4	34 1/2	83.06	286	1,744	943	-	-	-	-	-	-	-	-	131.98	77.64	
36	1	34	109.96	378	2,309	1,248	-	-	-	-	-	-	-	-	271.41	130.03	
36	1 1/4	33 1/2	136.46	469	2,866	1,549	-	-	-	-	-	-	-	-	-	218.44	
36	1 1/2	33	162.58	559	3,414	1,845	-	-	-	-	-	-	-	-	-	399.37	
42	3/8	41 1/4	49.04	169	1,030	557	-	-	-	-	-	-	235.75	100.65	53.72	36.24	
42	1/2	41	65.19	224	1,369	740	-	-	-	-	-	-	-	184.87	83.77	53.49	
42	5/8	40 3/4	81.24	279	1,706	922	-	-	-	-	-	-	-	371.20	126.06	74.88	
42	3/4	40 1/2	97.19	334	2,041	1,103	-	-	-	-	-	-	-	-	190.02	102.10	
42	1	40	128.81	443	2,705	1,462	-	-	-	-	-	-	-	-	-	187.07	
42	1 1/4	39 1/2	160.03	550	3,361	1,817	-	-	-	-	-	-	-	-	-	373.58	
42	1 1/2	39	190.85	656	4,008	2,166	-	-	-	-	-	-	-	-	-	-	
42	1 3/4	38 1/2	221.29	761	4,647	2,512	-	-	-	-	-	-	-	-	-	-	
48	3/4	46 1/2	111.33	383	2,338	1,264	-	-	-	-	-	-	-	-	282.80	133.47	
48	1	46	147.66	508	3,101	1,676	-	-	-	-	-	-	-	-	-	277.84	
48	1 1/4	45 1/2	183.59	631	3,855	2,084	-	-	-	-	-	-	-	-	-	-	
48	1 1/2	45	219.13	753	4,602	2,487	-	-	-	-	-	-	-	-	-	-	
48	1 3/4	44 1/2	254.27	874	5,340	2,886	-	-	-	-	-	-	-	-	-	-	
48	2	44	289.03	994	6,070	3,281	-	-	-	-	-	-	-	-	-	-	
48	2 1/2	43	357.36	1,229	7,504	4,056	-	-	-	-	-	-	-	-	-	-	
60	1	58	185.35	637	3,892	2,104	-	-	-	-	-	-	-	-	-	-	
60	1 1/4	57 1/2	230.71	793	4,845	2,619	-	-	-	-	-	-	-	-	-	-	
60	1 1/2	57	275.68	948	5,789	3,129	-	-	-	-	-	-	-	-	-	-	
60	1 3/4	56 1/2	320.25	1,101	6,725	3,635	-	-	-	-	-	-	-	-	-	-	
60	2	56	364.43	1,253	7,653	4,137	-	-	-	-	-	-	-	-	-	-	
60	2 1/4	55 1/2	408.21	1,403	8,572	4,634	-	-	-	-	-	-	-	-	-	-	
60	2 1/2	55	451.61	1,553	9,484	5,126	-	-	-	-	-	-	-	-	-	-	
72	1	70	223.05	767	4,684	2,532	-	-	-	-	-	-	-	-	-	-	
72	1 1/2	69	332.22	1,142	6,977	3,771	-	-	-	-	-	-	-	-	-	-	
72	2	68	439.82	1,512	9,236	4,993	-	-	-	-	-	-	-	-	-	-	
72	2 1/2	67	545.85	1,877	11,463	6,196	-	-	-	-	-	-	-	-	-	-	
72	3	66	650.31	2,236	13,657	7,382	-	-	-	-	-	-	-	-	-	-	

- 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.

$$S = \frac{1}{1 + \left(\frac{2 \cdot E}{1.25 \cdot P} \right)^{1.25}}$$
 BLOW COUNT (S) IS IN BLOWS PER FOOT, HAMMER ENERGY (E) IS IN FOOT POUNDS, ALLOWABLE BEARING LOAD (P) IS IN POUNDS

$$P = (A \cdot \text{YIELD STRENGTH}) / 1.85$$

Hammer Services - Casing Crews - Tubing Tongs - Laydown Units - Fabrication - Whipstocks

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