

Technical Regulations TR EEU 052/2021

Pursuant to Article 52 of the Treaty on the Eurasian Economic Union dated 29 May 2014 and paragraph 29 of Annex No. 1 to the Rules of Procedure of the Eurasian Economic Commission approved by Decision No. 98 of the Supreme Eurasian Economic Council dated 23 December 2014, the Council of the Eurasian Economic Commission **decided:**

1. To adopt the attached Technical Regulation of the Eurasian Economic Union "On the Safety of Metro Rolling Stock" (TR EAEU 052/2021).
2. To establish that the Technical Regulation of the Eurasian Economic Union "On the Safety of Metro Rolling Stock" (TR EAEU 052/2021) shall enter into force upon expiry of 36 months from the date of entry into force of this Decision.
3. This Decision shall enter into force upon expiry of 30 calendar days from the date of its official publication.

Members of the Council of the Eurasian Economic Commission:

From the Republic of Armenia	From the Republic of Belarus	From the Republic of Kazakhstan	From the Kyrgyz Republic	From the Russian Federation
M. Grigoryan	I. Petrishenko	A. Smailov	A. Kozhoshev	A. Overchuk

ADOPTED
by Decision of the Council of the
Eurasian Economic
Commission
dated 2 December 2021 No. 137

Technical Regulation of the Eurasian Economic Union "On the Safety of Metro Rolling Stock"

(TR EAEU 052/2021)

I. Scope of Application

1. This Technical Regulation applies to newly developed, modernised and manufactured metro rolling stock and its components (hereinafter, products) placed on the market in the customs territory of the Eurasian Economic Union (hereinafter, the Union) for use in metro systems.

The objects of technical regulation under this Technical Regulation are metro rolling stock and its components that directly affect the safety of such rolling stock.

The requirements of this Technical Regulation apply to the objects of technical regulation according to the list in Annex No. 1.

2. This Technical Regulation does not apply:

- a) to special-purpose (technological) rolling stock owned by metro organisations and intended for moving people and material assets within the territories of those organisations, performing operations involving metro rolling stock and carrying out various technological works on infrastructure for the organisations' own needs, and to its components;
- b) to metro rolling stock and its components placed on the market in the customs territory of the Union after this Technical Regulation enters into

force pursuant to civil-law contracts concluded before its entry into force;

c) to metro rolling stock placed on the market in the customs territory of the Union before this Technical Regulation enters into force (including rolling stock undergoing repair);

d) to metro rolling stock additionally acquired to supplement similar metro rolling stock operated as of the date of entry into force of this Technical Regulation;

e) to components manufactured as spare parts for servicing and repairing metro rolling stock specified in subparagraphs "b", "c" and "d" of this paragraph.

3. This Technical Regulation establishes requirements for products that are mandatory for application and compliance in the customs territory of the Union and are applied during their design and manufacture, product identification rules, marking requirements and rules for applying such marking, as well as forms, schemes and procedures for conformity assessment of products.

Requirements for the operation of metro rolling stock with regard to ensuring traffic safety are established by the legislation of the Member States of the Union (hereinafter, Member States) and regulatory documentation on the technical operation of metro systems.

This Technical Regulation was developed to protect human, animal and plant life and health and property, and to prevent actions that mislead consumers (users) of products regarding their intended purpose and safety.

II. Basic Concepts

4. For the purposes of applying this Technical Regulation, the concepts established by the Protocol on Technical Regulation within the Eurasian

Economic Union (Appendix No. 9 to the Treaty on the Eurasian Economic Union dated 29 May 2014), the standard conformity assessment schemes approved by Decision No. 44 of the Council of the Eurasian Economic Commission dated 18 April 2018 (hereinafter referred to as the standard schemes), as well as the concepts meaning the following, shall be used:

"automated train control system (АСУД)" – a system ensuring train movement control and safety on a section jointly with the systems and devices for centralized control of metro system infrastructure, equipped with on-board automatic train control devices (АУП) and automatic train protection devices (АЗП);

"automatic train signalling with automatic speed control (АЛС-АПС)" – a system of devices ensuring the reception of commands concerning the maximum permissible speed of metro rolling stock, monitoring compliance with the permissible speed, monitoring the driver's vigilance and controlling emergency braking;

"automatic brake" – a device ensuring the automatic stopping of a train (parts of a train) in the event of a brake line (electrical safety loop) rupture and when an emergency braking device (emergency brake valve, pull-off valve, stop button) is opened (pressed);

