

Proposal for amendments to the 04 series of amendments to UN Regulation No. 110 (CNG and LNG vehicles)

The text below has been prepared by the expert from NGV Global as defined by the members of the task force on gas-fuelled vehicle regulations with the aim to address issues associated with periodic testing and periodic requalification of CNG cylinders. The original text is designed to replace the current text of the regulation but includes language from the existing regulation.

Please note that due to the reordering of the language from the existing paragraphs, these replacement paragraphs are proposed for purposes of clarity in the contiguous reading of the text in each of the appropriate paragraphs. The existing language, timing and technical provisions have been kept in tact so not to change any of the intent of the original paragraphs but, rather, to provide for smoother reading of the provisions as now presented. Newly created provisions are written in **bold**.

I. Proposal

Annex 3A, paragraph 4.1.4., replace to read:

4.1.4 Periodic **technical inspections and requalification of cylinders**

4.1.4.1 Periodic technical inspection

Periodic technical inspection means the inspection of vehicles performed at specified intervals by the competent agency approved or recognized by the national (or regional) Regulatory Authority. Guidelines for the visual inspection of each cylinder during its service life shall be provided by the cylinder manufacturer on the basis of use under service conditions specified herein.

Each cylinder shall be visually inspected at least every 48 months after the date of its entry into service on the vehicle (vehicle registration), and at the time of any reinstallation, for external damage and deterioration. The visual inspection shall be performed in accordance with the manufacturer's specifications: Cylinders without a label containing mandatory information or with labels containing mandatory information that are illegible in any way shall be removed from service. If the cylinder can be positively identified by **the** manufacturer and serial number, a replacement label may be applied, allowing the cylinder to remain in service. **If, where the support straps come in contact with the cylinder, any indication or evidence is found of corrosion, rust, cutting or fraying of material on the exterior surfaces, protruding gaskets, incisions, or other type of damage that could compromise the integrity of the cylinder, the inspector shall specify that a qualified, approved authority or workshop remove the straps for a more detailed, comprehensive inspection of these areas of the cylinder. Verification of such inspection shall be provided to the authorities performing the periodic technical inspection that the cylinders are (or are not) fit for continued service.**

4.1.4.2 Periodic requalification

Periodic requalification means an inspection or testing of cylinders by a competent agency approved or recognized by the Regulatory Authority at specified intervals whereby cylinders are re-qualified for a further period of service. For those countries that require a periodic requalification, the procedure shall be performed in accordance with the relevant regulations of the country(ies) where the cylinders are used and also in consideration of the manufacturer's specifications.

Periodic requalification shall be done at least every 48 months after the date of its entry into service on the vehicle (vehicle registration), and at the time of any reinstallation, for external damage and deterioration. The requalification shall be performed in accordance with the manufacturer's specifications: Cylinders without a label containing mandatory information or with labels containing mandatory information that are illegible in any way shall be removed from service. If the cylinder can be positively identified by manufacturer and serial number, a replacement label may be applied, allowing the cylinder to remain in service.

In accordance with additional paragraphs above, re-number the following paragraphs:

4.1.4.3 Cylinders involved in collisions

4.1.4.4 Cylinders involved in fires

Annex 3B, paragraph 2.1.3., replace to read:

2.1.3. **Periodic technical inspections and requalification of tanks**

2.1.3.1 Periodic technical inspection

Periodic technical inspection means the inspection of vehicles performed at specified intervals by the competent agency approved or recognized by the national (or regional) Regulatory Authority. Guidelines for the visual inspection of each tank during its service life shall be provided by the tank manufacturer on the basis of use under service conditions specified herein.

Each tank shall be visually inspected at least every 120 months after the date of its entry into service on the vehicle (vehicle registration), and at the time of any reinstallation, for external damage and deterioration. The visual inspection shall be performed in accordance with the manufacturer's specifications: Tanks without a label containing mandatory information or with labels containing mandatory information that are illegible in any way shall be removed from service. If the tank can be positively identified by manufacturer and serial number, a replacement label may be applied, allowing the tank to remain in service. **If, where the support straps come in contact with the tank, any indication or evidence is found of corrosion, incisions, or protruding gaskets on the exterior surfaces or other type of damage that could compromise the integrity of the tank, the inspector shall specify that a qualified, approved authority or workshop remove the straps for a more detailed, comprehensive inspection of these areas of the tank. Verification of such inspection shall be provided to the authorities performing the periodic technical inspection that the tanks are (or are not) fit for continued service.**

2.1.3.2 Periodic requalification

Periodic requalification means an inspection or testing of tanks by a competent agency approved or recognized by the Regulatory Authority at specified intervals whereby tanks are re-qualified for a further period of service. For those countries that require a periodic requalification, the procedure shall be performed in accordance with the relevant regulations of the country(ies) where the tanks are used and also in consideration of the manufacturer's specifications.

Periodic requalification shall be done at least every 120 months after the date of its entry into service on the vehicle (vehicle registration), and at the time of any reinstallation, for external damage and deterioration. The requalification shall be performed in accordance with the manufacturer's specifications: Tanks without a label containing mandatory information or with labels containing mandatory information that are illegible in any way shall be removed from service. If the tank can be positively identified by manufacturer and serial number, a replacement label may be applied, allowing the tank to remain in service.

II. Justification

1. As requested at the second meeting of task force on gas-fuelled vehicle regulations on 27th/28th June 2018 in Cologne, NGV Global provide a document that clarifies and distinguishes the recommendations for the periodic requalification process and for periodic inspection.
2. The outcome of this meeting was an amended wording for Annex 3A, paragraph 4.1.4. as written above and without changing the original intent or timing of the existing provisions for CNG cylinders. The paragraph 2.1.3. in Annex 3B is proposed to be similarly amended for LNG tanks. Differences in the language for LNG tanks about possible damages differs slightly from CNG cylinders due to the fact that the outer shell of LNG tanks that come into contact with the fastening straps typically are of stainless steel or possibly aluminium. As such, these materials are not susceptible to the exact same types of destructive elements that can be associated with CNG cylinders, be they of steel or synthetic materials.