

Diesel fuel efficiency protocol from the Canadian Hydrogen Energy Company Ltd.

Fuel Efficiency Protocol Objective:

1. To establish a Trip Data “Base Line” which is conducted under controlled conditions on a specific vehicle (Cab or Cab and Trailer). All pertinent data must be accurately detailed and recorded. Base Line data collection to be performed with HFI Unit "OFF".
2. Perform Trip Collection Session(s) with HFI Unit “ON” (CerBond™ added).
3. Each subsequent Trip Collection Session will have selective parameter(s) [varied by design] for comparative purposes.
4. The Base Line Data Point will then be compared to all other Trip Data Collection Sessions (where appropriate).
5. Data variable variations must be kept to a minimum as analysis/conclusions may be affected.

Data Collection:

A Base Trip Data Collection Point and 1 Trip Collection Sessions have been recorded using a CAT 430. Data Collection sessions occurred on June 3, 2005.

- Select a start-return route of 100 miles. Base Trip Data Collection
 - Ensure the vehicle (Cab only or Cab and Trailer) is readied for the trip.
 - Check /correct/record tire pressure
 - Fill fuel tank(s) to maximum and record fuel data
 - Weigh vehicle and driver at certified scale at same location as fuel fill location, e.g., Fifth Wheel
 - Record atmospheric temperature
 - Record prevailing wind data
 - Ready to begin trip 'first leg'
 - Record odometer reading
 - Ensure HR unit is OFF
 - Record time of trip "START"
 - Ensure constant speed`
 - Reach half-way point and begin return portion
 - Arrive to start location
 - Record time
 - Record odometer reading
 - Weigh vehicle and driver at same certified scale
 - Transfer data to Analysis Spreadsheet
- Base Data Collection Completed

Trip Data Collection:

Ready to collect Trip Data with CerBond™ added and to compare Base Data

- Ensure that minimum of 1 hour cool down
- Ensure that the maximum amounts of variables are the same as for Base Data (temp., wind, driver, weight, tire pressure, etc.)

- Fuel tanks should be filled to maximum (verify)
- Weigh vehicle at same certified scale
- Start trip, record time
- Match base driving speed(s), etc. as per Base Collection Trip
- Return to start and record data

Variables to be kept constant on each trip as compared to Base Trip:

Driver: Same

Vehicle: Same

* Tire pressure:

* Weight:

Driving Conditions:

* Speed: Same

* Cruise: Same

* Lane selection: Same

* Stop: Same

* Start. Etc: Same

Atmospheric Conditions:

* Temperature: Same

* Prevailing winds: Same

NOTE:

1. Distance and Time of Trips should be within 0.5%
2. Variable variations between Base Data and other trip data collection sessions may affect analysis/conclusions
3. All data to be recorded in appropriately bound Log Book

CONCLUSION FROM TEST RESULT:

The test conducted by Canadian Hydrogen Energy Company Ltd. is an on-the-road test that simulates normal highway driving conditions experienced by most truck driving fleets across the United States and Canada. The 'Real World' test enables accurate recording of: fuel consumption, mileage, weight, weather conditions, tire pressure, driver factor, and a predetermined route.

The use of the **CerBond™** resulted in significant increases in fuel economy. **After driving a mere 100 miles after adding CerBond™, fuel economy increased 16.15%.** These results indicate that the **CerBond™** has an immediate effect to the combustion chamber, providing better compression in the engine and increasing the efficiency in the fuel ignition system. (It should be noted that using **CerBond™** in diesel engines does not show full results until 500 to 1000 miles of use. This test data is based on only the first 100 miles after introduction of **CerBond™**).