Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Conduct revalidation process for the legality and serviceability of vehicular liquefied petroleum gas tank
Code	111761L4
Range	This unit of competency is applicable to technicians working at vehicular liquefied petroleum gas (LPG) tank servicing/inspection workshops. Practitioners should be able to master the recognised testing procedures for vehicular LPG tanks, the use of associated testing gear/equipment and be familiar with the associated routine maintenance in accordance with the guidelines of the corresponding manufacturer's manual. They should also be capable of providing written evaluation report upon the completion of the test.
Level	4
Credit	6 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Nature, characteristics, handling procedures and safety precautions of liquefied petroleum gas (LPG), principles of LPG system operation, and the legislative requirements on pressure vessel certification tests and procedures) • Master the physical natures and characteristics of LPG and the constitution of LPG used on local vehicle systems. • Master the handling procedures and safety precautions of LPG in accordance with the associated legislation and the requirements of occupational safety and health, environmental protection, road and vehicle safety. • Good understanding of the structure and operating principles of the LPG systems onboard, including the system components and LPG tank. • Good understanding of the workshop setup, including safety, leakage detection and warning system, the operation and maintenance of testing gear/equipment. • Master the principles of LPG transfer in liquid phase, flaring, pressure tests and fuel refill upon tests. • Good understanding of the handling procedures for the abandoned LPG tanks. • Master the legislative requirements on the revalidation of vehicular LPG tanks and the associated test setup in accordance with the requirements on pressure vessels and LPG tanks set by the local authority concerned, such as the Electrical and Mechanical Services Department, the Occupational, Safety and Health Council, etc.

	2. Performance (test procedures of vehicular liquefied petroleum gas (LPG) tank for revalidation, check and repair the components attached to the LPG tank • Conduct routine maintenance for the legality and proper function of revalidation test gear/equipment and peripheral setup, including pressure gauge calibration, and the associated safety system in the workshop. • Conduct the pre-pressure test procedures, including but not limited to leakage detection, visual inspection, remaining liquid fuel transfer and residual gas flaring. • Remove, inspect and repair all components attached to the LPG tank. • Conduct the hydraulic test procedures and visual inspection for the LPG tank at the designated pressure and holding time, and the gas leak test procedures after the replacement of all attached parts/components under precautionary measures. • Conduct the procedures for purging into service, and the revalidation particulars marking on the tank. • Review the testing procedures and equipment setup, and compile a written report for the test result and abnormalities, and suggestions for improvement.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is: • Capable of mastering the maintenance and operating procedures of various liquefied petroleum gas (LPG) tank testing gear/equipment including safety systems in the workshop; • Capable of good understanding the principles of pressure vessel testing procedures; • Capable of safely conducting the pre-pressure test, pressure tests, purging into service and fuel refilling procedures for the LPG tank in accordance with designated guidelines on the working environment, equipment and safety setup, testing conditions, and the requirements of occupational safety and health, environmental protection, road and vehicle safety; • Capable of removing, inspecting, repairing and carefully replacing all the components attached to the LPG tank; • Capable of evaluating the serviceability of LPG tank and associated components by the testing result and the adherence to the standards concerned; and • Capable of compiling a written report for the test results and abnormalities upon completion of work, and suggestions for improvement.
Remark	The credit value of this competency unit assumes that the practitioner already possesses extensive knowledge of pressure vessel inspection, handling of liquefied petroleum gas (LPG), and understanding of the operation of LPG engines and associated systems. The revalidation process should be performed by a recognised competent person (Class 6) in LPG vehicle under the supervision of recognised competent person (Class 1) in LPG vehicle. The major legislations/rules involved in this unit of competency are as follows: • Road Traffic Regulations • Gas Safety Ordinance • Occupational Safety and Health Ordinance