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**SAFETY IN ROAD TUNNELS**

**Proposal transmitted by the government of Belgium and the Netherlands**

**Introduction**

During the WP.15 session of November 2005 the discussion on tunnel restrictions could not be finalised due to a lack of time. Belgium and the Netherlands now submit a compromise proposal in order to overcome the difficulties raised during the discussion in WP.15 in November.

Basis of the proposal is the text of Part 1.9 already adopted at the previous session. No changes are envisaged to that text, apart from :

- the inclusion of the rationale for the assignment of dangerous goods to the various tunnel categories in 1.9.5.2.2. As a result, the requirements related to the carrier/driver are concentrated in Chapter 8.6 and those for the competent authority are concentrated in Part 1.9;
- the use of the term “tunnel restriction code” instead of “tunnel code” and “tunnel category A, B, C, D or E” instead of “tunnel A, B, C, D or E” (in order to avoid any confusion and to stress the fact that the codes stand for a restriction of the substances indicated).

In the rationale in 1.9.5 and in 8.6, the codes B1 and C1 have been subdivided in B1D, B1E, C1D and C1E, as proposed in the Belgian document INF. 13.

Chapter 8.6 reflects proposal 1 (by the Netherlands) in TRANS/WP.15/185/Add.1 : its content is the same, but due to the inclusion of the rationale in 1.9.5.2.2 and the subdivision of the codes B1 and C1, some rearrangement and rewording was necessary. The proposals contained in document TRANS/WP.15/2005/24 of the Netherlands and in INF. 7 of Germany that are not of an editorial nature have therefore not been dealt with here. They need to be discussed separately.

1.9.5 Add the following new paragraphs 1.9.5 to 1.9.5.3.8:

“Tunnel restrictions

*NOTE : The restrictions for the passage of vehicles through road tunnels are also dealt with in Chapter 8.6.*

1.9.5.1 *General provisions*

1.9.5.1.1 When applying restrictions to the passage of vehicles carrying dangerous goods through tunnels, the competent authority shall assign the road tunnel to one of the tunnel categories defined in 1.9.5.2.2 depending on the tunnel characteristics, risk assessment and traffic management considerations. The same tunnel may be assigned to more than one tunnel category, e.g. depending on the hours of the day, or the day of the week etc.

1.9.5.2 *Categorization*

1.9.5.2.1 The categorization shall be based on the assumption that in tunnels there are three major dangers which may cause numerous victims and possibly serious damage to the tunnel structure:

- (a) explosions;
- (b) release of toxic gas or volatile toxic liquid;
- (c) fires.

1.9.5.2.2 The five tunnel categories are the following:

Tunnel category A : No restrictions for the transport of dangerous goods;

Tunnel category B: Restriction for dangerous goods which may lead to a very large explosion ;

The following dangerous goods are considered to fulfil this condition <sup>1</sup> and are, for this purpose, identified by the tunnel restriction code indicated :

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<sup>1</sup> *This assessment is based on the intrinsic dangerous properties of the goods, their type of containment and quantity carried.*

Tunnel restriction code	Dangerous goods of
B	Class 1: Compatibility groups A and L; Class 3: Classification code D (UN Nos. 1204, 2059, 3064, 3343, 3357 and 3379); Class 4.1: Classification codes D or DT, and Self-reactive substances, type B (UN Nos. 3221, 3222, 3231 and 3232); Class 5.2: Organic peroxides type B (UN Nos. 3101, 3102, 3111 and 3112).
B1000	Class 1: Divisions 1.1, 1.2 and 1.5 (except compatibility groups A and L), when the total net explosive mass per transport unit is greater than 1000 kg.
B1D	When carried in tanks: Class 2: Classification codes F, TF and TFC;
B1E	When carried in tanks: Class 4.2: Packing group I; Class 4.3: Packing group I; Class 5.1: Packing group I.