"similar products", "similar product sample" – a product (sample) of the same type as the product (sample) under consideration, having identical technical characteristics and being the closest in terms of design and manufacturing technology;

"metro car" – a car intended for operation on metro system lines;

"metro rolling stock gauge" – the maximum transverse outline (perpendicular to the track axis) within which the rolling stock must fit, taking into account the maximum specified tolerances and wear, as well as lateral inclination on springs, when installed on a straight horizontal

track and on a curve of the design radius, both in the unloaded and loaded condition;

"emergency braking distance" – the distance travelled by a metro car or a permanently coupled group of cars from the moment the brake system controls are actuated

on command from the train safety system and the brake system control is placed in the maximum braking force position until the train comes to a complete stop;

"driver's cab" – a part of the body of metro rolling stock separated by partitions, in which instruments and devices for controlling metro rolling stock are located and the driver's workplace is equipped (when the metro rolling stock is operated by a driver);

"metro system" – a type of transport in which rolling stock operates on electric traction on two rails on underground and open lines without crossing other modes of transport at the same level;

"modernization of metro rolling stock and (or) its components" – a set of works to improve the technical characteristics of metro cars by replacing their components with more advanced ones while complying with safety requirements;

"rerailing shoe" – a device used for lifting (rolling) metro rolling stock onto the rails in the event of derailment;

"safety justification" – a document containing Risk Analysis, as well as information from the design, operating and process documentation on the minimum measures necessary to ensure safety, accompanying the products at all stages of their life cycle and supplemented with information on the results of Risk Analysis at the operation stage after repair;

"metro rolling stock" – motor-coach rolling stock intended for transporting passengers on metro system lines;

"train" – a formation consisting of metro cars, capable of autonomous operation on metro system lines, bearing the prescribed signals and having an assigned number;

"microclimate control system" – a set of technical means and structural and planning solutions ensuring the formation and automatic maintenance of microclimate parameters within permissible limits;

"component of metro rolling stock" – a part or assembly unit incorporated into the design of metro rolling stock and ensuring its safe operation and the safety of maintenance personnel and (or) passengers, as specified in Appendix No. 1 to this Technical Regulation;

"parking brake" – a device with a manual or automatic drive, installed on a unit of metro rolling stock and intended to secure it when parked in order to prevent unintended movement;

"representative product sample" – a sample representing products belonging to one type in terms of intended or functional purpose, manufactured by one manufacturer from identical materials in accordance with the same technical documents and having one area of application;

"control, monitoring and safety devices, software of metro rolling stock" – hardware and software, hardware, and software means performing safety, monitoring and control functions;

"emergency braking device (emergency brake valve, stop button, pull-off valve)" – a device used to actuate automatic pneumatic, electro-pneumatic and electric brakes when emergency stopping is necessary;

"operating documents", "operating documentation" – design documents that, individually or together with other documents, define the rules for operating the products and (or) contain information certifying the values of the main parameters and characteristics (properties) of the products

guaranteed by the manufacturer, warranties and information concerning their operation during the specified service life.

III. Product Identification Rules

5. Products are subject to identification in order to classify them as objects of technical regulation under this Technical Regulation.

6. Product identification is carried out:

by an accredited certification body included in the Unified Register of Conformity Assessment Bodies of the Union (hereinafter, the certification body), during product certification;

by the applicant or, on the applicant's instructions, by a certification body, an accredited testing laboratory (centre), or the manufacturer's own testing laboratory, during product declaration;

by an authorised body of a Member State when exercising State control (supervision) over compliance with the requirements of this Technical Regulation.

7. Product identification is carried out by:

a) establishing that the name, description and intended purpose of the products correspond to the name and characteristics of the products constituting an object of technical regulation under this Technical Regulation;

b) comparing the requirements applicable to the products based on their intended purpose with the requirements of this Technical Regulation.

IV. Rules for placing products on the Union market

8. Products shall be placed on the Union market provided that they comply with the requirements of this Technical Regulation, as well as with the requirements of other Technical Regulations of the Union (Customs Union) applicable to them.

9. Products whose conformity with the requirements of this Technical Regulation has not been confirmed shall not bear the single mark of product circulation on the Union market and shall not be permitted to be placed on the Union market.

V. Safety Requirements

10. When designing metro rolling stock and its components, the degree of risk of a transport accident shall be assessed by calculation, experimentally or by expert evaluation, including on the basis of data obtained during operation of similar products.

