Economic Commission for Europe

Inland Transport Committee

Working Party on the Transport of Dangerous Goods **10 September 2013**

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

Geneva, 17-27 September 2013
Item 2 of the provisional agenda
Tanks

The use of chemical resistant materials for shells of tanks with a protective lining

Transmitted by the Government of the Netherlands

Corrosive substances are mainly carried in tanks with protective linings. In order to save weight a number of manufacturers choose to construct the shell with aluminium alloy.

However when a leak occurs in the protective lining, the aluminium alloy of the shell will dissolve at a high rate, with a risk of loss of structural integrity.

For example: On 3 July 2013 a tanker carrying hydrochloric acid developed a leak in the protective lining that resulted in a hole in the shell. The hole in the shell, made of aluminium alloy, was located at the waistline of the tank and the leaking substance ran down, dissolving approximately one quarter of the diameter of the shell material and part of an external stiffener in a radial plane in less than half one hour.

When using steel for the shell of tanks with a protective lining there will be leakages and tanks will develop holes. However, the holes remain smaller and better pluggable. Also the chance that structural integrity is jeopardized is lower.

Subsections 6.8.2.1.5 and 6.8.2.1.9 can be identified as relevant for regulating protective linings and chemical compatibility of materials for shells against the substances carried . Neither of these subsections regulates that the load bearing shell underneath a protective lining is made of material that is sufficient chemically resistant to the substance carried in case of leakage of the protective lining.

We would like to have a discussion on this subject.