



(800) 248-8498

Hammer Energy Output and Pile Bearing Chart APE Model 60-4 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.

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

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): 120,000

Stroke (feet)	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
0.25	30,000	147	174	193	207	219	230	238	246	253	259	265	270	275	280	284	288	292	295	299
0.50	60,000	229	267	293	314	331	345	358	369	379	388	396	403	410	416	422	428	433	438	443
0.75	90,000	292	338	371	396	417	434	450	463	475	486	496	505	513	521	529	535	542	548	554
1.00	120,000	344	398	436	465	489	509	527	542	556	569	580	591	601	610	618	626	634	641	647
1.25	150,000	391	451	493	526	553	575	595	612	628	642	655	666	677	687	697	706	714	722	730
1.50	180,000	433	498	545	581	610	635	656	675	692	708	722	735	747	758	768	778	787	796	804
1.75	210,000	472	542	592	631	663	690	713	734	752	769	784	798	811	823	834	844	854	864	873
2.00	240,000	508	583	637	678	712	741	766	788	807	825	841	856	870	883	895	906	917	927	936
2.25	270,000	542	622	678	722	758	789	815	839	859	878	895	911	926	939	952	964	975	986	996
2.50	300,000	574	658	718	764	802	834	862	887	909	928	946	963	979	993	1006	1019	1031	1042	1053
2.75	330,000	604	692	755	804	844	877	907	932	955	976	995	1013	1029	1044	1058	1071	1084	1095	1107
3.00	360,000	633	725	791	842	884	919	949	976	1000	1022	1042	1060	1077	1092	1107	1121	1134	1146	1158
3.25	390,000	661	757	825	878	922	958	990	1018	1043	1065	1086	1105	1123	1139	1154	1169	1182	1195	1207
3.50	420,000	688	788	858	913	958	996	1029	1058	1084	1108	1129	1149	1167	1184	1200	1215	1229	1242	1255
3.75	450,000	714	817	890	947	994	1033	1067	1097	1124	1148	1170	1191	1210	1227	1244	1259	1274	1288	1301
4.00	480,000	739	845	921	980	1028	1069	1104	1135	1162	1188	1210	1232	1251	1269	1286	1302	1317	1331	1345

Refusal for APE Hydraulic Impact Hammers is 10 blows per inch Maximum