
Economic Commission for Europe**Inland Transport Committee**

9 July 2013

Working Party on the Transport of Dangerous Goods**Joint Meeting of Experts on the Regulations annexed to the European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (ADN) (ADN Safety Committee)****Twenty-third session**

Geneva, 26-30 August 2013

Item 4 (b) of the provisional agenda

Proposals for amendments to the Regulations annexed to ADN:**Other proposals**

Report on the 3rd meeting of the informal working group “Explosion protection on tank vessels” on 16 May 2013 in Strasbourg**Transmitted by the Central Commission for the Navigation of the Rhine (CCNR)¹****Introduction**

The third meeting of the informal working group “Explosion protection on tank vessels” was held on 16 May at the Central Commission for the Navigation of the Rhine in Strasbourg. Delegates from the Netherlands, Switzerland, the classification societies, EBU, EUROPIA, the secretariat of CCNR and Germany attended the meeting.

Results

In accordance with the mandate of the Safety Committee (ECE/TRANS/WP.15/AC.2/46, VII B), the Group discussed the following subjects:

I. INF.32 (ADN Recommended Classification Societies) - Request for clarification from the informal working group on explosion protection (WP.15/AC.2/22/INF.32)

1. The results of the discussion are as follows:

Ad Application of explosion group requirements for non-electrical equipment (INF.32):

INF.32 proposes to cover also the non-electrical equipment by the explosion protection requirements similar to Directive 94/9/EC on equipment and protective systems intended for use in potentially explosive atmospheres (ATEX). Including the non-electrical equipment is already part of the proposal for the rearrangement of the explosion protection on tank vessels of the informal working group ‘Explosion protection on tank vessels’ (see WP.15/AC.2/20/INF.12 und WP.15/AC.2/22/INF.23).

The informal working group welcomes the support of the classification societies on this subject. The changes and amendments necessary will be part of the proposal for the rearrangement of the explosion protection on tank vessels of the informal working group.

¹ Distributed in German by the Central Commission for the Navigation of the Rhine under the symbol CCNR-ZKR/ADN/WP.15/AC.2/23/INF.7

Ad Application of sub-divisions for group IIB (INF.32):

Explosion groups are ranges of maximum experimental safe gaps (MESG) which reflect a graduated hazard potential with respect to the flame transmission capability of the flammable gases and vapours in mixture with air as well as the corresponding degree of protection of the equipment and protective systems intended for use in potentially explosive atmospheres. Gases and vapours as well as equipment and protective systems intended for use in potentially explosive atmospheres are classified into the following explosion groups:

Explosion group	Maximum Experimental Safe Gap (MESG) mm
IIA	> 0,9
IIB	$0,5 \leq \text{MESG} \leq 0,9$
IIC	< 0,5

This means:

Equipment and protective systems suitable / certified for explosion group IIC provide sufficient protection for gases and vapours of the explosion group IIC, IIB, IIA.

Equipment and protective systems suitable / certified for explosion group IIB provide sufficient protection for gases and vapours of the explosion group IIB, IIA.

Equipment and protective systems suitable / certified for explosion group IIA provide sufficient protection for gases and vapours of the explosion group IIA.

Because of the wide range of the explosion group IIB the additional sub-groups IIB3, IIB2, IIB1 can be used for autonomous protective systems (ISO 16852):

IIB: $0,5 \text{ mm} \leq \text{MESG} \leq 0,9 \text{ mm}$

IIB3: $0,65 \text{ mm} \leq \text{MESG} \leq 0,9 \text{ mm}$

IIB2: $0,75 \text{ mm} \leq \text{MESG} \leq 0,9 \text{ mm}$

IIB1: $0,85 \text{ mm} \leq \text{MESG} \leq 0,9 \text{ mm}$

The sub-groups of explosion group IIB can only be used for the autonomous protective systems (flame arrestors, vacuum and pressure-relief valves with integrated flame arrestor element, high velocity vent vales).

2. When taking into account the following boundary conditions the selection of the autonomous protective systems (flame arrestors, vacuum and pressure-relief valves with integrated flame arrestor element and high velocity vent vales) may be based on the sub-groups of explosion group IIB without reducing the safety level:

Tank vessels equipped with autonomous protective systems (flame arrestors, vacuum and pressure-relief valves with integrated flame arrestor element, high velocity vent vales) of explosion group IIB are able to ship products for which the explosion groups IIA or IIB including the sub-groups IIB3, IIB2, IIB1 apply.

Tank vessels equipped with autonomous protective systems (flame arrestors, vacuum and pressure-relief valves with integrated flame arrestor element, high velocity vent vales) of explosion sub-group IIB3 are able to ship only products for which the sub-groups IIB3, IIB2, IIB1 or the explosion group IIA apply.

Tank vessels equipped with autonomous protective systems (flame arrestors, vacuum and pressure-relief valves with integrated flame arrestor element, high velocity vent vales) of the explosion sub-group IIB2 are able to ship only products for which the sub-groups IIB2, IIB1 or the explosion group IIA apply.

Tank vessels equipped with autonomous protective systems (flame arrestors, vacuum and pressure-relief valves with integrated flame arrestor element, high velocity vent valves) of the explosion sub-group IIB1 are able to ship only products for which the sub-group IIB1 or the explosion group IIA apply.

3. The assignment of the sub-groups is normally only possible when knowing the MESH.
4. The informal working group therefore proposes to ask the informal working group on 'Substances' to identify the respective sub-group for the named entries in Table C showing explosion group IIB.
5. The respective sub-group may then become part of Table C column 16 or according to the proposal in INF.32 a note will deal with this subject.
6. The Safety Committee is asked to examine this proposal.

II. Proposal for the changes of the ADN necessary for the implementation of the modified explosion protection concept

Based on annex 2 of INF.23 (WP.15/AC2/22/INF.23) the working group started to prepare the proposals for the necessary changes of the ADN. The group worked on chapter 1.2 'Definitions and units of measurement' and 9.3.2 'Rules for construction of type C tank vessels'.

The work is not yet finished. The group is meeting again in November to continue its work.

The current status of chapter 1.2 and chapter 9.3.2 may be provided on request.