11. The safety of metro rolling stock and its components shall be ensured by:

a) conducting research and development and experimental design work using proven technical solutions;

б) establishing criteria for the limit states of products;

в) selecting, during the design process, materials and substances used in the manufacture of products, taking into account the parameters and conditions of their operation;

г) establishing specified service lives and (or) resources of products;

д) conducting tests and measurements of the components of rolling stock specified in Annex No. 1 to this Technical Regulation for compliance with

safety requirements;

e) developing inspection methods for product manufacturing;

ж) determining the conditions and methods for product disposal;

з) conducting conformity assessment of products against the requirements of this Technical Regulation.

12. The strength, stability and technical condition of metro rolling stock and its components shall ensure the safe movement of trains at design speeds within the limits permitted for specific models (series) of metro cars.

13. When designing and manufacturing metro rolling stock and its components, the following shall be ensured:

a) compliance with the metro rolling stock gauge, taking into account the structure clearance gauge;

б) safe operation, taking into account external climatic and mechanical effects;

в) technical compatibility with the infrastructure of the metro system and with other metro rolling stock operated within that infrastructure;

г) resistance to wheel derailment;

д) resistance to overturning, including on curved sections of track;

e) prevention of unintentional movement from the parking position;

ж) coupling of metro cars in trains for the transmission of longitudinal forces during traction and braking of metro rolling stock;

з) passage of metro rolling stock in the coupled position along curved sections of track;

- и) an acceptable emergency braking distance when using automatic brakes;
- к) prevention of metro rolling stock components falling onto the track;
- л) not exceeding the maximum permissible values of traction and braking forces and acceleration values;
- м) sanitary-epidemiological and environmental safety;
- н) Electromagnetic Compatibility of electrical equipment with regard to ensuring the safe operation of instruments and equipment;
- о) Electromagnetic Compatibility of electrical equipment with the automation and telemechanics devices of the metro system and with the telecommunications devices of the metro system infrastructure;
- п) compliance with fire safety requirements;
- р) strength under operating load conditions and effects;
- с) absence of plastic deformation when longitudinal and vertical design dynamic loads are applied;
- т) fatigue resistance under low-cycle and high-cycle loading conditions;
- у) safe and reliable operation of electrical equipment under all operating conditions (under nominal and limiting power-supply conditions);
- ф) absence of contact between metro rolling stock components with each other or with elements of the metro system infrastructure, unless provided for by the design documentation;
- х) compliance with energy-efficiency requirements;
- ц) stopping of the train and its sections in the event of uncoupling;

ч) protection against skidding and wheelspin.

14. When designing metro rolling stock and its components, the developer shall adopt solutions ensuring the permissible level, established by the legislation of the Member States, of harmful and (or) hazardous effects on human life and health, animals, plants and the environment.

15. The designs of metro rolling stock and its components selected by the developer shall be safe throughout the specified service life and (or) until the specified resource is reached, and shall also withstand the effects and loads to which they may be subjected during operation.

16. When designing metro rolling stock, the developer shall provide for the use of metro rolling-stock software ensuring the safety of product functioning and operation.

17. During the modernisation of rolling stock and (or) its components, compliance with the safety requirements prescribed by this Technical Regulation shall be ensured.

18. When making changes to the design documentation or to the manufacturing technology of metro rolling stock and its components, the safety requirements established by this Technical Regulation shall be observed.

19. The necessary (clearly distinguishable) identification and warning inscriptions and marking shall be applied to metro rolling stock and its components. The information contained therein shall be duplicated and explained in the operating documents.

20. In accordance with the design documentation, metro cars shall bear marking ensuring product identification and containing the following information:

single mark of product circulation on the Union market;

name of the manufacturer and (or) its trademark;

product name and (or) designation of the series or type, number (if necessary);

Date of Manufacture (month, year);

tare mass.

The car body shall bear conventional designations indicating accessibility for persons with disabilities using wheelchairs (for cars intended for the carriage of persons with disabilities).

21. In accordance with the design documentation, the components of metro cars shall bear marking ensuring their identification and containing, among other things, the following information:

single mark of product circulation on the Union market;

name of the manufacturer and (or) its trademark;

product name and (or) designation of the series or type, number (if necessary) and (or) designation in accordance with the design documentation;

Date of Manufacture (month, year).