Tunnel category C : Restriction for dangerous goods which may lead to a very large explosion, a large explosion or a large toxic release;

The following dangerous goods are considered to fulfil these conditions<sup>1</sup>:

- the dangerous goods restricted in tunnel category B, and
- the following dangerous goods, identified for this purpose by the tunnel restriction code indicated:

Tunnel restriction code	Dangerous goods of
C	Class 1: Divisions 1.1, 1.2 and 1.5 (except compatibility groups A and L); Class 1: Compatibility groups H and J; Class 7: UN Nos. 2977 and 2978.
C5000	Class 1: Division 1.3 [compatibility groups C and G], when the net explosive mass per transport unit is greater than 5000 kg.
C1D	When carried in tanks:
	Class 2: Classification codes T, TC, TO and TOC;
	Class 6.1: Packing group I of classification codes TF1 and TFC and the toxic by inhalation entries (UN Nos. 3381 to 3390); Class 8: Packing group I of classification code CT1.
C1E	When carried in tanks:
	Class 3: Packing group I of classification codes FC, FT1, [FT2] and FTC;

Tunnel category D: Restriction for dangerous goods which may lead to a very large explosion, to a large explosion, to a large toxic release or to a large fire;

The following dangerous goods are considered to fulfil these conditions<sup>1</sup>:

- the dangerous goods restricted in tunnel category C, and
- the following dangerous goods, identified for this purpose by the tunnel restriction code indicated:

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<sup>1</sup> This assessment is based on the intrinsic dangerous properties of the goods, their type of containment and quantity carried.

Tunnel restriction code	Dangerous goods of
D	[Class 1: Division 1.3 compatibility groups C and G]; Class 2: Classification codes F, FC, T, TF, TC, TO, TFC and TOC; Class 4.1: Self-reactive substances, types C, D, E and F, and UN Nos. 2956, 3241, 3242 and 3251; Class 5.2: Organic peroxides, types C, D, E and F; Class 6.1: Packing group I of classification codes TF1 and TFC and the toxic by inhalation entries (UN Nos. 3381 to 3390); Class 8: Packing group I of Classification code CT1; Class 9: Classification code M10 (UN 3258) [and M9] ( <i>see proposal of Germany, INF.7</i> ).
D1	When carried in bulk or in tanks Class 3: Packing group I or II or classification code F2; Class 4.2: Packing group II; Class 4.3: Packing group II; Class 6.1: Packing group I of classification codes TF2 and TW1, and Packing group II of classification codes TF1, TF2, TFC and TW1; Class 8: Packing group I of classification codes CF1, CFT and CW1; Class 9: Classification codes M2 and M3.

Tunnel category E: Restriction for all dangerous goods other than UN Nos. 2919, 3291, 3331 and 3373.

All dangerous goods, other than those restricted in category D and UN Nos. 2919, 3291, 3331 and 3373, are identified for this purpose by the tunnel restriction code E.

**NOTE :** For the dangerous goods assigned to UN Nos. 2919 and 3331, restrictions to the passage through tunnels may, however, be part of the special arrangement approved by the competent authority(ies) on the basis of 1.7.4.2.

**1.9.5.3**        ***Provisions for road signs and notification of restrictions***

- 1.9.5.3.1        Contracting Parties shall indicate tunnel prohibitions and alternative routes by means of signs and signals.
- 1.9.5.3.2        For this purpose, they may use signs C, 3h and D, 10a, 10b and 10c and signals according to the Vienna Convention on Road Signs and Signals (Vienna, 1968) and the European Agreement supplementing the Convention on Road Signs and Signals (Geneva, 1971) as interpreted by the Resolution on Road Signs and Signals (R.E.2) of the UNECE Inland Transport Committee Principal Working Party on Road Transport, as amended.
- 1.9.5.3.3        In order to facilitate international understanding of signs, the system of signs and signals prescribed in the Vienna Convention is based on the use of shapes, and colours characteristic of each class of signs and wherever possible, on the use of graphic symbols rather than inscriptions. Where Contracting Parties consider it necessary to modify the signs and symbols prescribed, the modifications made shall not alter their essential characteristics. Where Contracting Parties do not apply the Vienna Convention, the prescribed signs and symbols may be modified, provided that the modifications made shall not alter their essential intent.
- 1.9.5.3.4        Traffic signs and signals intended to prohibit access of vehicles carrying dangerous goods to road tunnels shall be affixed at a place where the choice of alternative routes is possible.
- 1.9.5.3.5        When access to tunnels is restricted or alternative routes are prescribed, the signs shall be displayed with additional panels as follows:
- No sign: no restriction
- Sign with additional panel bearing the letter B: applies to vehicles carrying dangerous goods not allowed in tunnels of category B;
- Sign with additional panel bearing the letter C: applies to vehicles carrying dangerous goods not allowed in tunnels of category C;
- Sign with additional panel bearing the letter D: applies to vehicles carrying dangerous goods not allowed in tunnels of category D;
- Sign with additional panel bearing the letter E: applies to vehicles carrying dangerous goods not allowed in tunnels of category E.
- 1.9.5.3.6        Tunnel restrictions shall not apply when dangerous goods are carried in accordance with 1.1.3.
- 1.9.5.3.7        Restrictions shall be published officially and made publicly available.

