PART 1

GENERAL STANDARDS FOR PARKING

1.1 Motor vehicles using CNG in their propulsion system shall be parked in regular parking areas in streets, avenues, highways and open parks, away from artificial heat sources and open fire.

1.2 When the motor vehicle is parked in a closed area for more than 8 hours, its owner must shut the primary manual valve.

1.3 SIGNS

1.3.1 Signs shall be constructed of metal plate with black, 7 cm height letters on a yellow background, according to the corresponding IRAM standard.

1.3.2 In closed public places for parking vehicles using different fuels in their propulsion system, the area for CNG vehicles shall be identified with signs bearing the following text: "Gas fuelled vehicles" and "No smoking".

1.4 FIRE EXTINGUISHERS

1.4.1 The area in closed public garages for parking bi-fuel vehicles shall be fitted with fire extinguishers, constructed and installed according to the corresponding IRAM standards.

1.4.2 Fire extinguishers shall be 10 kg tri class dry powder type with potassium base. Such area shall be fitted with one fire extinguisher containing 50 g of such product per m2. One extinguisher shall be the minimum.

PART II

CHARACTERISTICS OF CLOSED PARKING AREAS

1.1 Closed parking areas shall comply with the corresponding rules in force and the indications hereinafter included. They shall also be approved by the pertinent authority.

1.1.1 They shall preferably be located in ground floors or upper storey.

1.1.2 They shall include natural ventilation.

In case they cannot comply with this requirement, they shall be fitted with forced ventilation systems renewing 20 times the air volumes of that area per hour.

Extractors shall be fitted with increased safety motors without electrical or mechanical spark producing components.

1.1.3 Parking areas of vehicles using different fuels in their propulsion systems must include a special parking area for CNG vehicles.

1.1.4 These vehicles shall be 3 m away from all ignition sources and open flames.

1.1.5 Lighting devices on this area shall be shielded and explosion proof.

1.1.6 Besides all the indicated requirements, underground parking areas must include a permanent forced ventilation system which capacity shall be similar to the one indicated in 1.1.2.

1.1.7 If there is no permanent forced ventilation, an automatic gas detection system shall be installed, with gas sniffers located at roof level which shall trigger an acoustic and visual alarm fitted close to the permanent personnel's area. This system shall operate as of the electric power network and batteries.
A detector shall be placed every 100 m^2 of that area. At least two units shall be installed. They shall be shielded, and shall operate at 25% of the CNG lower limit of hazardous concentration.

1.1.8 When public garages are in the underground of residential buildings, any of their openings must be at least 3 m away from the garage ventilation openings.

1.1.9 Residential houses garages should not communicate directly with the house, especially when their ventilation is not optimal.
If they are located underground, they should be fitted with adequate natural ventilation.

PART III

1. Difficulties and accidents

1.1. Leakages while the vehicle is on the highway

a) Try to drive away from the main road and park your vehicle in a secondary one
b) Stop the engine and close the operating valves of CNG cylinders.
c) Do not activate electrical installation devices
d) You must be well aware that you must not smoke, use the vehicles' lights or re ignite the engine.

1.2. How to proceed in case of accidents

In case of a traffic accident, the following is recommended.

1.2.1. Accidents not affecting the cylinder and its components

a) Accidents causing fire

The fire extinguisher provided with each vehicle must be used right away. If the extinguisher is emptied and the fire has not been quenched, blankets, dust, etc shall be used.

b) Mechanical problems

If the accident, crash, overturning, etc makes the vehicle unsafe for travel, the corresponding breakdown truck must be called and the vehicle parked at the side of the road or street.

1.2.2. Accidents affecting the cylinders or its components

a) General recommendations

If an accident results in CNG leakages, people shall be evacuated from that area and all sources of ignition shall be eliminated.

b) Passengers aboard the vehicle shall descend when the vehicle stops

c) Except for those people in charge of preventing accidents, the rest should be kept away from the area.

d) The primary manual valve shall be closed. In case this can not be done, the leaking pipe shall be plugged so as to shut off gas flow

e) Policemen and firefighters shall be called to the area if necessary

f) Water or any other adequate means shall be used to maintain the container as cold as possible.

1.2.3. Accidents not causing fire

If the vehicle can be towed, it shall be moved to a non hazardous area. During transportation, valves or pipes shall not be damaged or broken.

1.2.4. Accidents causing fire

a) In the case of accidents causing fire, try to apply wherever possible, large amounts of water to all the vehicle surfaces exposed to heat, especially to cylinders

b) If the valve that has to be closed is in the fire area, use abundant water or other elements fit for this purpose. Precautions shall be taken to avoid the worsening of fire.
If the fire is not severe, it may be put out with the vehicle's portable fire extinguisher, directly pointed towards the gas discharge.

c) If the fire can not be put out, water is not enough to cool the cylinder, pressure increase is observed and the fire seems to aggravate, people must be immediately evacuated from the area and taken to a safe place.

d) If water has cooled the cylinder enough and the fire is safely under control, it shall not be extinguished until leakages are eliminated.

PART IV

1. Instructions for CNG filling

Dispensers close to filling hoses shall bear a sign readily visible with the following text (instructions for dispensing attendant)

a) Check the approval sticker to identify the vehicle to be filled.

b) Check that "no smoking" signs are observed

c) Ensure vehicle is parked in a suitable area, engine off and handbrake on. Ask the driver to get out of the vehicle and observe the process

d) Check that all the electrical components, including the radio system are off.

e) Check the motor vehicle certificate to ensure that the system complies with the regulations in force.

f) Ensure the absence of leakages in the gas circuit before refueling the cylinder/s.

g) Check that the fuel valve area is clean and in good conditions.

2. Filling Procedure

The following instructions must appear next to or included in the previously described sign:

a) If necessary, clean and remove the protecting cap from the valve connection outlet to fill the motor vehicle.

b) Fit the hose nozzle assembly into the fuel valve connection outlet.

c) Vehicle circulation in the area directly next to the dispensers is not advised.

d) Slowly open the CNG fuel valve from the hose to the cylinder (gas must be introduced gradually to avoid shock wave overpressure and a fast temperature increase.

e) Once the filling process is through, close the fuel valve. The driver shall especially verify that it is done.

f) Carefully disconnect the hose from the valve outlet, allowing venting of the remaining gas.

g) Return the hose to its correct hanging position.

h) Verify the absence of leakages in the gas circuit after filling

i) Indicate the driver when to get into the motor vehicle and start the ignition again.

3. Out of service vehicle

When the motor vehicle using CNG in its propulsion system is going to be out of service for a long time, the primary manual valve shall be closed and the engine shall be ignited until all the gas inside the pipes and equipment has been completely used.

4. Identification

Bi-fuel vehicles, either converted or designed for using CNG must bear in their rear part, a sticker with the wording "CNG propelled", indelibly and readily visible.