Marking may be applied only to the packaging, provided that the operating documents accompanying the components of metro rolling stock state that it is impossible or impracticable to apply the marking directly to the components of metro rolling stock due to the specifics of their design or operating conditions.

22. In accordance with the design documentation, wheelsets of metro rolling stock shall bear on the axle a mark containing information on the method of forming and the complete inspection of the wheelset, as well as

acceptance stamps applied during forming. The mark and stamps shall be placed in locations established by the design documentation. The possibility of accidental alteration of the information contained therein shall be excluded.

23. Measuring instruments belonging to the sphere of state regulation of ensuring the uniformity of measurements and installed on metro rolling stock shall comply with the requirements of the legislation of the Member States and acts of Union bodies in the field of ensuring the uniformity of measurements.

24. In accordance with the design documentation, glazing products of the driver's cab of metro rolling stock shall bear marking containing the following information:

single mark of product circulation on the Union market;

name of the manufacturer and (or) its trademark;

designation of the type of glass.

25. The text contained in the marking and operating documents shall be drawn up in Russian and, where the legislation of the Member State so requires, in the state language (state languages) of the Member State in whose territory the products are sold.

26. If the design documentation for a component of metro rolling stock requires the use of operating documentation, that component may be placed on the market only if such documentation is available.

27. During the operation, inspection, maintenance and repair of metro rolling stock, the arrangement and installation of its equipment shall ensure the safety of maintenance personnel.

28. Control, monitoring and safety devices and metro rolling-stock software shall include signalling and information means to warn of violations of the serviceable condition of metro rolling stock and its components that may result in situations threatening its safety.

Control, monitoring and safety devices of metro rolling stock shall prevent dangerous situations arising from possible logical errors by maintenance personnel.

29. Software of the control, monitoring and safety systems of metro rolling stock (both embedded and supplied on physical media) shall ensure:

- a) operability after reboots caused by failures and (or) malfunctions of technical equipment;
- б) integrity in the event of its own failures;
- в) protection against malicious software;
- г) protection against unauthorised access;
- д) protection against the consequences of failures, errors and malfunctions during operation, storage, input, processing and output of information;
- е) protection against accidental changes to information;
- ж) compliance with the properties and characteristics described in the accompanying documentation.

30. The version of the software of the control, monitoring and safety devices of metro rolling stock implementing safety functions shall be current and shall correspond to the information specified in the declaration of conformity of that software with the requirements of this Technical Regulation.

31. Control, monitoring and safety devices and metro rolling-stock software shall not, where the traction drive and other equipment operate despite malfunctions of the electrical and (or) pneumatic apparatus or software failures, permit changes to characteristics and operating modes that may result in a violation of the safe condition of metro rolling stock.

A failure of the control devices, where the onboard safety devices are operating properly, shall not result in a violation of the safe condition of metro rolling stock.

32. The layout of the driver's cab of metro rolling stock, the instruments and control devices, the information display systems, and the design of the driver's seat (where a driver's workstation is provided) shall meet ergonomic requirements, including ensuring convenient control from the "seated" and "standing" positions.

The controls for metro rolling stock shall:

be arranged taking into account the importance of the functions performed and the sequence and frequency of use;

bear inscriptions and (or) symbols in accordance with the design documentation;

be designed and located so as to prevent their unintended damage, activation, deactivation or switching.

The design and arrangement of the said instruments shall prevent glare from direct or reflected light.

The design of the driver's cab (where a driver's workplace is provided) shall ensure the driver has an unobstructed view, in both the "seated" and "standing" positions, of the route, signal lights, signal signs, third rail and the side view of metro rolling-stock cars, as well as an unobstructed view from the driver's cab within the regulated zone at any time of year and

day (for open sections) at all operating speeds.

33. Metro rolling stock shall be equipped with systems, installations and devices ensuring:

- a) train radio communication and public address;
- b) speed monitoring;
- c) "passenger-driver" communication and, where possible, "passenger-dispatcher" communication;
- d) door-closure monitoring signalling;
- e) recording of motion parameters and the operation of control, monitoring and safety systems;
- f) automatic fire detection and fire alarm;
- g) the possibility of passenger evacuation;
- h) pneumatic and electro-pneumatic braking;
- i) forced emergency ventilation of passenger saloons;
- j) service and emergency lighting;
- k) emergency braking (emergency brake valve, emergency button, pull-off valve);
- l) passenger information;
- m) automatic fire extinguishing (in all compartments except the passenger saloon and driver's cab);
- n) visual and audible warning signals indicating the beginning of door closing;

o) maintenance of the microclimate in the driver's cab and passenger saloons.