- 1.9.5.3.8 When Contracting Parties apply specific operating measures designed to reduce the risks and related to some or all vehicles using tunnels, such as declaration before entering or passage in convoys escorted by accompanying vehicles, such operating measures shall be published officially and made publicly available."

## **PART 8**

**Chapter 8.6** Add a new Chapter 8.6 to read as follows :

### **"CHAPTER 8.6**

#### **ROAD TUNNEL RESTRICTIONS FOR THE PASSAGE OF VEHICLES CARRYING DANGEROUS GOODS**

##### **8.6.1 General provisions**

- 8.6.1.1 The provisions of this Chapter apply when the passage of vehicles through road tunnels is restricted in accordance with 1.9.5.

##### **8.6.2 Road signs or signals governing the passage of vehicles carrying dangerous goods**

- 8.6.2.1 The tunnel category, assigned in accordance with 1.9.5.1.1 by the competent authority to a given road tunnel for the purpose of restricting the passage of transport units carrying dangerous goods, shall be indicated as follows by means of road signs and signals :

<b>Sign and signal</b>	<b>Tunnel category</b>
No sign	Tunnel category A
Sign with an additional panel bearing a letter B	Tunnel category B
Sign with an additional panel bearing a letter C	Tunnel category C
Sign with an additional panel bearing a letter D	Tunnel category D
Sign with an additional panel bearing a letter E	Tunnel category E

##### **8.6.3 Tunnel restriction codes**

- 8.6.3.1 The restrictions for the transport of specific dangerous goods through tunnels are based on the tunnel restriction code of these goods<sup>1</sup>, indicated in Column (15) of Table A of Chapter 3.2. The tunnel restriction codes are put between brackets at the bottom of the cell. When '(—)' is indicated instead of one of the tunnel restriction codes, the dangerous goods are not subject to any tunnel restriction ; for the dangerous goods assigned to UN Nos. 2919 and 3331, restrictions to the passage through tunnels may, however, be part of the special arrangement approved by the competent authority(ies) on the basis of 1.7.4.2.

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<sup>1</sup> B, B1000, BID, BIE, C, C5000, CID, CIE, D, D1 or E, assigned in accordance with 1.9.5.2.2.

8.6.3.2 When a transport unit contains dangerous goods to which different tunnel restriction codes have been assigned, the most restrictive of these tunnel restriction codes shall be assigned to the whole load.

8.6.3.3 Dangerous goods carried in accordance with 1.1.3 are not subject to the tunnel restrictions and shall not be taken into account when determining the tunnel restriction code to be assigned to the whole load of a transport unit.

**8.6.4 Restrictions for the passage of transport units carrying dangerous goods through tunnels**

8.6.4.1 Once the tunnel restriction code to be assigned to the whole load of the transport unit has been determined, the restrictions for the passage of this transport unit through tunnels are the following :

