

Economic Commission for Europe

Inland Transport Committee

Working Party on the Transport of Dangerous Goods

103rd session

Geneva, 6-10 November 2017

Item 5 (a) of the provisional agenda

**Proposals for amendments to Annexes A and B of ADR:
construction and approval of vehicles**

16 October 2017

Clarification of the requirements for EX/II and EX/III vehicles in 9.3.4.2 of ADR

Transmitted by the Government of Germany

Summary

Executive summary: Additional guidance on the German proposal 2017/20 for WP.15 as well as presentation of the results and of technical data from the fire test performed in accordance with DIN EN 13823:2002-06 (SBI test) by the Materials Testing Institute for Building in Hanover (MPA Bau Hannover).

Action to be taken: Discussion

Reference documents: Working Document (ECE-TRANS-WP15-2017-20e)
Report of the 102nd WP.15 meeting (ECE/TRANS/WP.15/237;
paragraphs 20-23)

Information

1. Germany asked WP.15 how the requirements in 9.3.4.2 of ADR were to be understood with regard to the materials used for the construction of the inside of the body of EX/III vehicles. The issue was discussed during the last (102nd) session of WP.15 in May 2017. In the end, tests and further data to serve as a basis for decision by WP.15 were requested. (see Report ECE/TRANS/WP.15/237; paragraphs 20-23)
2. Germany follows the recommendation made by WP.15. The requested test results and technical data of a sandwich panel from the submitted expert opinion are presented in the present informal document and addendum.
3. MPA Bau Hannover performed a fire test in accordance with DIN EN 13823:2002-06 (SBI test). The applied procedure is described on the first page of the material test report of MPA Bau Hannover (100149-Dra). Information on the test results can be found on pages 2 to 12 and is provided in full in Addendum 1 (German only).
4. In the following, Germany summarizes the results of the material test report carried out by the Hanover Materials Testing Institute for Building (100149-Dra).

Introduction

5. 9.3.4.2 of ADR requires using materials that, in accordance with standard EN 13501-1:2007 + A1:2009, are assigned to class B-s3-d2. To comply with the requirements of the above-mentioned standard, the material must meet the criteria of standard EN ISO 11925-2 (exposure period 30 seconds, flame spread after an additional 30 seconds must not exceed 150 mm above flame point).

6. After this has been proven (EN ISO 11925-2), the following criteria of EN 13823 must additionally be met: $FIGRA_{0.2MJ} \leq 120W/s$ (fire growth rate) and $THR_{600s} \leq 7.5MJ$ (total heat release).

7. Under 14.1 of standard EN 13501-1, the following comment can be found with regard to the values “s3” (smoke production) and “d2” (flaming droplets/particles): if the classification of a construction product contains the addition “s3” and/or “d2”, this means that the construction product does not need to comply with threshold values.

8. Description of the test setup and sample preparation

The pages one to three of the test report describe the sample and the test setup.

- sandwich panel element corner made of solid material insulating layer as well as steel and aluminium sheets;
- long side with vertical joint and special soft rubber sealing;
- short side with EPDM sealing and cover on the side where the flame is to be applied).

9. Results of the test report

A summary of the test results can be found on page three under item 7. The above-mentioned required criteria are specified in table 2.

From the test report it can be seen that the obtained values stay far below the threshold values ($FIGRA_{0.2MJ} \leq 15.2W/s$ and $THR_{600s} \leq 2.03MJ$).

10. Therefore, as a conclusion, it can be noted that the sample complies with the required standard in accordance with 9.3.4.2 and, for this reason, the material can be used for the construction of vehicles that carry dangerous goods of category EX/III.
