

ECONOMIC COMMISSION FOR EUROPE

INLAND TRANSPORT COMMITTEE

Working Party on the Transport of Dangerous Goods

Joint Meeting of the RID Committee of Experts and
the Working Party on the Transport of Dangerous Goods

Geneva, 11-21 September 2007

Tanks

Heat treatment

Comment and proposal related to Document 2007/54 of France

Transmitted by the Government of Germany

Introduction

With document 2007/54 the Government of France proposed an amendment of paragraph 6.8.5.1.1 b) by demand heat treatment of tanks intended for the carriage of gases and constructed of fine-grained steels for thermal stress-relief.

Germany agrees with the aim of this proposal. However, as mentioned by the OTIF-Secretariat, the RID experts decided earlier to have an alternative to the required heat treatment after welding as follows:

“Thermal stress relief shall not be required if:

1. there is no risk of corrosion due to stress cracking; and
2. the mean notch bar impact value in the welding metal, the transition area and the base material, determined in each case by means of three samples, is an average of 45 J. ISO-V shall be used as a sample. For the base material, the sample shall be tested "crosswise". For the welding material and the transition area, notch position S in the middle of the welding metal or the middle of the transitional area shall be selected. Testing shall be carried out at the lowest operating temperature.”

This alternative, initially proposed by Germany is an outcome of a discussion over years about the necessity for a heat treatment of tanks.

The main justification not to stipulate heat treatment at the end was the fact that

- the wall thickness of the shell is less than 30 mm, which is the border in pressure vessel codes we know and
- for some fine grain steel shells a heat treatment is more disadvantage than advantage.

Actually, there is one open question if the alternative 1. shall be taken (no risk of corrosion due to stress cracking). For which gases are a risk for corrosion due to stress cracking?

In Germany we will try to find out all gases with such risk. Up to now in case of liquefied gases allowed for carriage in tanks, 1005 Ammonia and 2073 ammonia solution were detected. For a number of other gases no risk of corrosion due to stress cracking can be assumed if the tank itself and the gases are free of water or other impurities. For some other gases there is a need for further investigation.

Proposal

Amend paragraph 6.8.5.1.1 b) ADR as proposed by France and add the additional RID text to the new paragraph.

Justification

Improvement of safety.

Feasibility

Practice for years without problems.

Enforceability

Improved by new clarity.