<b>Tunnel restriction code of the whole load</b>	<b>Restriction</b>
B	Passage forbidden through tunnels of category B, C, D and E
B1000	Passage forbidden through tunnels of category B when the total net explosive mass per transport unit is greater than 1000 kg ; Passage forbidden through tunnels of category C, D and E
B1D	Passage forbidden through tunnels of category B and C when carried in tanks ; Passage forbidden through tunnels of category D and E
B1E	Passage forbidden through tunnels of category B, C and D when carried in bulk or in tanks ; Passage forbidden through tunnels of category E
C	Passage forbidden through tunnels of category C, D and E
C5000	Passage forbidden through tunnels of category C [and D] when the total net explosive mass per transport unit is greater than 5000 kg ; Passage forbidden through tunnels of category E
C1D	Passage forbidden through tunnels of category C when carried in bulk or in tanks ; Passage forbidden through tunnels of category D and E
C1E	Passage forbidden through tunnels of category C and D when carried in tanks ; Passage forbidden through tunnels of category E
D	Passage forbidden through tunnels of category D and E
D1	Passage forbidden through tunnels of category D when carried in bulk or in tanks Passage forbidden through tunnels of category E
E	Passage forbidden through tunnels of category E
—	Passage allowed through all tunnels

**PART 3**

**Chapter 3.2**

3.2.1 Explanations for Column (15): amend to read as follows:

"Transport category/Tunnel restriction code'

Contains at the top of the cell a figure indicating the transport category to which the substance or article is assigned for the purposes of exemption related to quantities carried per transport unit (see 1.1.3.6).

Contains at the bottom of the cell, between brackets, the tunnel restriction code that refers to the applicable restriction for the passage of vehicles carrying the substance or article through road tunnels. These are to be found in Chapter 8.6. When no tunnel restriction code has been assigned, this is indicated by the mention '(—)'."

The heading of Column (15) in table A of chapter 3.2 : amend to read as follows :

**“Transport category  
1.1.3.6  
(Tunnel restriction code)  
( 8.6)”.**

In column (15), at the bottom of the cell : add, between brackets, the alphanumeric codes as indicated below :

Class 1	Division 1.1 compatibility groups A and L	(B)
	Division 1.1 compatibility groups B, C, D, E, F, G and J	(B1000)
	Division 1.2 compatibility group L	(B)
	Division 1.2 compatibility groups B, C, D, E, F, G, H and J	(B1000)
	Division 1.3 compatibility group L	(B)
	Division 1.3 compatibility groups H and J	(C)
	Division 1.3 compatibility groups C and G	(C5000)
	Division 1.4	(E)
	Division 1.5, compatibility group D	(B1000)
	Division 1.6	(E)
	UN No. 0190	(E)
	Class 2	Classification codes with letters F, TF, TFC
Classification codes with letters FC		(D)
Classification codes with letters T, TC, TO, TOC		(C1D)
Classification codes with letters A, O		(E)
Class 3	Classification code D	(B)
	Packing Group I, classification code FC, FT1, [FT2], FTC	(C1E)
	Packing Groups I and II, classification code F2	(D1)

	Others	(E)
Class 4.1	Classification codes D and DT	(B)
	UN Nos. 3221, 3222, 3231, 3232	(B)
	Self-reactive substances, types C, D, E, F	(D)
	UN Nos. 2956, 3241, 3242, 3251	(D)
	Others	(E)
Class 4.2	Packing Group I	(B1E)
	Packing Group II	(D1)
	Others	(E)
Class 4.3	Packing Group I	(B1E)
	Packing Group II	(D1)
	Others	(E)
Class 5.1	Packing Group I	(B1E)
	Others	(E)
Class 5.2	Type B	(B)
	Types C, D, E, F	(D)
Class 6.1	Packing Group I of classification codes TF1, TFC and UN Nos. 3381 to 3390	(C1D)
	Packing Group I of classification codes TF2 and TW1	(D1)
	Packing Group II of classification codes TF1, TF2, TFC and TW1	(D1)
	Others	(E)
Class 6.2	UN Nos. 2814 and 2900	(E)
Class 7	UN Nos. 2977 and 2978	(C)
	Others except UN Nos. 2919 and 3331	(E)
Class 8	Packing Group I of classification code CTI	(C1D)
	Packing Group I of classification codes CF1, CFT, and CW1	(D1)
	Others	(E)
Class 9	Classification codes M2, M3	(D1)
	M10	(D)
	Others	(E)
Dangerous goods not mentioned above		(—)