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Item 7 of the provisional agenda
Code of Practice for Packing of Cargo Transport Units

Proposals of the Russian Federation for updating the Code of Practice for Packing of Cargo Transport Units

Transmitted by the Government of the Russian Federation*

I. Introduction

1. Following the decisions adopted by the Working Party on Intermodal Transport and Logistics at its sixty-second session (30 October–1 November 2019) on beginning to update the Code of Practice for Packing of Cargo Transport Units, the Ministry of Transport of the Russian Federation submitted some proposed updates to the Code to the informal group of experts.

II. Proposed updates

2. In order to ensure traffic safety, the preservation of container cargoes and their stability against longitudinal and transverse displacements during transportation, most goods being transported need to be secured.

3. The regulatory framework on securing cargoes in containers, and specifically the Code of Practice for Packing of Cargo Transport Units of the International Maritime Organization (IMO), the International Labour Organization (ILO) and the Economic Commission for Europe, which is in force in countries of the European Union and Asia, is premised on container transport taking place by road and sea, and does not take any account of dynamic forces during carriage on 1,520 mm-gauge railways, especially during uncoupling operations in classification yards.

4. Chapter 5 of the Code sets out general conditions for the carriage of goods in containers, including acceleration coefficients for different modes of transport. Thus, for container cargoes being transported by rail, acceleration coefficients (longitudinal and transverse) of 0.5 are proposed.

* The present document contains the text submitted to the secretariat.

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5. In calculations for securing cargo in wagons and containers to be transported by rail in the Russian Federation, specific longitudinal inertial forces (a value similar to the product of the acceleration coefficient and gravitational acceleration (a = g = 9.81 m/s2)) of 1.0 – 1.19 tf/t in the longitudinal direction and of 0.33 – 0.5 tf/t in the transverse direction are used.

6. As there are three additional categories for marine transport, depending on the vessel's responsivity determined by the significant wave height of specific sea areas, it would be useful to introduce several categories for rail transport as well, according to the conditions of transportation (type of rolling stock, speed, shunting technology, etc.). The choice of acceleration coefficient used in the calculation will depend not only on the mode of transport, but also on the route.

7. Chapter 6 of the Code gives information on the permitted loads on container walls. It states that the side walls of the container are capable of withstanding a uniform load equal to 60% of the permitted payload. The front wall and the door end are capable of withstanding 40% of the permitted payload.

8. In accordance with the requirements of ISO 1496-1, paragraph 6.6.2, when testing a solid end wall and an end wall with a door opening, the container shall be subjected to an internal load of 0.4 R and each of the side walls to an internal load of 0.6 R. The internal load must be evenly distributed over the wall to be tested. These permissible values are correct only when the entire loading volume of the container is used and cannot be applied when securing heavy individual cargo units. Permissible values should be specified for wall loading in case of the placement of the load on part of the wall area (up to a certain height), as well as concentrated loads.

9. The principle of securing the load against the corner posts of the container to prevent longitudinal displacements, as shown in 2.3.4, figure 7.6, cannot be applied to the container structures currently used and should be reformulated.

10. The force that can be absorbed by a nail in a wooden block, as described in 2.3.5, should be specified according to the type (smooth, screw, etc.), length and diameter of the nail (taking account of current standards).

11. The sum of void spaces between the goods (150 mm) given in 2.3.6 should be revised.

12. The definition in 2.3.8. of the blocking capacity of dunnage bags for the securing of goods in containers should be revised.

13. The formula given in appendix 4, paragraph 4.3, for calculating permissible load on dunnage bags is not relevant, as manufacturers do not indicate the bursting pressure of the dunnage bags in marking. The proposed methodology should be changed.

14. Braces and fibre ropes (2.4.2 and 2.4.5) may not be used to secure goods in containers transported by rail in the Russian Federation because of the possibility of chafing under the effect of multiple inertial (vertical) loads.

15. In 2.4.4, the pre-tension given for lashings (braces and ropes) of 50% of the working load (lashing capacity) does not correspond to the pre-tension for web lashings. For example, the pre-tension for web lashings with a maximum securing load of 2,000 kgf is 500 kgf (according to EN12195-2). In 4.1.4, permissible values should be specified in respect of the recommendations concerning the loads on the container body components given in 3.1.1 to 3.1.3.

16. In 3.1.4, specific values should be given for the allowable displacement of the centre of gravity in the container. These values affect not only the operation of spreaders when lifting containers, but also the placement of containers on railway platforms.

17. It should be noted in 3.3.6 that shoring should not be placed in the container roof to secure goods.

18. In the first bullet point of 4.1.3, it should be added that forces should not be transferred to the container doors.

19. The example of securing a load to the corner posts of the container door opening shown in figure 7.32 is not correct, as the corner posts do not protrude beyond the side walls of the container.

20. In 4.3.1, it would be useful to introduce a tipping resistance safety margin of 10–20% in the tipping calculation formula.

21. In accordance with the recommendations set forth in 4.4.3 and the proposals in 4.4.4 and 4.4.5, specific requirements should be formulated for the securing of goods in containers during transportation by rail, and methods should be specified for evaluating the suitability and application of the securing arrangement.

22. Additional requirements should be included in 4.4.6 and an appropriate method for evaluating the suitability of the cargo securing arrangement should be added in appendix 5.

23. It is proposed that 5.2 and 5.3 be supplemented with specific methods for securing liquid and bulk cargoes.

24. In appendix 4, we suggest adding calculation methods for securing loads in containers using braces and web lashings.