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TANKS

Transitional requirements for fixed tanks (tank-vehicles) and tank containers divided
by partitions or surge plates, intended for liquefied gases

Transmitted by the European Industrial Gases Association (EIGA)

Introduction

The proposal transmitted by the Government of the Netherlands in ECE/TRANS/WP.15/AC.1/2007/8 was introduced to remove uncertainty as to whether 4.3.2.2.4 applied to liquefied gases and refrigerated liquefied gases. ECE/TRANS/WP.15/AC.1/2007/8 seek to modify 4.3.2.2.4, which covers the requirements for filling.

The proposal by the European Industrial Gases Association in this paper is to clarify the position regarding existing equipment and to permit continued use of such equipment.

Proposal

1.6.3.xx

Fixed tanks (tank-vehicles) and demountable tanks built before 1 July 2009 in accordance with the requirements in force up to 31 December 2008 intended for the carriage of liquefied gases and refrigerated liquefied gases and divided by partitions or surge plates into sections of more than 7 500 litres capacity may be filled to between 80% and 20% of their capacity.

1.6.4.xx

Tank-Containers built before 1 July 2009 in accordance with the requirements in force up to 31 December 2008 intended for the carriage of liquefied gases and refrigerated liquefied gases and divided by partitions or surge plates into sections of more than 7 500 litres capacity may be filled to between 80% and 20% of their capacity.

Justification

The proposal in ECE/TRANS/WP.15/AC.1/2007/8 was to remove the uncertainty as to whether 4.3.2.2.4 applied to liquefied gases and refrigerated liquefied gases. It has been apparent that this uncertainty was evident as many tankers and tank containers have been built with surge plates in different spacings than that specified in 4.3.2.2.4 in the belief that the provision did not apply since these were gases and not liquids. These fixed tanks and tank vehicles have been approved for use and have been operating without incident. This is not to say that no surge plates were fitted when they were operationally necessary, they were fitted but at spacing larger than that specified in 4.3.2.2.4. For example, EN 12493:2001 referenced in ADR 6.8.2.6 specifies in clause 5.2 that surge plates shall be spaced at 4 metres apart. This results in enclosed volumes of more than 7 500 litres above diameters of about 1.6 metres.

Whilst it is accepted that new constructions should follow the requirements of 4.3.2.2.4, it is also acknowledged that to restrict the filling conditions of existing equipment will seriously restrict operations of equipment that has already been approved and operates without issues.

Safety

Safety is not considered to be impaired as tank and tank containers have been operating with the existing configurations for many years without incidents.

Feasibility

No difficulty with the feasibility of this as it is maintaining the existing tank and tank container constructions.

Enforceability

No difficulty in enforcing this is foreseen.

Note

The relevant extract from EN 12493 is reproduced below. The final paragraph is about compliance with 6.8.2.1.20 (b) 1, not compliance with 4.3.2.2.4.

5.2 Surge plates

To reduce the dynamic loadings of the liquid content due to accelerations of the vehicle, tanks longer than 4 m shall be fitted with transverse surge plates at a maximum spacing of 4 m, and shall be designed to permit full internal inspection of the tank. The area of each plate shall be at least 70 % of the cross-sectional area of the tank in which the plates are fitted.

Surge plates shall be able to withstand the load imposed by a full capacity liquid content of the section between the plates in either direction. Surge plates shall be at least 2 mm thick.

Provision shall be made for communication and drainage between sections.

For tanks over 1,8 m diameter, having a wall thickness less than 6 mm and for tanks up to 1,8 m diameter, having a wall thickness less than 5 mm, the surge plates shall have the same thickness as the shell and the volume between any two plates shall not exceed 7 500 litres.
