

**Working Party on the Transport
of Dangerous Goods**
*(Sixty-seventh session,
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INF.9 E

Proposal from OICA

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Paris, June 28, 1999

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Safety of electrical equipment in explosive atmospheres (Provisions concerning the construction and type approval of vehicles : TRANS/WP15/1999/14)

Dear Mr Ridder,

Please find enclosed a copy of the revised OICA/CLEPA proposal on the Safety of Electrical Equipment in Explosive Atmospheres.

In accordance with the wishes of WP15, the proposal has been based on the text formulated during the ad-hoc WP 15 working group meeting on electrical equipment, which was held in Sweden during April 1998 and which was reported in document TRANS/WP15/1998/13. The proposal has been prepared in accordance with chapter 13 of the restructured format of the ADR..

During the course of the meeting held by OICA and CLEPA representatives to review the ADR text associated with electrical equipment, various queries arose with respect to the text associated with the battery master switch. OICA and CLEPA would, therefore, wish the ad-hoc WP15 electrical working group to discuss the following queries at the meeting planned for week 28 in Bonn. The queries have been formulated with respect to the relevant clauses of chapter 13 of the restructured ADR; the details are:

In order to comply with the requirements of clause 13.2.2.3.1, is a single or double pole switch required ?

If a single pole switch is required, is switching of the positive or negative supply lead required ?

Is only one switch required to isolate the battery or are additional switches allowable ?

In order to comply with the requirements of clause 13.2.2.3.2, is only a single control device required or are additional control devices allowed ?

Yours sincerely,

*M. Biver
Deputy Technical Manager*

Encl./ 1

THE SAFETY OF ELECTRICAL EQUIPMENT IN EXPLOSIVE ATMOSPHERES

Proposal from the OICA/CLEPA Working Group meeting held on 24 June 1999

Introduction

The text proposal outlined below is based on the text discussed during the 22-23 April 1998 meeting, which was held in Södertälje, and has been prepared in the style of the restructured ADR. The purpose of the text is to provide a working document for discussion at the ad-hoc WP15 Electrical Working Group meeting, which is planned for week 28 in Bonn.

Clauses 13.3.4.1 and 13.7.7 are based on the proposed text of marginal 10 252 (1) and (2) and clause 13.2.2.6 is based on the proposed text of marginal 220 515 (1) and (2).

Text Proposal

13.2.2.5 Tachographs

Delete the text

13.2.2.6 Permanently energised installations

Those parts of the electrical installation which have to remain energised when the battery master switch is open, shall be suitable for use in hazardous areas. Such equipment shall meet the general requirements of IEC 60079 parts 0 and 14^o and the additional requirements applicable from IEC 60079 parts 1, 2, 5, 6, 7, 11, 15 or 18^z.

[Permanently Energised] electrical equipment on EX/III and FL vehicles, which is situated outside Zones 0 and 1 and is not subject to clauses 13.2.2.3, 13.2.2.4 and 13.2.2.7, shall meet the requirements for Zone 1 for electrical equipment in general or meet the requirements for Zone 2 if situated in the driver's cab. The requirements for explosion group IIB, temperature class T4 shall be met.

13.3.4.1 *Electrical Equipment on EX/III vehicles, situated in areas where an explosive atmosphere is or may be expected to be present in such quantities as to require special precautions, shall be suitable for use in a hazardous area. Such equipment shall meet the general requirements of IEC 60079 parts 0 and 14 and the additional requirements applicable from IEC 60079 parts 1, 2, 5, 6, 7, 11 or 18^z. The requirements for explosion group IIB, temperature class T4 shall be met. For the application of IEC 60079-14 the inside of the load compartment shall be classified as Zone 0.*

[Permanently energised] electrical equipment which is situated outside the Zone 0 defined above, and which is not subject to clauses 13.2.2.3, 13.2.2.4 and 13.2.2.7 shall comply with clause 13.2.2.6.

13.7.7 *Electrical Equipment on FL vehicles, situated in areas where an explosive atmosphere is or may be expected to be present in such quantities as to require special precautions, shall be suitable for use in a hazardous area. Such equipment shall meet the general requirements of IEC 60079 parts 0 and 14 and the additional requirements applicable from IEC 60079 parts 1, 2, 5, 6, 7, 11 or 18^{7/}. The requirements for explosion group IIB, temperature class T4 shall be met, with the exception of hydrogen, acetylene or carbon disulphide for which explosion group IIC, temperature class T6 is required. For the application of IEC 60079-14 the following classification shall be used:-*

Zone 0 - Inside:

*Tank Compartments
Fittings for filling and discharge
Vapour Recovery Lines*

Zone 1:

*Inside cabinets for equipment used for loading and unloading
Within 0,5 metres of venting devices and pressure relief safety valves*

[Permanently energised] electrical equipment which is situated outside the Zones 0 and 1 defined above, and which is not subject to clauses 13.2.2.3, 13.2.2.4 and 13.2.2.7 shall comply with clause 13.2.2.6.

Notes

7/ *As an alternative, the general requirements of EN 50014 and the additional requirements of EN 50015, 50016, 50017, 50018, 50019, 50020 or 50028 may be used.*

8/ *The general requirements of IEC 60079 part 14 do not take precedence over the general requirements of ADR chapter 13 or the requirements for automotive Type Approval.*