

# Save Fuel Costs: Hydraulic Excavator Simulator

Making simulators part of your overall operator training program has many benefits. One of these being cost savings from reduced fuel consumption. When an organization uses a simulator, it avoids burning fuel.

## Typical Work Application Descriptions

In order to calculate fuel use, typical Hydraulic Excavator work applications must be taken into consideration. Caterpillar classifies hydraulic excavator work applications into three categories.

*Low:* Mostly shallow depth urban utility construction where excavator sets pipe and digs less than 50% of daily work schedule. Sandy loam, free flowing, low density material. Most scrap handling applications. Little traveling and little or no impact.

*Medium:* Most residential pipeline and cabling applications. Continuous mass excavation and trenching in natural bed clay soils. Digging 60%-85% of daily work schedule. Most log loading applications. Some traveling and steady, full throttle operation.

*High:* Continuous trenching or truck loading in rock or shot rock soils. Most pipeline applications in hard rocky material. Digging 90-95% of the daily work schedule. Large amount of travel over rough ground. Working on rock floor with constant high load factor and high impact.

	Low		Medium		High	
Load Factor*	20%-40%		40%-60%		60%-80%	
Fuel Consumption	Gallons	Liters	Gallons	Liters	Gallons	Liters
	3.0-6.1	11.5-23.0	6.1-9.1	23.0-34.5	9.1-12.0	34.5-45.5

## Fuel Avoidance Savings

(Formula: Hourly consumption x Local Unit Prices of Fuel = Hourly Fuel Cost)

If you use simulator training one week a month (40 hours), you will avoid using fuel as follows:

	120 to 244 Gallons \$3.85**	460.0 to 920.0 Liters \$1.02**
Total Savings	\$462.00 to \$939.40 (1 week) \$5,544.00 to \$11,272.80 (12 weeks)	\$469.20 to \$938.40 (1 week) \$5,630.40 to \$11,260.80 (12 weeks)

*Note:* All estimates based on a low engine load factor.

\*Average engine load factor based on application description for each range.

\*\*Cost of fuel will fluctuate with market and by country.

How Can You Benefit? [learn@catsimulators.com](mailto:learn@catsimulators.com)

**CAT<sup>®</sup> SIMULATORS**



When using this information, keep in mind the many variables which can affect fuel consumption. Two operators of different temperament or attitude operating identical machines side by side in the same material can have as much as 10%-12% difference in their consumption rates. However, the ranges shown should be applicable across a wide spectrum of conditions. Your Cat® Dealer representative can help select the most reasonable estimate for your specific situation. Keep in mind also that a fuel consumption study measured over a short period of operation may give higher fuel consumption than shown here. This information was figured for “normal” inefficiencies in the working cycle and will more closely relate to “normal” day to day operation.



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