34. Automatic train signalling on metro rolling stock shall be supplemented by safety devices ensuring monitoring of the specified operating speeds and devices preventing the train from moving away from its stopping position unintentionally. If the driver becomes unable to control the train, the said devices shall ensure automatic stopping of the train.

35. The windows of the driver's cab shall be securely fastened and sealed.

36. Metro rolling stock shall be equipped with service and emergency lighting systems. Provision shall be made for manual and automatic activation of emergency lighting, as well as automatic switching of the emergency lighting system to an independent power source when voltage is absent from the main power source.

37. The design of newly developed metro rolling stock shall provide for the possibility of passage through the entire train and, in emergency situations, ensure the evacuation from the train of passengers and service personnel, including persons with reduced mobility, through the end doors of the driver's cab and the front section of the driver's cab using a gangway. In addition, an emergency exit for passengers to the track shall be provided by means of side steps and handrails of the driver's-cab doors.

38. The force of one person shall be sufficient to open (close) the emergency exit.

When the emergency exit is closed, tight contact with the emergency-exit door seal shall be ensured, preventing air flows and noise from entering the driver's cab.

39. Metro rolling stock shall be equipped with automatic pneumatic, electro-pneumatic and electrodynamic brakes ensuring deceleration or stopping of the train within the calculated braking distance during braking, irrespective of the loading of the metro rolling stock.

The pneumatic, electro-pneumatic and electrodynamic brakes of metro rolling stock shall have the necessary functionality and reliability under all operating conditions specified in the technical documentation and shall ensure smooth braking.

40. The automatic brakes of metro rolling stock shall provide for the use of different braking modes depending on the loading of the metro rolling stock, as well as stopping of the train in the event of a loss of integrity of the brake line, unauthorised uncoupling of metro rolling-stock units, actuation of the pull-off valve or the emergency brake valve.

41. Metro cars shall be equipped with automatic and (or) manual parking brakes ensuring that they remain stationary at full design load on the specified gradient.

The leading cars shall be equipped with a pull-off valve and an alarm system for the intrusion of unauthorised persons into the rear cab (where provided).

42. Components of metro rolling stock whose disconnection or destruction may cause them to fall onto the track or cause a violation of the metro rolling stock gauge shall have safety devices preventing components from falling onto the track and preventing violation of the gauge.

43. The main air reservoirs and accumulator batteries of metro rolling stock shall be installed outside the driver's cab and passenger saloons.

44. The operation of the electrodynamic brake shall be coordinated with the operation of the pneumatic and electro-pneumatic brakes during service or emergency braking. In the event of failure of the electrodynamic

brake, its automatic replacement by an electro-pneumatic or pneumatic brake shall be ensured.

45. Metro rolling stock and its components shall ensure safe operation and retain operability at ambient air temperatures within the values specified in the regulatory and technical documentation.

46. Metro rolling stock without a through passage shall be equipped with coupling devices preventing unintended uncoupling of metro rolling-stock units, and with gangway platforms ensuring the passage of passengers from car to car in emergency situations. The locks of the gangway doors of all metro rolling-stock cars shall open automatically when the fire alarm system is activated or manually from the driver's cab.

47. The mechanical properties of the axles and load-bearing elements of the bogies of motor and trailer cars of metro rolling stock shall ensure their mechanical safety throughout the designated service life. The axles of wheelsets and the load-bearing elements of the bogies of motor and trailer cars of metro rolling stock shall have the necessary strength reserves ensuring resistance to the formation and development of defects (cracks) throughout the service life specified in the design documentation. The set of properties of the wheels shall ensure their safety.

48. The life-support systems of the driver's cab and passenger saloons (air conditioning, including air heating, ventilation and cooling, air purification and disinfection, lighting, noise and vibration protection, and protection against electromagnetic radiation) shall be designed, manufactured, adjusted and installed so that, during operation, their output performance characteristics (microclimate parameters, concentrations of harmful chemical substances and pathogenic biological agents in the air, lighting, noise (including infrasound) and vibration levels, electromagnetic-radiation level, volume of supplied outdoor air, and positive air pressure) remain within permissible limits.

49. Passenger seats (benches) shall be securely fastened, withstand longitudinal loads without damage and prevent overturning during emergency braking.

