



**Economic and Social  
Council**

Distr.

GENERAL

TRANS/WP.29/740  
31 August 2000

ENGLISH  
Original: ENGLISH  
and FRENCH

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**ECONOMIC COMMISSION FOR EUROPE**

INLAND TRANSPORT COMMITTEE

World Forum for Harmonization of Vehicle Regulations (WP.29)

DRAFT SUPPLEMENT 1 TO THE 01 SERIES OF AMENDMENTS  
TO REGULATION No. 67

(Equipment for liquefied petroleum gas)

Note: The text reproduced below was adopted by the Administrative Committee (AC.1) of the amended 1958 Agreement at its fifteenth session, following the recommendation by WP.29 at its one-hundred-and-twenty-first session. It is based on document TRANS/WP.29/2000/40, not amended (TRANS/WP.29/735, para. 118).

Paragraph 6.14.1.2., amend the value of "6,750 kPa" to read "4,500 kPa".

Paragraph 6.14.8.1., amend to read:

"6.14.8.1. The pressure relief valve shall be mounted inside the container or on the container, in the area where the fuel is in gaseous state."

Annex 8,

Insert a new paragraph 3.1.2., to read:

"3.1.2. This chapter covers, in addition to general specifications and tests for synthetic hoses, also specifications and tests applicable for specific material types of a synthetic hose."

Paragraphs 3.1.2., 3.1.3. and 3.1.4. (former), renumber as paragraphs 3.1.3., 3.1.4., and 3.1.5.

Paragraph 3.2.1., add at the end the following text:

".....  
If for the reinforcing interlayer(s) a corrosion-resistant material is used (i.e. stainless-steel) a cover is not required."

Insert new paragraphs 3.3.2. to 3.3.2.3., to read:

"3.3.2. **Tensile strength and elongation specific for polyamide 6 material**

3.3.2.1. Tensile strength and elongation at break according to ISO 527-2 with the following conditions:

- (i) specimen type: type 1 BA
- (ii) tensile speed: 20 mm/min

The material has to be conditioned for at least 21 days at 23 °C and 50 per cent relative humidity prior to testing.

Requirement:

- (i) tensile strength not less than 20 MPa
- (ii) elongation at break not less than 50 per cent.

3.3.2.2. Resistance to n-pentane according to ISO 1817 with the following conditions:

- (i) medium: n-pentane
- (ii) temperature: 23 °C (tolerance according to ISO 1817)
- (iii) immersion period: 72 hours

Requirements:

- (i) maximum change in volume 2 per cent
- (ii) maximum change in tensile strength 10 per cent
- (iii) maximum change in elongation at break 10 per cent

After storage in air with a temperature of 40 °C for a period of 48 hours the mass compared to the original value may not decrease more than 5 per cent.

3.3.2.3. Resistance to ageing according to ISO 188 with the following conditions:

- (i) temperature: 115 °C (test temperature = maximum operating temperature minus 10 °C)
- (ii) exposure period: 24 and 336 hours

After ageing the specimens have to be conditioned at 23 °C and 50 per cent relative humidity for at least 21 days prior to carrying out the tensile test according to paragraph 3.3.1.1.

Requirements:

- (i) maximum change in tensile strength 35 per cent after 336 hours ageing compared to the tensile strength of the 24 hours aged material
- (ii) maximum change in elongation at break 25 per cent after 336 hours ageing compared to the elongation at break of the 24 hours aged material."

Paragraph 3.4.1.3., correct the value of "70 °C" to read "115 °C"

Insert new paragraphs 3.4.3. to 3.4.3.3., to read:

"3.4.3. **Specifications and test method for the cover made of polyamide 6 material**

"3.4.3.1. Tensile strength and elongation at break according to ISO 527-2 with the following conditions:

- (i) specimen type: type 1 BA
- (ii) tensile speed: 20 mm/min

The material has to be conditioned for at least 21 days at 23 °C and 50 per cent relative humidity prior to testing.

Requirements:

- (i) tensile strength not less than 20 MPa
- (ii) elongation at break not less than 100 per cent.

3.4.3.2. Resistance to n-hexane according to ISO 1817 with the following conditions:

- (i) medium: n-hexane
- (ii) temperature: 23 °C (tolerance according to ISO 1817)
- (iii) immersion period: 72 hours

Requirements:

- (i) maximum change in volume 2 per cent
- (ii) maximum change in tensile strength 10 per cent
- (iii) maximum change in elongation at break 10 per cent

3.4.3.3. Resistance to ageing according to ISO 188 with the following conditions:

- (i) temperature: 115 °C (test temperature = maximum operating temperature minus 10 °C)
- (ii) exposure period: 24 and 336 hours

After ageing the specimens have to be conditioned for at least 21 days before carrying out the tensile test according to paragraph 3.3.1.1.

Requirements:

- (i) maximum change in tensile strength 20 per cent after 336 hours ageing compared to the tensile strength of the 24 hours aged material
  - (ii) maximum change in elongation at break 50 per cent after 336 hours ageing compared to the elongation at break of the 24 hours aged material."
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