



(800) 248-8498

## Diesel Hammer Energy Output and Pile Bearing Chart APE Model D225 -42 or -52 Diesel 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.

$$\text{Pile Bearing (metric tons)} = (((1.75 * \text{SQRT "E" LOG}_{10}(10N) - 100) / 2000) * 0.00045359237$$

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

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

Enter Ram Weight in kgs: 22,500

| Blows<br>(per minute) | Stroke<br>(m) | Energy<br>(kNm) | Pile Set (Blows per cm) |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|-----------------------|---------------|-----------------|-------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|                       |               |                 | 2.5                     | 5.1  | 7.62 | 10   | 13   | 15   | 18   | 20   | 23   | 25   | 28   | 30   | 33   | 36   | 38   | 41   | 43   | 46   | 48   |
| 60                    | 1.22          | 269.19          | 1161                    | 1336 | 1460 | 1556 | 1634 | 1700 | 1758 | 1808 | 1854 | 1895 | 1932 | 1966 | 1998 | 2028 | 2056 | 2082 | 2106 | 2130 | 2152 |
| 59                    | 1.27          | 280.23          | 1188                    | 1365 | 1492 | 1590 | 1670 | 1737 | 1796 | 1848 | 1894 | 1936 | 1974 | 2009 | 2041 | 2072 | 2100 | 2127 | 2152 | 2175 | 2198 |
| 58                    | 1.32          | 291.26          | 1213                    | 1395 | 1523 | 1623 | 1705 | 1774 | 1833 | 1886 | 1933 | 1976 | 2015 | 2051 | 2084 | 2115 | 2143 | 2171 | 2196 | 2220 | 2243 |
| 57                    | 1.37          | 302.29          | 1238                    | 1423 | 1554 | 1656 | 1739 | 1809 | 1870 | 1924 | 1972 | 2015 | 2055 | 2091 | 2125 | 2157 | 2186 | 2214 | 2240 | 2264 | 2288 |
| 56                    | 1.42          | 313.32          | 1263                    | 1451 | 1585 | 1688 | 1773 | 1844 | 1906 | 1961 | 2010 | 2054 | 2094 | 2132 | 2166 | 2198 | 2228 | 2256 | 2283 | 2308 | 2331 |
| 55                    | 1.47          | 324.35          | 1287                    | 1479 | 1615 | 1720 | 1806 | 1879 | 1942 | 1997 | 2047 | 2092 | 2133 | 2171 | 2206 | 2239 | 2269 | 2298 | 2325 | 2350 | 2374 |
| 54                    | 1.52          | 335.39          | 1311                    | 1506 | 1644 | 1751 | 1839 | 1913 | 1977 | 2033 | 2084 | 2130 | 2171 | 2210 | 2245 | 2278 | 2309 | 2339 | 2366 | 2392 | 2417 |
| 53                    | 1.58          | 348.63          | 1339                    | 1538 | 1679 | 1788 | 1877 | 1952 | 2018 | 2075 | 2127 | 2174 | 2216 | 2255 | 2292 | 2325 | 2357 | 2387 | 2415 | 2441 | 2466 |
| 52                    | 1.62          | 357.45          | 1358                    | 1559 | 1701 | 1812 | 1902 | 1979 | 2045 | 2103 | 2155 | 2203 | 2246 | 2285 | 2322 | 2356 | 2388 | 2418 | 2447 | 2473 | 2499 |
| 51                    | 1.68          | 370.69          | 1385                    | 1590 | 1735 | 1847 | 1939 | 2017 | 2085 | 2144 | 2197 | 2245 | 2289 | 2330 | 2367 | 2402 | 2434 | 2465 | 2494 | 2521 | 2547 |