All non-metallic materials used in the design and finishing of seats (benches) shall have a document certifying their conformity with sanitary and epidemiological safety requirements and a document confirming conformity with fire-safety requirements established by the legislation of the Member States or by acts forming part of Union law.

The space under seats (benches) shall either be closed to prevent (exclude) passengers from leaving objects under the seats (benches), or be open (visible), so as to ensure the timely detection of objects left by passengers under the seats (benches).

The layout of passenger saloons, the arrangement of passenger seats and the placement of support devices shall comply with ergonomic requirements.

Handrails and (or) other support elements ensuring safe travel shall be provided in the design of passenger saloons for standing passengers.

50. The body design of metro rolling stock shall provide points for lifting it with jacks. The surface intended to contact the jack heads shall prevent them from slipping.

For each unit of metro rolling stock, provision shall be made, in the event of derailment of wheelsets, for lifting by means of cranes, jacks and (or) rerailing shoes, as well as for transportation in the event of a malfunction or a seized wheelset.

51. Projecting structural and equipment parts of metro rolling stock and its components shall not have sharp ribs, edges or corners capable of injuring passengers or service personnel.

Metro rolling stock shall have special steps and handrails ensuring the safety of service personnel during operation, inspection, maintenance and repair, as well as side steps and handrails of the side doors of the driver's cab.

The steps and handrails of metro rolling stock shall be securely fastened. The surfaces of steps, platforms, footboards and flooring shall prevent slipping.

52. Non-metallic materials used in the interior arrangement of the passenger saloon of a metro rolling-stock car and the driver's cab shall not exceed the permissible values for the risk of fire initiation and development and exposure of people to hazardous fire factors and shall have a document certifying their conformity with the sanitary and epidemiological safety requirements established by the legislation of the Member States or by acts forming part of Union law.

Electrical wiring shall be made of wires and cables that do not propagate flame when installed singly or in groups, have reduced smoke emission and an equivalent toxicity rating (not higher than moderately hazardous), and do not emit corrosive gaseous products during combustion or smouldering. The electrical wiring of the fire-extinguishing system and emergency lighting shall be made of fire-resistant wires and cables. At points where cable channels, conduits, cables and wires pass through structures with a specified fire-resistance limit, cable penetrations with a fire-resistance limit not lower than that of these structures shall be provided. Cable penetrations shall comply with the operating conditions of metro rolling stock and retain their integrity and sealing properties under vibration.

The partition (including the door, where provided) separating the passenger saloon from the driver's cab shall be fire-resistant.

53. Metro cars shall ensure the safe passage of service personnel and passengers in emergency situations from one car to another via gangway platforms. The design of gangway platforms shall prevent people from falling onto the track.

The design of metro rolling stock shall ensure the possibility of continuing movement in the event of a fire.

54. The driver's seat (where a driver's workplace is provided) of metro rolling stock shall be securely attached to the floor and designed to prevent its deformation and overturning, including during emergency braking. It shall also comply with ergonomic requirements, be adjustable in the vertical and longitudinal directions, be lockable in the set position, and have folding armrests.

55. Metro rolling stock shall be designed to prevent accidental contact of service personnel and passengers with the rotating parts of electric machines, fans and compressors.

56. The electrical equipment of metro rolling stock shall have protection and signalling that is activated in the event of overloads, short circuits, earth faults, overvoltages in the electrical equipment, and the loss of voltage in the contact network.

57. Metal enclosures of electrical equipment, as well as all guards (including pipes, conduits and ducts) and structures for securing live parts which may become energised in the event of a fault, shall have protective earthing. Unprotected (uninsulated) energised parts of the electrical equipment of metro rolling stock, except for the rail current collector, shall be protected against accidental access by service personnel and/or passengers.

58. Metro rolling stock shall be equipped with special storage locations for a set of electrical protective equipment, as well as other special

equipment required for the maintenance and safe operation of such rolling stock. Access to the special storage locations shall be from the driver's cab.

59. The level of electromagnetic interference generated by metro rolling stock and its components shall not exceed the values within which such interference does not affect the operability of metro system infrastructure facilities or the rolling stock operated on it.

60. Battery compartments shall be of explosion-proof design. Battery compartments shall be made of non-combustible or flame-retardant material.

61. Metro cars shall be equipped with special locations for portable fire extinguishers.

Passenger compartments shall be equipped with elements of photoluminescent evacuation systems (PES), installed so that, in the event of an emergency lighting failure, passengers can:

orient themselves in a dark car;

identify the locations of portable fire extinguishers, intercom devices, etc.;

find their way while moving through the train to the leading or trailing car.

