

Preliminary Staff Proposal

Engine Package Certification Requirements

Emission Testing

- Engine manufacturer chooses Worst Case Vehicle (based on highest test weight and N/V ratio)
- Exhaust (FTP, SFTP, HWY NOx, 50F and 20F) and Evaporative (Diurnal, hot soak, running loss, ORVR) Emission Testing on Worst Case Vehicle
- Must meet LEV II LEV exhaust through 2015 MY and more stringent for future MYs, as well as evap stds. on Worst Case Vehicle

Package

- Engine and Controller with software/calibration
- Partial OBD System
 - No Evap Leak Check monitoring
 - Maybe include purge valve functional test (circuit plus flow check)
 - No transmission component monitoring except for components used for other engine diagnostics¹
 - Relaxed misfire monitoring requirement²
 - Relaxed cylinder air-fuel imbalance monitoring requirements³
 - Relaxed cold start monitoring requirement⁴
- Exhaust emission control system, including critical components (intake and exhaust manifolds, sensors, MAF housing)
- Evap: canister, purge valve, purge control logic, and flow diagnostic

Additional Requirements on Engine Manufacturer

- Provide vehicle parameters (max weight, etc.) for which engine package is appropriate
- Package Must Also Include:
 - Statement that system can only be installed in a vehicle or kit
 - With an N/V ratio less than or equal to a specified value, and
 - Below a specified weight
 - Statement that no changes may be made to the fuel metering system, ignition system, camshaft, or installation of any other component included in engine package, with exception of ARB approved aftermarket parts approved for engine

¹ if vehicle speed is used for other engine diagnostics, it must be diagnosed by the engine

² floor of 2.5% or 3x FTP stds, whichever is higher, for detection; some not yet defined relief to increase positive torque line to accommodate unknowns

³ malfunction threshold of 3x FTP stds instead of 1.5x

⁴ use identical calibration as certified vehicle using same engine or malfunction threshold of 3x FTP stds instead of 1.5x

- Notice explaining
 - ARB's authority to impose fines and penalties
 - Manufacturer's statement of origin process
 - Rules for required documentation, record keeping, notification, access to records
- Label affixed to engine when sold: include max curb weight, N/V, frontal area, and fuel tank capacity limits; indicate engine is for SPCNS
- Engine owner's manual and Installation Guidance (instruction manual): evap controls, fuel tank size and materials, SAE non-permeable hoses and connectors, fuel neck and ORVR capability, catalyst and O2 sensor locations, air intake/mass air flow location restrictions, gas cap etc.
- Warranty: engine package and emission controls

End User Paths

Path 1:Hobbyist (Not For Resale)

Registration Requirements

- Installs engine package certified by ARB for year engine certified
- Visual vehicle inspection by Referee Station
 - Fuel Tank, Canister Placement, MIL light, service port placement must be accessible for low-pressure evap test, and that cars are built to specifications
- Biennial **referee station** smog check and low-pressure evap test, and not exempt for first 6 years

Path 2:Turn Key Vehicle Builder (For Resale)

*In addition to Path 1 requirements

Additional Requirements on Engine Manufacturer

- Must review info submitted by turnkey vehicle builders/assemblers to ensure engine packages are installed properly
- Provide a "Manufacturer's Statement of Origin" to assembler/show vehicles it believes have been built in conformance

Builder/Assembler/Seller Requirements

- Maintains written and photographic records documenting vehicle compliance
- Notifies ARB within 10 days of assembling the first vehicle
- Reports the VIN of the newly built vehicle to the engine manufacturer