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TB

**RAILWAY INDUSTRY STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

TB/T 3138-2018

**Technical specification of flame retardant materials for railway
locomotive and vehicle
(English Translation)**

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This standard replaces TB/T 3138-2006 "Technical specification of flame retardant materials for railway locomotive and vehicle". Compared with TB/T 3138-2006, the main technical changes of this standard are as follows.

- MODIFY the division principle of structural material products used inside vehicles (see 3.2; 3.1 of the 2006 edition);
- ADD the sampling requirements for finished products of flame-retardant materials for railway locomotive and vehicle (see 3.1);
- ADD the flame retardant requirements of polymer materials (see 3.3.2);
- ADD the flame retardant requirements of general rubber materials (see 3.6)
- DELETE the physical and mechanical performance requirements of materials (see Table 1 ~ Table 16 of the 2006 edition);
- MODIFY the number of samples and judgment conditions in Appendix A (see Appendix A; Appendix A of the 2006 edition).

This standard was proposed by and shall be under the jurisdiction of the Institute of Standards and Metrology of China Academy of Railway Sciences Group Co., Ltd.

Drafting organizations of this standard. Institute of Metals and Chemistry of China Academy of Railway Sciences Group Co., Ltd., CRRC Qingdao Sifang Rolling Stock Research Institute Co., Ltd., Standard Metrology Institute of China Railway Science Research Institute Group Co., Ltd., CRRC Tangshan Rolling Stock Co., Ltd. CRRC Nanjing Puzhen Vehicle Co., Ltd.

1 Scope

This standard specifies the technical requirements and test methods for the flame retardant materials for railway locomotive and vehicle.

This standard applies to railway locomotives and passenger vehicles which has a maximum operating speed of not more than 200 km/h.

2 Normative references

The following documents are essential to the application of this document. For the dated documents, only the versions with the dates indicated are applicable to this document; for the undated documents, only the latest version (including all the amendments) is applicable to this standard.

GB/T 2406.2 Plastics - Determination of burning behavior by oxygen index -

Part 2.Ambient-temperature test

GB/T 5454 Textiles - Burning behavior - Oxygen index method

GB/T 5464 Non-combustibility test method for building materials

GB/T 8323.2 Plastic - Smoke generation - Part 2.Determination of optical density by a single-chamber test

GB 8624 Classification for burning behavior of building materials and products

3.1 General requirements

When testing fire-retardant materials for railway locomotive and vehicle, it shall sample from the finished products. If samples cannot be taken from finished products, it should prepare specimen according to actual applications.

3.2.1 Products with horizontal surface facing down

Mainly refers to products such as roof panels, side roof panels, luggage racks, etc. The products shall meet the requirements of Table 1.

3.2.3 Product with horizontal surface facing up

Mainly refers to products such as flooring and coverings. The products shall meet the requirements of Table 3.

3.3.1 Inorganic materials for thermal insulation (glass wool board, mineral wool, rock wool, etc.) shall meet the requirements in Table 5.

3.3.2 The high polymer materials used for thermal insulation shall meet the requirements of Table 6.

3.7 Wire and cable

The flame-retardant requirements and test methods of wires and cables shall comply with the provisions of TB/T 1484 (all parts) or be negotiated between the supplier and the buyer.

Appendix A

(Normative)

45° angle burning test method and judgment

A.1 45° angle burning test method

A.1.1 The 45° angle burning test device is as shown in Figure A.1. The specimen size is 257 mm long, 182 mm wide. The number of specimens is 2.

If the product is anisotropic, take two from each in the warp and weft directions.

Keep the specimens be inclined at 45°. The vertical distance from the bottom

center of the fuel container to the center of the specimen is 25.4 mm. Use a material with low thermal conductivity similar to cork as the base of the container. Add 0.5 mL of absolute ethanol to the combustion container to ignite it, until the fuel burned out.

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