

Economic Commission for Europe

Inland Transport Committee

Working Party on the Transport of Dangerous Goods

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Interpretation of ADR

Interpretation of the requirements for thermal insulation in 7.1.7.4.5 of ADR 2019

Transmitted by the Government of the Netherlands

1. At its 103rd session, while discussing the implementation of the 20th edition of the Model Regulations into the ADR, the Working Party noted that section 7.1.5.4.5 of the Model Regulations and the new section 7.1.7.4.5 in ADR 2019 differed from the existing provision V8(3) of Chapter 7.2 of ADR 2017.
2. While the provisions in V8(3) of Chapter 7.2.4 of ADR 2017 specifically required thermal isolation for methods R3, R4 and R5, the proposed provision for the methods listed in (c), (d) and (e) of section 7.1.7.4.5 in ADR 2019 contained no such requirement. The Working Party *“noted that the measures proposed for subparagraphs (c), (d) and (e) in 7.1.7.4.5 were meaningless without thermal insulation”* (paragraph 29 ECE/TRANS/WP15/239). As a result, the Working Party amended the text at the beginning of subparagraphs (c), (d) and (e) in 7.1.7.4.5 of ADR 2019 by adding the words “thermal insulation”, thereby aligning the text to the long-standing existing provisions in 7.2.4 V8(3) of ADR. A number of other (editorial) amendments were also made to the text.
3. The Netherlands was invited to report this outcome to the UN Sub-Committee of Experts on the Transport of Dangerous Goods in order to amend the Model Regulations, if necessary. At its 53rd session in June 2018, the Sub-Committee adopted within square brackets, amendments to 7.1.5.4.5 requiring thermal insulation for methods (c), (d) and (e) and some additional editorial changes.
4. However, further intersessional discussions have raised concerns about the interpretation of these provisions. The text of 7.1.7.4.5 of ADR 2019 can be interpreted in two ways:
 - (a) The packages must be thermally insulated; or
 - (b) The transport unit must be thermally insulated.
5. Packing provision V8 of ADR 2019 only contains a reference to Chapter 7.1.7 as the text of provision V8 has been included in its entirety as 7.1.7.4.5. However, Chapter 7.1.7 contains multiple provisions on carriage under temperature control. As it currently stands, paragraph 7.1.7.4.5 in ADR 2019 only lists suitable methods for preventing the control temperature to be exceeded in order of increasing control capability, but it is not obvious from the heading of the Chapter or its subsections whether that whole sections is applicable to packages or also to vehicles and containers.
6. In the intersessional discussions, it has been pointed out that thermal insulation of packages is not appropriate where a package is carried in refrigerated vehicles or cargo transport units as thermal insulation of the packaging obstructs the heat exchange between

the substance in the package and the refrigerated environment in the vehicle or container. In addition, thermal insulation can lower the SADT or SAPT of the substance in the packaging as heat released due to very slow decomposition of the product cannot dissipate into the environment, resulting in a potentially unsafe situation.

7. Based on this, thermal insulation for the package would be appropriate in the methods listed under 7.1.7.4.5 (a) and (b) as no mechanical refrigeration is being used. However, for methods (c), (d) and (e), the transport unit is equipped with mechanical refrigeration which would make thermal insulation of the package inappropriate. However, it would be logical for the transport unit to be thermally insulated in order for the mechanical refrigeration to be effective.

8. The Working Party is invited to exchange views on the interpretation on the thermal insulation requirements in methods (c), (d) and (e) in section 7.1.7.4.5.

9. During this analysis, inconsistencies were also noted in terminology use between different sections of the ADR. While 7.1.5.4.5(b) (iv) refers to 'transport units', section 7.1.7.4.7 is applicable to 'vehicles' and 'containers'. Furthermore, while section 7.1.7.4.7 states that "*Where substances are required to be carried in insulated, refrigerated or mechanically-refrigerated vehicles or containers, these vehicles or containers shall satisfy the requirements of Chapter 9.6*", Chapter 9.6 only refers to complete or completed vehicles, containers are not mentioned at all. Clarifying these inconsistencies would increase the readability of the ADR.
