



**Hammer Energy Output and Pile Bearing Chart**

**J&M Model 160 Hydraulic Impact Hammer** The energy output is based on the identical Piston/Travel calculations utilized in the **FHWA Gates Formula**. The pile bearing chart is based on the FHWA Gates Formula for pile bearing and is provided for the user's convenience only.

$$\text{Pile Bearing (tons)} = ((1.75 * \text{SQRT "E" LOG10} * 10N) - 100) / 2$$

**E = Developed Energy and N = Number of Blows Per Inch**

**APE has no preference for these particular formulas and calculations over any other.**

Ram Weight(lbs): **16,000**

Stroke (in.)	Energy (ft-lbs)	Pile Set (Blows per inch)																		
		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
4	5,280	33	44	52	58	63	67	71	74	77	80	82	84	86	88	90	92	93	95	96
6	8,000	52	66	75	83	89	94	99	103	107	110	113	115	118	120	122	125	127	128	130
8	10,720	68	84	95	104	111	117	122	127	131	135	138	142	144	147	150	152	154	156	158
10	13,280	81	99	112	121	129	136	142	147	152	156	160	163	166	169	172	175	177	180	182
12	16,000	94	113	127	138	147	154	161	166	171	176	180	184	188	191	194	197	200	202	205
14	18,720	106	127	142	153	163	171	178	184	189	194	199	203	207	211	214	217	220	223	225
16	21,280	116	139	154	167	177	186	193	199	205	211	215	220	224	228	231	235	238	241	244
18	24,000	126	150	167	180	191	200	208	215	221	227	232	237	241	245	249	252	256	259	262
20	26,720	136	161	179	193	204	214	222	230	236	242	247	252	257	261	265	269	273	276	279
22	29,280	145	171	190	204	216	226	235	243	249	256	261	267	271	276	280	284	288	291	295
24	32,000	154	181	201	216	228	239	248	256	263	270	275	281	286	291	295	299	303	307	310
26	34,720	162	191	211	227	240	251	260	269	276	283	289	295	300	305	309	314	318	322	325
28	37,280	170	200	221	237	250	262	272	280	288	295	301	307	313	318	322	327	331	335	339
30	40,000	178	208	230	247	261	273	283	292	300	307	314	320	326	331	336	340	345	349	353
32	42,720	185	217	240	257	272	284	294	303	312	319	326	332	338	344	349	353	358	362	366
34	45,280	192	225	248	266	281	294	304	314	322	330	337	344	350	355	360	365	370	374	378
36	48,000	199	233	257	276	291	304	315	325	333	341	349	355	361	367	373	378	382	387	391
38	50,720	206	241	266	285	300	314	325	335	344	352	360	367	373	379	384	390	394	399	403
40	53,280	213	248	274	293	309	323	334	345	354	362	370	377	383	390	395	400	406	410	415
42	56,000	219	256	282	302	318	332	344	355	364	373	381	388	394	401	406	412	417	422	426
44	58,720	226	263	290	310	327	341	354	364	374	383	391	398	405	411	417	423	428	433	438
46	61,120	231	270	297	318	335	349	362	373	383	392	400	407	414	421	427	432	438	443	448
48	64,000	238	277	305	326	344	358	371	383	393	402	410	418	425	432	438	444	449	454	459