The following requirements apply to fire alarm systems and fire-extinguishing systems:

equipment compartments and undercar equipment components shall be equipped with fire-extinguishing systems
with automatic and manual control;

the fire-extinguishing system shall be activated only after the traction voltage in the car has been switched off. In the driver's cab from which the driver controls the train when a fire detector is activated, fire

extinguishing shall be carried out only using a portable fire extinguisher;

fire alarm control and indicating equipment shall:

provide an audible and/or voice alarm;

have visual and/or text indication specifying the location of the fire;

automatically monitor the serviceability of communication lines with fire detectors;

provide the possibility of periodic testing of fire detectors.

The fire alarm system shall detect faults (short circuits and open circuits) in the communication lines between fire detectors and the fire alarm control and indicating equipment. When metro rolling stock operates without a driver, the fire alarm and fire-extinguishing information shall be transmitted to the automated train control system (ATCS).

62. The driver's cab (where a driver's workplace is provided) shall be equipped with audible signalling devices. The audible signalling control system shall include devices for directly controlling the typhon by mechanical action.

63. The passenger compartment shall be equipped with automatic sliding or plug-sliding doors with centralised control. The compartment doors shall prevent spontaneous opening. During closing and opening at the end positions, the doors shall have movement deceleration.

Each door shall be equipped with an individual anti-trap system for passengers and baggage, and each doorway shall be equipped, both outside and inside the car, with visual and audible warning signals indicating door closure.

Metro cars shall be equipped with devices ensuring manual unlocking of the doors in emergency situations. The signal indicating activation of

manual door unlocking shall be transmitted to the driver (where a driver's workplace is provided) or to the automated train control system (ATCS). Each door shall be equipped with a locking device preventing unauthorised opening of the doors during movement, stopping and stabling.

64. The train shall have at least 2 spaces for passengers with disabilities using wheelchairs (at least 1 in each leading car), equipped with devices preventing spontaneous longitudinal movement or overturning of wheelchairs during train acceleration and braking. Such spaces shall be located by the first entrance door (the one closest to the driver's cab) of each leading car.

Spaces for passengers with disabilities using wheelchairs shall be equipped with support devices that such passengers can hold with their hands.

Spaces in the passenger compartment intended for passengers with disabilities using wheelchairs shall be equipped with communication devices connecting them to the driver's cab (where a driver's workplace is provided) or to the dispatcher.

65. The placement and number of signal lamps shall be determined in accordance with the established schemes for designating metro rolling stock. The light-intensity distribution parameters, the chromaticity of white and red signal lamps, and the headlamp (where provided) shall comply with the specified values determined by the requirements for the operation of metro rolling stock with regard to traffic safety, and shall be established by the legislation of the Member States and regulatory documentation for the technical operation of metro systems.

66. The operating documents for metro rolling stock and its components (for rolling stock, in the operating manual) shall contain recommendations for their safe disposal after expiry of the assigned service life (resource),

as well as for the disposal of the materials and substances used in them.

VI. Ensuring product conformity with the requirements of the Technical Regulation

67. Product conformity with the requirements of this Technical Regulation shall be ensured either by directly fulfilling its requirements or by fulfilling the requirements of the standards included in the list of international and regional (interstate) standards, and, in their absence, national (state) standards, the application of which on a voluntary basis ensures compliance with the requirements of this Technical Regulation (hereinafter referred to as the list of standards, the application of which ensures compliance with the requirements of this Technical Regulation).

68. Methods of tests and measurements of products shall be established in the standards included in the list of international and regional (interstate) standards, and, in their absence, national (state) standards containing rules and methods for tests and measurements, including sampling rules, necessary for applying and fulfilling the requirements of this Technical Regulation and performing conformity assessment of technical regulation objects (hereinafter referred to as the list of standards containing rules and methods).

VII. Conformity Assessment

69. Products covered by this Technical Regulation shall undergo conformity assessment against the requirements of this Technical Regulation before being placed on the market in the customs territory of the Union.

Conformity assessment of products shall be carried out in accordance with this Section and the standard schemes.

70. Conformity assessment shall be carried out in the form of confirmation of conformity of products with the requirements of this Technical Regulation (hereinafter referred to as conformity confirmation) in accordance with the standard schemes, taking into account the specific features established by this Technical Regulation.

