OTIF

ORGANISATION INTERGOUVERNEMENTALE POUR LES TRANSPORTS INTERNATIONAUX FERROVIAIRES

ZWISCHENSTAATLICHE ORGANISATION FÜR DEN INTERNATIONALEN EISENBAHNVERKEHR

INTERGOVERNMENTAL ORGANISATION FOR INTERNATIONAL CARRIAGE BY RAIL

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RID: **44th Session of the Committee of Experts on the Transport of Dangerous Goods** (Zagreb, 19 - 23 November 2007)

Subject: **RID 6.8.4 (b) Special provision TE 22 – Energy absorption elements**

Proposal transmitted by Germany

SUMMARY

Special provision TE 22 was included in RID 2005. According to this special provision, tank-wagons and battery-wagons for gases as well as tank-wagons for liquids assigned to tank codes L10CH, L10DH, L15CH, L15DH and L21DH must be fitted with energy absorption elements. In implementing this special provision, it has emerged that some of the requirements of TE 22 are open to interpretation and should be made clear in order to be applied better. In addition, TE 22 needs to be aligned with the planned amendments to UIC leaflet 573.

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Proposal

In RID 6.8.4 (b), the following amendments should be made to special provision TE 22 (the amendments are shown in bold or deleted text):

"**TE 22** **In order to reduce the extent of damage** in the event of a collision shock or accident, each end of tank-wagons for liquids and gases or battery-wagons shall be capable of absorbing at least 800 kJ of energy by means of elastic or plastic deformation of defined components of the subframe or by means of a similar procedure (e.g. crash elements **[in accordance with standard EN 15551]**). **The energy absorption shall be determined in relation to a collision on a straight track.**

Energy absorption by means of plastic deformation shall only occur in conditions other than those encountered during normal conditions of rail transport **(in accordance with ERRI B12/Rp17:** impact speed higher than 12 km/h **or individual buffer energy greater than 1500 kN**).

Energy absorption of not more than 800 kJ at each end of the wagon shall not lead to transfer of energy to the shell which could cause **visible, permanent deformation** ~~plastic deformation of the shell~~."

Additional note:

The following text must also be added at the end of special provision TE 22. This text was adopted at the 43rd session of the RID Committee of Experts (Helsinki, 2 – 5 October 2006):

"The requirements of this special provision are considered to have been complied with if Section 1.4 of UIC leaflet 573* is applied.

***** **6th [7th] Edition of the UIC leaflet applicable from 1 April 2005 [xx October 2007]."**

Justification

In practice, energy absorption of at least 800 kJ can be achieved using various technical means. It is possible that technical solutions (e.g. crash buffers) work differently on a curved track than on a straight track.

UIC leaflet 573 is currently being revised and the 7th edition will be published in the autumn. In addition to the threshold value of the speed of collision (12 km/h), in future the threshold value of the individual buffer energy (more than 1500 kN) will also be considered.

The protective aim of special provision TE 22 is to maintain the integrity of the tank up to an energy absorption of 800 kJ. The requirement that the transfer of energy to the shell must not cause any plastic deformation of the shell is open to interpretation. The expression "visible, permanent deformation" is commonly used among experts and is also included and explained in the UIC leaflets/ERRI reports. This amendment therefore clarifies what is required.