

## SAFETY IN ROAD TUNNELS

Editorial comments and proposals transmitted by the Government of Belgium**Introduction**

Belgium appreciates the efforts made by the Netherlands to improve the future regulations with regard to road tunnels, and considers their paper TRANS/WP.15/2005/24 as a step in the right direction. It is however possible to simplify and shorten the texts they propose considerably, as explained below.

1. The provisions that are being proposed concerning the safety in road tunnels (in documents TRANS/WP.15/181, TRANS/WP.15/2005/8, TRANS/WP.15/2005/24) contain an inconsistency with respect to the general principle governing chapter 1.9. This inconsistency has led to duplications and to provisions that are unnecessarily complicated.

Sections 1.9.2 to 1.9.4 deal with additional provisions not included in ADR that Contracting Parties may apply to vehicles engaged in the international carriage of dangerous goods by road on their territory. The safety requirements to protect tunnels were – up till now – the best known and the most frequently used examples of such additional provisions. For that reason, they are quoted in 1.9.3 (a).

Once the special provisions concerning traffic restrictions in tunnels will be introduced as chapter 8.6, they automatically will cease to fall under the scope of sections 1.9.2 to 1.9.4 (it are no longer additional provisions not included in ADR). As a consequence, the reference to tunnels in 1.9.3 (a) has to be eliminated, instead of introducing in chapter 1.9 additional sub-sections concerning this topic. These sub-sections (1.9.5.1 to 1.9.5.7 of TRANS/WP.15/2005/24) should be introduced in 8.6.4.

2. Tunnel codes B1 and C1 are not homogeneous : some of the substances covered by tunnel codes B1 and C1 are always forbidden through tunnels of category D, whilst others are only forbidden when carried in tanks. This makes it impossible to indicate in a simple and clear way which substances are forbidden through which tunnels, and has made it necessary to introduce a second tunnel code in column (15) of the dangerous goods list in some cases.

The tunnel codes B1 and C1 should be subdivided as follows :

- B1D : containing the substances for which the passage through tunnels of category D is always forbidden ;
- B1E : containing the substances for which the passage through tunnels of category D is only forbidden when carried in tanks ;
- C1D : containing the substances for which the passage through tunnels of category D is always forbidden ;

C1E : containing the substances for which the passage through tunnels of category D is only forbidden when carried in tanks

In doing so, the second tunnel code in column (15) of the dangerous goods list is never necessary any more.

## Proposals

The application of the principles set out above result in the following simplified text proposals (based on the provisions contained in TRANS/WP.15/2005/24, that have only been changed editorially ; these changes have been indicated) :

1. Add in 1.1.3.6.2 :

~~Section 1.9.5 and~~ Chapter 8.6

2. Transitional measures

1.6.X.X The requirements of ~~1.9.5 and~~ 8.6 are applicable from [1 January 2009]

3. Limit the changes in chapter 1.9 to the following change of 1.9.3 (a) :

1.9.3 (a) Additional safety requirements or restrictions concerning vehicles using certain structures such as bridges <sup>1</sup> ~~or tunnels~~, vehicles using combined transport modes such as ferries or trains, or vehicles entering or leaving ports or other transport terminals ;

4. Amend the explanations for Column (15) in 3.2.1 to read as follows :

Column (15) 'Transport category/Tunnel 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 the **alphanumeric code(s)** (between brackets) indicating **the applicable restriction for the passage of vehicles carrying the substance or article through road tunnels** (see ~~1.9.5 and~~ Chapters 8.6). When no tunnel ~~group~~ code has been assigned, this is indicated by the mention '(-)'.

~~When two codes are indicated, the applicable one is the one corresponding to the conditions of carriage, e.g. (B1000, C) indicates that the substance or article is forbidden for carriage in a tunnel of category B if the total net explosive mass on board of the transport unit is greater than 1,000 kg, otherwise the substance is forbidden for carriage in tunnel category C. (C1, D) means that the substance is forbidden for carriage in a tunnel of category C if the substance is carried in tanks, otherwise the substance is forbidden for carriage in tunnel category D.~~

~~NOTE : If in the table tunnel codes are indicated it means that there is a restriction for the passage of transport units in tunnel categories A,B,C,D or E as follows:~~

---

<sup>1</sup> *Special provisions concerning traffic restrictions in tunnels are to be found in chapter 8.6.*