| 50                    | 1.75          | 386.14          | 1416                    | 1625 | 1773 | 1888 | 1982 | 2061 | 2130 | 2191 | 2245 | 2294 | 2339 | 2380 | 2418 | 2454 | 2487 | 2518 | 2548 | 2576 | 2602 |
| 49                    | 1.83          | 403.79          | 1451                    | 1665 | 1816 | 1934 | 2030 | 2111 | 2181 | 2243 | 2299 | 2349 | 2395 | 2437 | 2476 | 2512 | 2546 | 2578 | 2608 | 2637 | 2664 |
| 48                    | 1.91          | 421.44          | 1485                    | 1703 | 1858 | 1978 | 2076 | 2159 | 2231 | 2295 | 2351 | 2403 | 2449 | 2492 | 2532 | 2569 | 2604 | 2637 | 2668 | 2697 | 2724 |
| 47                    | 1.98          | 436.89          | 1514                    | 1737 | 1894 | 2016 | 2116 | 2201 | 2274 | 2338 | 2396 | 2448 | 2496 | 2540 | 2581 | 2618 | 2654 | 2687 | 2718 | 2748 | 2776 |
| 46                    | 2.08          | 458.95          | 1555                    | 1783 | 1945 | 2070 | 2172 | 2259 | 2334 | 2400 | 2459 | 2513 | 2562 | 2606 | 2648 | 2687 | 2723 | 2757 | 2789 | 2820 | 2848 |
| 45                    | 2.19          | 483.22          | 1599                    | 1833 | 1999 | 2127 | 2232 | 2321 | 2398 | 2466 | 2527 | 2582 | 2632 | 2678 | 2721 | 2760 | 2797 | 2832 | 2865 | 2897 | 2926 |
| 44                    | 2.29          | 505.29          | 1638                    | 1877 | 2047 | 2178 | 2286 | 2376 | 2455 | 2524 | 2587 | 2643 | 2694 | 2741 | 2785 | 2825 | 2864 | 2899 | 2933 | 2965 | 2995 |
| 43                    | 2.39          | 527.35          | 1676                    | 1920 | 2094 | 2228 | 2338 | 2430 | 2511 | 2582 | 2645 | 2703 | 2755 | 2803 | 2848 | 2889 | 2928 | 2965 | 2999 | 3032 | 3062 |
| 42                    | 2.49          | 549.42          | 1714                    | 1963 | 2140 | 2277 | 2389 | 2483 | 2565 | 2638 | 2703 | 2761 | 2815 | 2864 | 2909 | 2952 | 2991 | 3029 | 3064 | 3097 | 3128 |
| 41                    | 2.62          | 578.10          | 1761                    | 2017 | 2198 | 2339 | 2454 | 2551 | 2635 | 2709 | 2776 | 2836 | 2890 | 2941 | 2988 | 3031 | 3072 | 3110 | 3146 | 3180 | 3212 |
| 40                    | 2.74          | 604.58          | 1804                    | 2065 | 2251 | 2394 | 2512 | 2611 | 2697 | 2773 | 2841 | 2903 | 2959 | 3010 | 3058 | 3103 | 3144 | 3183 | 3220 | 3255 | 3288 |
| 39                    | 2.90          | 639.88          | 1859                    | 2128 | 2319 | 2467 | 2588 | 2690 | 2779 | 2857 | 2927 | 2990 | 3048 | 3101 | 3150 | 3196 | 3238 | 3279 | 3316 | 3352 | 3386 |
| 38                    | 3.05          | 672.98          | 1910                    | 2186 | 2382 | 2533 | 2657 | 2762 | 2853 | 2933 | 3005 | 3069 | 3129 | 3183 | 3233 | 3280 | 3324 | 3365 | 3404 | 3441 | 3476 |
| 37                    | 3.20          | 706.08          | 1960                    | 2242 | 2442 | 2598 | 2725 | 2832 | 2925 | 3007 | 3081 | 3147 | 3208 | 3263 | 3315 | 3363 | 3408 | 3450 | 3490 | 3528 | 3564 |
| 36                    | 3.40          | 750.21          | 2024                    | 2315 | 2522 | 2682 | 2813 | 2923 | 3019 | 3104 | 3179 | 3248 | 3310 | 3368 | 3421 | 3471 | 3517 | 3560 | 3601 | 3640 | 3677 |