

**ECONOMIC COMMISSION FOR EUROPE
INLAND TRANSPORT COMMITTEE
Working Party on the Transport of Dangerous Goods**

**Joint Meeting of the RID Safety Committee and the
Working Party on the Transport of Dangerous Goods**
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Affaire suivie par V. PERTUIS

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Objet : Proposition de la France pour la modification des points 6.4.10 (réservé), 6.4.18 et 6.4.20 (réservé) (ADR et RID restructurés)

Monsieur,

J'ai l'honneur de vous transmettre en pièce jointe une proposition de la France, spécifique à la classe 7, pour la modification des points 6.4.10 (réservé), 6.4.18 et 6.4.20 (réservé) (ADR et RID restructurés) en vue d'un examen lors de la réunion commune qui se tiendra du 10 au 21 septembre 2001 à Genève.

Cette proposition vise à réintroduire les exigences pour les colis de type C, qui sont cités dans les accords ADR et RID restructurés et qui peuvent être utilisés pour le transport terrestre de marchandises de la classe 7. La proposition transmise ne fait que reprendre les points correspondants du règlement de l'ONU (Orange Book).

Je vous prie d'agréer, Monsieur, l'expression de ma considération distinguée.

**Le directeur de la sûreté
des installations nucléaires**

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Subject : Proposition of France for the modification of 6.4.10 (reserved), 6.4.18 and 6.4.20 (reserved) (restructured ADR and RID)

Summary :	Although Type C Package are allowed for road and rail transport of radioactive material, corresponding requirements for these packages are not mentioned in ADR/RID.
Action to take :	Introduce 6.4.10, 6.4.18 and 6.4.20 (requirements for Type C packages) of UN Orange Book
Reference Document :	UN Orange Book.

Reference and introduction

Large quantities of radioactive material must be packages in a Type C package for air transport. As 2.2.7.7.1.6 of restructured ADR/RID mentions, Type C packages can also be used for road and rail transport. Nevertheless, corresponding specific requirements are not given. Theoretically, a package only meeting the general requirements could be approved as an ADR/RID Type C package. It is therefore proposed to introduce corresponding requirements as they appear in UN Orange Book.

Proposition for 6.4.10, 6.4.18 and 6.4.20 of restructured ADR and RID

“6.4.10 Requirements for Type C packages

6.4.10.1 Type C packages shall be designed to meet the requirements specified in 6.4.2 and 6.4.3, and of 6.4.7.2-6.4.7.15, except as specified in 6.4.7.14(a), and of the requirements specified in 6.4.8.2-6.4.8.5, 6.4.8.9-6.4.8.15, and, in addition, of 6.4.10.2-6.4.10.4.

6.4.10.2 A package shall be capable of meeting the assessment criteria prescribed for tests in 6.4.8.7(b) and 6.4.8.11 after burial in an environment defined by a thermal conductivity of 0.33 W/(m.K) and a temperature of 38°C in the steady state. Initial conditions for the assessment shall assume that any thermal insulation of the package remains intact, the package is at the maximum normal operating pressure and the ambient temperature is 38° C.

6.4.10.3 A package shall be so designed that, if it were at the maximum normal operating pressure and subjected to :

- (a) The tests specified in 6.4.15, it would restrict the loss of radioactive contents to not more than 10^{-6} A₂ per hour ; and
- (b) The test sequences in 6.4.20.1, it would meet the following requirements :

- (i) retain sufficient shielding to ensure that the radiation level at 1 m from the surface of the package would not exceed 10 mSv/h with the maximum radioactive contents which the package is designed to contain ; and
- (ii) restrict the accumulated loss of radioactive contents in a period of 1 week to not more than $10 A_2$ for krypton-85 and not more than A_2 for all other radionuclides.

Where mixtures of different radionuclides are present, the provisions of 2.7.7.2.4-2.7.7.2.6 shall apply except that for krypton-85 an effective $A_2(i)$ value equal to $10 A_2$, may be used. For case (a) above, the assessment shall take into account the external contamination limits of 4.1.9.1.2.

6.4.10.4 A package shall be so designed that there will be no rupture of the containment system following performance of the enhanced water immersion test specified in 6.4.18.”

“6.4.18 Enhanced water immersion test for type B(U) and type B(M) packages containing more than $10^5 A_2$, and type C packages

Enhanced water immersion test : The specimen shall be immersed under a head of water of at least 200 m for a period of not less than one hour. For demonstration purposes, an external gauge pressure of at least 2 MPa shall be considered to meet these conditions.”

“6.4.20 Test for Type C packages

6.4.20.1 Specimens shall be subjected to the effects of each of the following test sequences in the orders specified :

- (a) The tests specified in 6.4.17.2(a), 6.4.17.2(c), 6.4.20.2 and 6.4.20.3 ; and
- (b) The test specified in 6.4.20.4.

Separate specimens are allowed to be used for each of the sequences (a) and (b).

6.4.20.2 Puncture/tearing test : The specimen shall be subjected to the damaging effects of a solid probe made of mild steel. The orientation of the probe to the surface of the specimen shall be as to cause maximum damage at the conclusion of the test sequence specified in 6.4.20.1(a).

- (a) The specimen, representing a package having a mass less than 250 kg, shall be placed on a target and subjected to a probe having a mass of 250 kg falling from a height of 3 m above the intended impact point. For this test the probe shall be a 20 cm diameter cylindrical bar with the striking end forming a frustum of a right circular cone with the following dimensions : 30 cm height and 2.5 cm in diameter at the top. The target on which the specimen is placed shall be as specified in 6.4.14 ;

- (b) For packages having a mass of 250 kg or more, the base of the probe shall be placed on a target and the specimen dropped onto the probe. The height of the drop, measured from the point of impact with the specimen to the upper surface of the probe shall be 3 m. For this test the probe shall have the same properties and dimensions as specified in (a) above, except that the length and mass of the probe shall be such as to incur maximum damage to the specimen. The target on which the base of the probe is placed shall be as specified in 6.4.14.

6.4.20.3 Enhanced thermal test: The conditions for this test shall be as specified in 6.4.17.3, except that the exposure to the thermal environment shall be for a period of 60 minutes.

6.4.20.4 Impact test: The specimen shall be subject to an impact on a target at a velocity of not less than 90 m/s, at such an orientation as to suffer maximum damage. The target shall be as defined in 6.4.14.”

Justification

The possible approval of a package not meeting all requirements of Type C packages could lead to a safety issue. It is also good to clarify that a Type C package can be used for road and rail transport.

Safety

This modification clarifies the conditions to which the delivery of a Type-C approval is subject.

Advantage

This proposal increases the coherence between modal regulations.

Disadvantage

None.

Transitional arrangements

Not applicable.