Tunnel codes	Forbidden in tunnels of category	Signalisation of the tunnel
<del>B</del> B1000 <del>B1</del>	<del>B, C, D and E</del>	Sign according to 8.6.4.1 with additional letter <del>B</del>
<del>C</del> C5000 <del>C1</del>	<del>C, D and E</del>	Sign according to 8.6.4.1 with additional letter <del>C</del>
<del>D</del> <del>D1</del>	<del>D and E</del>	Sign according to 8.6.4.1 with additional letter <del>D</del>
<del>E</del>	<del>E</del>	Sign according to 8.6.4.1 without an additional letter

5. Amend the heading of Column (15) in table A of chapter 3.2 to read :

“Transport category  
1.1.3.6  
(Tunnel code)  
(~~1.9.5~~ and 8.6)”.

6. Add in column (15), at the bottom of the cell and 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, <del>C</del> )
	Division 1.2 compatibility group L	(B)
	Division 1.2 compatibility groups B, C, D, E, F, G, H and J	(B1000, <del>C</del> )
	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 [ <del>C, D</del> ])
	Division 1.4	(E)
	Division 1.5, compatibility group D	(B1000, <del>C</del> )
	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		( <del>C1D, D</del> )
Classification codes with letters A, O		(E)
Class 3	Classification code D	(B)
	Packing Group I, classification code FC, FT1, [FT2], FTC	( <del>C1E, E</del> )
	Packing Groups I and II, classification code F2	( <del>D1, E</del> )
	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	( <del>B1E, E</del> )

	Packing Group II	(D1, <del>E</del> )
	Others	(E)
Class 4.3	Packing Group I	(B1E, <del>E</del> )
	Packing Group II	(D1, <del>E</del> )
	Others	(E)
Class 5.1	Packing Group I	(B1E, <del>E</del> )
	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 3381 to 3390	(C1D, <del>D</del> )
	Packing Group I of classification codes TF2 and TW1	(D1, <del>E</del> )
	Packing Group II of classification codes TF1, TF2, TFC and TW1	(D1, <del>E</del> )
	Others	(E)
Class 6.2	UN Nos. 2814 and 2900	(E)
Class 7	UN Nos. 2977, 2978	(C)
	Others except UN Nos. 2919 and 3331	(E)
Class 8	Packing Group I of classification code CTI	(C1D, <del>D</del> )
	Packing Group I of classification codes CF1, CFT, and CW1	(D1, <del>E</del> )
	Others	(E)
Class 9	Classification codes M2, M3	(D1, <del>E</del> )
	M10	(D)
	Others	(E)
<b>Dangerous goods not mentioned above</b>		<b>(-)</b>

5. 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 ~~In accordance with 1.9.3 (a)~~, Contracting Parties may decide to restrict the circulation of vehicles carrying dangerous goods in tunnels.

8.6.1.2 **These restrictions are based on :**

- **the intrinsic dangerous properties of the dangerous goods carried, the type of containment and the quantity carried per transport unit,**
- **the tunnel characteristics, and**
- **risk assessment and traffic management.**

*[Combines 8.6.1.4 and the 2<sup>nd</sup> sentence of 8.6.1.2]*

8.6.1.2 Such restrictions shall be published officially and made publicly available.

*[1.9.5.2]*

- 8.6.1.3 ~~While determining the tunnel categories~~ Dangerous goods carried in accordance with 1.1.3 shall not be taken into account ~~in the grouping assignment~~ and are not subject to the tunnel restrictions.

*[1.9.5.7 and 8.6.2.3]*

## **8.6.2 Tunnel categories**

- 8.6.2.1 **Depending on the tunnel characteristics, the road tunnels are divided in five categories.** The categorisation is 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.

*[8.6.1.3]*

- 8.6.2.2 ~~For the purpose of restricting dangerous goods, tunnels shall be divided into 5 categories as follows.~~ These categories are the following :

- Tunnel A : No restrictions for the transport of dangerous goods **needed** ;
- Tunnel B : Restriction **needed** for dangerous goods which may lead to a very large explosion ;
- Tunnel C : Restriction **needed** for dangerous goods which may lead to a very large explosion, a large explosion or a large toxic release ;
- Tunnel D : Restriction **needed** for dangerous goods which may lead to a very large explosion, to a large explosion or a large toxic release and to a large fire ;
- Tunnel E : Restriction **needed** for all dangerous goods other than UN Nos. 2919, 3291, 3331 and 3373.

