

Economic Commission for Europe

Inland Transport Committee

Working Party on the Transport of Dangerous Goods

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Work of the RID/ADR/ADN Joint Meeting

6 May 2014

Proposal for the use of flexible bulk containers (FBC)

Transmitted by the International Dangerous Goods and Containers Association (IDGCA)

1. In the Report of the Joint Meeting related to its spring 2014 session work ECE/TRANS/WP.15/AC.1/134, Section VI, it.35 to 38, the IDGCA was proposed to perform tests of the FBC in compliance with requirements of UN Regulation, it.6.8.5 in full scope excluding the Top lift test that had been performed earlier. The Test Report was presented to INF.46 at the spring session of the joint meeting in 2014 and in this information document.

2. In the Report of the Experts Joint Meeting on Rules attached to the European Agreement concerning the International Carriage of Dangerous Goods on Inland Waterway relating to its twenty fourth session, ECE/TRANS/WP.15/AC.2/50,

In the Report of Joint Meeting of RID Committee of Experts and Working Party on the Transport of Dangerous Goods relating to its Autumn session 2013 work ECE/TRANS/WP.15/AC.1/132,

In the Report of Working Party on the Transport of Dangerous Goods relating to its ninety fifth session, ECE/TRANS/WP.15/221,

the IDGCA was proposed to formulate requirements to vehicles providing FCBs safe transportation. The IDGCA formulated these requirements in INF.45 and submitted them at the spring session of the joint meeting in 2014 and in this document.

Proposal

3. All tests of flexible bulk containers were conducted in compliance with the requirements of UN Regulation, it.6.8.5 in full scope. The test reports and video and photo materials of Drop tests, Topple tests, Righting tests, Stacking test and Tear tests, as well as the Test Methodology and Test Program are presented in this information document.

4. The formulated requirement for vehicles designed for FBC transportation is as follows:

7.5.7.6 Loading of flexible bulk containers

7.5.7.6.1 Flexible bulk containers shall be carried within a vehicle /1 with rigid sides and ends that extend at least two-thirds of the height of the flexible bulk container

¹ The vehicle shall be equipped with a vehicle stability function according to UN regulation No. 13 series of Amendments 11.

Justification

5. The tilt angle test according UN-R 111 is accepted due to tests/proofs (95th Session of the Working Group on Dangerous Cargo Transportation, information of Testing Vehicles loaded with flexible containers (WP.15 Inf. 18))

6. The vehicle stability function is mandatory for.

5.2.1.32. Subject to the provisions of paragraph 12.4 of this Regulation, all vehicles in categories M₂, M₃, N₂ и N₃¹²⁾, having no more than 3 axes shall be equipped with a vehicle stability function. This shall include roll-over control and directions control and meet the technical requirements if Annex 21 to this Regulation.

¹²⁾ Off-road vehicles, special purpose vehicles (e.g. mobile plants using non-standard vehicles chassis – e.g. cranes, hydro-static driven vehicles, in which the hydraulic drive system is also used for braking and auxiliary functions). Class 1 and Class A buses of categories M₂ and M₃, articulated buses and coaches, N₂ tractors for semi-trailer with a gross vehicle mass (GVM) between 3.5 to 7.5 tons, shall be excluded from this requirement.

According to footnote 1 also 4 axle vehicles equipped with the vehicle stabilization function and also the other vehicles which are exempted according to footnote 12 of the UN-R13/11.

7. The vehicle stability function is well-proven and established on the market. The following table shows the transitional provisions for the vehicle stabilisation function of the UN-R13/11. Date of entry into force of the 11 series of amendments was 11 July 2008 proving further that this is established on the market.

Vehicle Category	Application date (as from the date after entry into force of the 11 series of amendments)	
	Contracting Parties applying this Regulation shall grant approvals only if the vehicle type to be approved meets the requirements of this Regulation as amended by the 11 series of amendments	Contracting Parties applying this Regulation may refuse first national or regional registration of a vehicle which does not meet the requirements of the 11 series of amendments to this Regulation
M ₂	60 months	84 months
M ₃ (Class III) ²²⁾	12 months	36 months
M ₃ < 16 tonnes (pneumatic transmission)	24 months	48 months
M ₃ (Class II and B (hydraulic transmission))	60 months	84 months
M ₃ (Class III) (hydraulic transmission)	60 months	84 months
M ₃ (Class III) (pneumatic control transmission and hydraulic energy transmission)	72 months	96 months
M ₃ (Class II) (pneumatic control transmission and hydraulic energy transmission)	72 months	96 months
M ₃ (other than above)	24 months	48 months
N ₂ (hydraulic transmission)	60 months	84 months
N ₂ (pneumatic control transmission and hydraulic energy transmission)	72 months	96 months
N ₂ (other than above)	48 months	72 months
N ₃ (2 axle tractors for semi-trailers)	12 months	36 months
N ₃ (2 axle tractors for semi-trailers with pneumatic control transmission (ABS))	36 months	60 months
N ₃ (3 axles with electric control transmission (EBS))	36 months	60 months
N ₃ (2 and 3 axles with pneumatic control transmission (ABS))	48 months	72 months
N ₃ (other than above)	24 months	48 months
O ₃ (combined axle load between 3.5 – 7.5 tonnes)	48 months	72 months
O ₃ (other than above)	36 months	60 months
O ₄	24 months	36 months

Source: UN-R13/11 Item 12.4.1

8. The following abstract shows the dynamic manoeuvres, which shall be tested (UN-R13/11 Annex 21 Item 2.2.3).

As a means of demonstrating the vehicle stability function any of the following dynamic manoeuvres shall be used ⁶⁾:

Directional Control	Roll-Over Control
Reducing radius test	Steady state circular test
Step steer input test	J-turn
Sine with dwell	
J-turn	
μ -split single lane change	
Double lane change	
Reversed steering test or "fish hook" test	
Asymmetrical one period sine steer or pulse steer input test	

To demonstrate repeatability the vehicle will be subject to a second demonstration using the selected manoeuvre(s).

These manoeuvres prove that the vehicle stabilisation function prevents obviously dangerous driving manoeuvres.

9. The most important issue is the correct load securing. This issue is addressed and solved in item 7.5.7.6.2.

10. We ask Experts of the Working Party on the Transport of Dangerous Goods to consider a possibility to remove square brackets and permit application of FBC in ADR from 2015.
