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TRANSPORT INDUSTRY STANDARD
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ICS 43.080.10

R 10

JT/T 1285-2020

**Safety Technical Specifications for Commercial
Vehicles for Road Transport of Dangerous Goods**

危险货物道路运输营运车辆安全技术条件

Issued on: February 28, 2020

Implemented on: April 01, 2020

Issued by: Ministry of Transport of the People's Republic of China

Table of Contents

Foreword.....	3
1 Scope.....	4
2 Normative References	4
3 Terms and Definitions	6
4 Classification of Vehicles	7
5 Basic Requirements.....	7
6 General Requirements.....	7
7 Special Requirements.....	9
8 Transition Period for Standard Implementation.....	12
Appendix A (Informative) Information Sheet of Vehicles for Dangerous Goods Transport.....	13
Appendix B (Informative) Selection Requirements of Vehicles for Dangerous Goods Transport	14
Appendix C (Normative) Technical Requirements and Test Methods for Rear Guards of Atmospheric Tank Vehicles.....	16
Bibliography	18

Safety Technical Specifications for Commercial Vehicles for Road Transport of Dangerous Goods

1 Scope

This Standard specifies the classification and basic requirements, general requirements, special requirements and other safety technical requirements and test methods of vehicles for road transport of dangerous goods.

This Standard is applicable to the commercial vehicles such as Type-N vehicles, Type-O semi-trailers, semi-trailer tractors and semi-trailer trains consist semi-trailers that are engaged in the road transport of dangerous goods. Non-commercial vehicles can be used as reference.

This Standard is not applicable to mobile explosives manufacturing units whose purpose is to manufacture explosives on-site.

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 document.

GB/T 4208 Degrees of Protection Provided by Enclosure (IP Code)

GB 7258 Technical Specifications for Safety of Power-driven Vehicles Operating on Roads

GB 8624 Classification for Burning Behaviour of Building Materials and Products

GB 11567-2017 Motor Vehicles and Trailers-Lateral and Rear Underrun Protection Requirements

GB 11806 Regulations for the Safe Transport of Radioactive Material

GB 12676 Technical Requirements and Testing Methods for Commercial Vehicle and Trailer Braking Systems

GB/T 17619 Limits and Methods of Testing for Immunity of Electrical / Electronic Sub-Assemblies in Vehicles to Electromagnetic Radiation

JT/T 1178.2-2019 Safety Specification for Commercial Vehicle for Cargos Transportation - Part 2: Towing Vehicle and Trailer

JT/T 1242 Performance Requirements and Test Procedures for Advanced Emergency Braking System of Commercial Vehicle

QC/T 453 Compartment - Panel Van

3 Terms and Definitions

For the purposes of this document, the terms and definitions given in JT/T 1178.1-2018, JT/T 1178.2-2019, JT/T 617.1 and GB 21668 and the following apply.

3.1 Dangerous goods

Substances or articles that meet to classification requirements in JT/T 617.2, or listed in JT/T 617.3 with dangerous characteristics such as explosion, flammability, poisoning, infection, corrosion or radioactivity.

3.2 Motor vehicles for dangerous goods transport

The vehicles that are designed and manufactured to carry dangerous goods or tow dangerous goods semi-trailers.

3.3 Vehicles for dangerous goods transport

Motor vehicles for dangerous goods transport and semi-trailers and semi-trailer trains that are designed and manufactured for the dangerous goods transport.

NOTE: Rewrite GB 7258-2017, definition 3.5.

3.4 EX/II vehicles and EX/III vehicles

Vehicles for dangerous goods transport that are used to transport explosives and have a loading limit that meets the requirements of GB 21668.

3.5 FL type vehicles

Vehicles for dangerous goods transport that are used to transport flammable gases, flammable liquids with a flash point no higher than 60°C, automotive diesel that meets the requirements of GB/T 19147, or oil products listed in the United Nations Number UN 1202. Its cargo container is tank vehicles, tank containers or movable tanks, the volume of the container shall be greater than or equal to 3m³.

NOTE: Rewrite 21668-2008, definition 3.4.