*[8.6.2.1]*

- 8.6.2.3 ~~For the purpose of passage of vehicles carrying dangerous goods, road tunnels are divided in five categories.~~ Depending on the tunnel characteristics, risk assessment and traffic management the ~~transport of dangerous goods may be restricted.~~ The tunnel category may change in different time periods e.g. on the hours of the day, or the day of the week etc.

*[8.6.1.2]*

## **8.6.3 Shipments of dangerous goods prohibited through tunnels of a given category**

- 8.6.3.1 **The restrictions for the transport of dangerous goods through tunnels are indicated by the alphanumeric codes B, B1000, B1D, B1E, C, C5000, C1D, C1E, D, D1 and E in Column (15) of Table A of Chapter 3.2. They are put between brackets at the bottom of the cell and their significance is the following :**

Code	Restrictions
<b>B</b>	Passage forbidden through tunnels of category B, C, D and E
<b>B1000</b>	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
<b>B1D</b>	Passage forbidden through tunnels of category B and C when carried in tanks ; Passage forbidden through tunnels of category D and E
<b>B1E</b>	Passage forbidden through tunnels of category B, C and D when carried in bulk or in tanks ; Passage forbidden through tunnels of category E
<b>C</b>	Passage forbidden through tunnels of category C, D and E
<b>C5000</b>	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
<b>C1D</b>	Passage forbidden through tunnels of category C when carried in bulk or in tanks ; Passage forbidden through tunnels of category D and E
<b>C1E</b>	Passage forbidden through tunnels of category C and D when carried in tanks ; Passage forbidden through tunnels of category E
<b>D</b>	Passage forbidden through tunnels of category D and E
<b>D1</b>	Passage forbidden through tunnels of category D when carried in bulk or in tanks Passage forbidden through tunnels of category E
<b>E</b>	Passage forbidden through tunnels of category E

8.6.3.2 ~~UN 3291 CLINICAL WASTE, UNSPECIFIED, N.O.S. or (BIO)MEDICAL WASTE, N.O.S. or REGULATED MEDICAL WASTE, N.O.S. and UN 3373 DIAGNOSTIC SPECIMENS~~ When ‘(-)’ is indicated in Column (15) of Table A of Chapter 3.2 instead of one of the alphanumeric codes, the dangerous goods are not subject to any tunnel restriction (UN Nos. 2919 and 3331 are, **however**, subject to carriage under special arrangement approved by the competent authority).

[8.6.3.2]

8.6.3.3 When dangerous goods associated with different tunnel ~~categories~~ codes are carried in the same transport unit, the transport unit shall be assigned to the most restrictive of **these** tunnel ~~categorization~~ codes.

[8.6.2.2]

#### 8.6.4 Provisions for road signs for the passage of vehicles carrying dangerous goods

8.6.4.1 When applying traffic restrictions to road tunnels in accordance with 8.6.1 to 8.6.3, Contracting Parties shall indicate such restrictions by means of road signs and signals. They may use :

- signs C, 3h and D, 10a, 10b and 10c and signals according to the 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’s Principal Working Party on Road Transport, as amended], or
- equivalent signs and signals when Contracting Parties consider it necessary to modify the signs and symbols prescribed in the Vienna Convention (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) ; the modifications made shall not alter their essential intent.

*[1.9.5.1, 1.9.5.3 and 8.6.4.1 combined]*

**8.6.4.2** These signs and signals shall be displayed with or without additional panels bearing a letter B, C or D as follows :

<b>Tunnel of category</b>	<b>Signalisation</b>
<b>A</b>	<b>No sign or signal</b>
<b>B</b>	<b>Sign or signal with an additional panel bearing the letter B</b>
<b>C</b>	<b>Sign or signal with an additional panel bearing the letter C</b>
<b>D</b>	<b>Sign or signal with an additional panel bearing the letter D</b>
<b>E</b>	<b>Sign or signal without an additional panel</b>

*[1.9.5.4, 8.6.4.2 and 8.6.4.3 combined]*

**8.6.4.3** Traffic signs and signals intended to prohibit access of vehicles carrying dangerous goods to road tunnels shall be accompanied with, or preceded by, signs and signals indicating or prescribing alternative itineraries that may appear with or without additional panels bearing letters B, C or D.

*[1.9.5.6, 8.6.4.2 and 8.6.4.3 combined]*

**8.6.5** **Additional restrictions**

8.6.5.1 ~~When~~ Contracting Parties **can also** 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 restrictions shall be published officially and made publicly available.~~

*[1.9.5.5].*

---