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TANKS
Requirements for discharge pipes (Chapter 6.8)

Transmitted by the European Liquefied Petroleum Gas Association (AEGPL)

1. In ECE/TRANS/WP15/AC1/2006/27, the Government of Germany proposes to move requirements concerning piping and pipe fittings on tanks for non refrigerated liquefied gases from Ch.6.7 to Ch 6.8. and hence to align the requirements for tank-vehicles and tank wagons with those for portable tanks. There are however distinct differences in the construction of these two types of containers that mean that the requirements can not be directly transposed.

2. According to this proposal, a new provision in the subparagraph 6.8.2.2.1 requests for tank-vehicles and tank-wagons that :

> *"The burst pressure of all piping and pipe fittings shall be not less than the highest [four times the MAWP]* of the shell or four times the pressure to which it may be subject in service by the action of a pump or other device (except pressure-relief devices).*
> ** Note: Standard EN 12972 refers to 1.5 times the test pressure."*

Firstly, we are unable to find any reference in EN12972 to 1.5 times burst pressure and at this stage, the draft version does not contain this reference. Usual recognized standards related to tank and road-tanker pipe work construction and which are in ADR (EN 12252, EN 12493 and EN 12972) recommend "hydraulic test pressure performed at 1.3 times "design pressure" without equipment attached to the fittings. In addition these standards refer to leak proof tests which have to be performed once the equipment (pump, meter, filter…) is attached to the pipework and tank. Reference to burst pressure is unusual in terms of design because the pressure system on the tank-vehicle or tank-wagon is protected against over-pressure by hydrostatic relief valves and many parts of the system, such as the pump, meter and vapour eliminator will not withstand such high pressures without damage.

AEGPL therefore proposes to rewrite the new subparagraph 6.8.2.2.1 as follows:

> *"On completion of construction, all piping and pipe fittings shall be subject, without any equipment attached, to a pressure test at a test pressure of 1.3 times the design pressure."*

3. The Government of Germany also suggests that the use of non-metallic components in the piping system should be discussed and restricted (subparagraph 6.8.2.2.1), for example

"appropriate non-metallic materials may also be used with the consent of the competent authority."

In tank-vehicles the pump, metering system and pipework may be mounted to the vehicle chassis and it may be necessary to provide a flexible elastomeric coupling between the tank and the pipework to prevent transfer of chassis flexing to the tank. This element is incorporated in current standards and is a practice agreed in many countries. In these countries, passing the requirement to use non-metallic materials to individual competent authorities would impede technical progress when current flexible elements are readily capable of meeting the system test requirements and are designed and manufactured to appropriate standards. AEGPL proposes removing this suggestion.

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