3.6 OX type vehicles

6.1.2 Semi-trailer tractor for dangerous goods transport and motor vehicles for dangerous goods transport with a total mass greater than or equal to 12000kg shall be equipped with an electronic stability control system (ESC). The performance of the electronic stability control system shall comply with the provisions of Appendix A in JT/T 1094-2016; and the electromagnetic compatibility shall comply with the provisions of Level-3 in GB/T 18655 and GB/T 17619.

6.1.3 The rear axle (non-steering axle) of the semi-trailer tractor for dangerous goods transport, the rear axle of the motor vehicles for dangerous goods transport with a total mass greater than or equal to 12000kg, and all the axles of semi-trailer for dangerous goods transport shall be equipped with air suspension.

6.1.4 For semi-trailer tractors for dangerous goods transport and motor vehicles for dangerous goods transport with a total mass greater than or equal to 12000kg, the wheels with single tires shall be equipped with a tire pressure monitoring system (TPMS) or a device with tire pressure monitoring function. The performance of TPMS or a device with tire pressure monitoring function shall comply with the provisions of Appendix B in JT/T 1178. 2-2019; and the electromagnetic compatibility shall meet the requirements of Level-3 in GB/T 18655 and GB/T 17619.

6.1.5 For semi-trailer tractors for dangerous goods transport and motor vehicles for the dangerous goods transport with a total mass of more than 3500kg, the steering wheels shall be equipped with emergency safety devices for tyre bursts, which shall be marked in an easily visible positions of the driver's cab. The performance and test methods of the emergency safety device for tyre bursts shall meet the requirements of Appendix A in JT/T 1178.1-2018.

6.1.6 Motor vehicles for dangerous goods transport shall be equipped with on-board terminals of the satellite positioning system for road transportation vehicles that meet the requirements of JT/T 794.

6.2 Brake system

6.2.1 The steering wheels of the motor vehicles for dangerous goods transport and all the wheels of the semi-trailer for dangerous goods transport shall be equipped with disc brakes. When the lining of the service brake needs to be replaced, an acoustic or optical alarm device shall be used to alert the driver, and the alarm signal shall meet the requirements of GB 12676.

6.2.2 Semi-trailer tractors and semi-trailers for dangerous goods transport, and motor vehicles for dangerous goods transport with a total mass greater than or equal to 12000kg shall be equipped with an electric braking system (EBS).

6.2.3 N₂ and N₃ types motor vehicles for dangerous goods transport shall be equipped with retarders or other auxiliary braking devices. The performance of the equipped retarder or auxiliary braking device shall enable the vehicle to pass the IIA type test

7.1.6 It is strictly forbidden to lay electrical wiring in the cargo compartment of EX/II and EX/III vehicles.

7.1.7 The electrical devices installed in the cargo compartment shall have at least the IP45 degree of protection specified in GB/T 4208. If the vehicle bearing range includes goods in assembly group J specified in JT/T 617.6, the protection capacity shall be at least IP65 or equivalent protection measures.

7.1.8 The eddy current retarder shall not be used on the EX/II and EX/III trucks.

7.2 Special requirements for tank vehicles

7.2.1 Requirements for entire tank vehicles

7.2.1.1 The structures of FL, OX and AT types vehicles shall meet the requirements of GB 21668.

7.2.1.2 The design, manufacture and inspection of atmospheric tanks used for the dangerous goods transport shall meet the requirements of GB 18564.1 or GB 18564.2.

7.2.1.3 A fixed nameplate shall be installed on the easily visible positions of the tank body, tank vehicle chassis or semi-trailer frame. The nameplate shall include at least the unique code of the tank body, the tank body design code, Information about tank volume, name of manufacturer, date of manufacture, etc.

7.2.2 Rolling stability

7.2.2.1 The rolling stability of tank vehicles shall meet the requirements of GB 28373.

7.2.2.2 After the tank vehicle is fully loaded, the ratio of the outer distance between the grounding point of the tire on the same axle and the height of mass centre shall be no less than 0.9. The mass carried by the semi-trailer axle shall not exceed 60% of the maximum total mass of the train.

7.2.3 Rear protection of the atmospheric tank vehicle

7.2.3.1 N₂, N₃, O₃, and O₄ types atmospheric tank vehicles shall be equipped with rear guards that meet the requirements of Appendix C at the rear, except the tank vehicles with inclined platforms for the transportation of powdery or granular dangerous goods.

7.2.3.2 The pipelines and piping accessories on the tank body of the atmospheric tank vehicles shall not exceed the rear lower guard and rear guard of the vehicle; and the vertical projection distance BETWEEN the outer end surface of the pipeline and the pipe accessories on the rear head of the tank and rear head of the tank AND the inner side of the rear guard and the inner side of the rear lower guard in the longitudinal direction of the vehicle shall be greater than or equal to 150mm.

Appendix B

(Informative)

Selection Requirements of Vehicles for Dangerous Goods Transport

B.1 Selection requirements

B.1.1 For specific dangerous goods, it shall be in accordance with the vehicle type code specified in JT/T 617.3 to determine the applicable vehicle type. If JT/T 617.3 does not specify the vehicle type code applicable to certain dangerous goods, unless other regulations and standards provide otherwise, CT type vehicles can be used for transport.

B.1.2 The cargo compartment of the EX/II and EX/III vehicles for package transport shall be an independent closed structure, and meet the requirements of the rain test specified in QC/T 453.

B.2 Vehicle compatibility requirements

B.2.1 Tank vehicle compatibility requirements

Under the conditions that the tank design meets the requirements for the required medium safety specified in GB 18564.1 and other standards, after the vehicle type corresponding to the goods is determined according to JT/T 617.3, select the tank vehicle type according to the following requirements:

- a) If the vehicle type corresponding to the goods is FL type, FL type vehicle can be selected;
- b) If the vehicle type corresponding to the goods is OX type, OX type or FL type vehicles can be selected;
- c) If the vehicle type corresponding to the goods is AT type, FL type, OX type or AT type vehicle can be selected.

B.2.2 Compatibility requirements for semi-trailer tractor

Select the type of semi-trailer tractor according to the following requirements:

- a) If the vehicle type corresponding to the goods is FL type, FL type semi-trailer tractor can be used;
- b) If the vehicle type corresponding to the goods is OX type, OX type or FL type semi-trailer tractor can be selected;

Appendix C

(Normative)

Technical Requirements and Test Methods for Rear Guards of Atmospheric Tank Vehicles

C.1 Technical requirements

C.1.1 The width of the rear guard of the atmospheric tank vehicle (hereinafter referred to as the rear guard) shall be no less than that of the rear lower guard, and shall be no greater than the distance between the outermost points of the wheels on both sides of the rear axle of the vehicle (excluding deformation amount of the tyre).

C.1.2 The outer edges at both ends of the transverse member of the rear guard shall comply with the provisions of 9.4 in GB 11567-2017.

C.1.3 The rear guard shall be firmly fixed on the chassis of the tank truck or the frame of the tank semi-trailer; and cannot be loosened due to the vibration generated by the normal use of the tank truck.

C.1.4 The rear guard shall be fixed at the rear of the tank vehicle; and should be directly fixed at the end of the longitudinal beam of tank vehicle; and extend horizontally to the left and right sides of the tank vehicle.

C.1.5 After the rear guard is fixed, the lower end surface of the rear guard shall be no lower than the upper end surface of the rear lower guard specified in GB 11567-2017; and the upper end surface shall be no lower than the upper surface of the longitudinal beam of tank vehicle; and the top point on the upper end surface of the protective device shall not be 150mm higher than the upper surface of the longitudinal beam. The setting of the rear guard shall not affect the normal operation of the tank accessories.

C.1.6 The rear guard shall have a certain blocking ability against the force parallel to the longitudinal axis of the tank vehicle. After test as per C.2, the rear guard itself, its connection with the chassis (or frame), and the tank vehicle longitudinal beam shall not break, and the deformation amount of the rear guard along the longitudinal direction of the vehicle shall not exceed 150mm.

C.2 Test methods

C.2.1 Test conditions

The test conditions of the rear guard can refer to the requirements of B.1 in GB 11567-2017.

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