71. Metro rolling stock and (or) its components that have undergone modernization shall also be subject to conformity confirmation.

72. Conformity confirmation shall be carried out in the form of:

a) certification by a certification body (schemes 1c, 2c, 3c, 4c, 7c, 8c);

6) declaration of conformity of products with the requirements of this Technical Regulation (hereinafter referred to as declaration of conformity) (schemes 1d, 2d, 3d, 4d, 5d, 6d).

73. Conformity confirmation may be carried out in the form of certification instead of declaration of conformity upon the applicant's written request to the certification body.

74. Product certification work shall be carried out by certification bodies holding valid accreditation in the required scope of accreditation and included in the Unified Register of Conformity Assessment Bodies of the Union.

75. Where the certification or declaration of conformity scheme provides for tests and measurements of products in an accredited testing laboratory (centre), the applicant or the certification body, in agreement with the applicant, may contact any accredited testing laboratory (centre) included in the Unified Register of Conformity Assessment Bodies of the Union to conduct tests and measurements of products (hereinafter referred to as the accredited testing laboratory (centre)).

76. The accredited testing laboratory (centre) shall conduct tests and measurements of products within its scope of accreditation under the terms of an agreement concluded with the certification body or the applicant (except where the testing laboratory (centre) and the certification body are the same entity). Accredited testing laboratories (centres) shall document the results of tests and measurements in the relevant reports and submit them to the certification body or the applicant.

77. The annexes to this Technical Regulation contain the following lists:

a list of metro rolling stock and its components subject to certification, in accordance with Annex No. 2;

a list of components of metro rolling stock subject to declaration of conformity, in accordance with Annex No. 3, including under schemes 1d and 2d (based on the applicant's own evidence), under schemes 3d, 4d and 6d (based on evidence obtained with the participation of an accredited testing laboratory (centre) and the applicant's own evidence (where available)), and under scheme 5d (based on the applicant's own evidence (where available) and evidence obtained with the participation of the certification body and, where necessary, an accredited testing laboratory (centre));

a list of individual provisions of the Union Technical Regulation "On the Safety of Metro Rolling Stock" (TR EAEU 052/2021) applied when confirming the conformity of components of metro rolling stock, in accordance with Annex No. 4.

78. For conformity assessment, the applicant may be a legal entity or an individual registered in the territory of a Member State in accordance with its legislation as an individual entrepreneur, being the manufacturer or seller or a person authorised by the manufacturer.

79. For declaration of conformity, the applicant shall compile and analyse the set of documents that served as the basis for adopting the declaration of conformity. Depending on the applicable declaration of conformity scheme, it shall include:

a) for serially manufactured products:

a copy of the technical documentation (design and (or) process and (or) operating documentation and (or) technical specifications (descriptions)) for the products, containing the main parameters and characteristics of the products, as well as their description, for conformity assessment purposes;

a list of standards (indicating their designations and titles, as well as sections (clauses, subclauses), where compliance with the requirements of this Technical Regulation may be ensured by applying individual sections (clauses, subclauses) of those standards rather than the standards as a whole) included in the list of standards, the application of which ensures compliance with the requirements of this Technical Regulation (where applied by the applicant);

a safety justification for conformity confirmation where the standards included in the list of standards, the application of which ensures compliance with the requirements of this Technical Regulation, are not applied or are applied partially (where necessary);

an agreement with the manufacturer (including a foreign manufacturer) providing for ensuring that products supplied to the customs territory of the Union comply with the requirements of this Technical Regulation and for liability for non-compliance of such products with those requirements (for a person authorised by the manufacturer);

a certificate (copy of a certificate) of conformity of the manufacturer's management system (for scheme 6d);

a document containing information on the registration or accounting (individual, identification) number of the applicant assigned upon State Registration of a legal entity or an individual as an individual entrepreneur in accordance with the legislation of the Member States;

test and measurement reports for product samples (specimens) (where available);

a document containing information on existing certificates of conformity and declarations of conformity for products whose components are subject to conformity confirmation (indicating the number and registration date);

other documents selected by the applicant that served as the basis for adopting the declaration of conformity (where available);

b) for a batch of products or a single product:

a copy of the contract (supply agreement) and shipping documents identifying the single product or batch of products (including its size);

copies of operating documents (where necessary);

a list of standards (indicating their designations and titles, as well as sections (clauses, subclauses), where compliance with the requirements of this Technical Regulation may be ensured by applying individual sections (clauses, subclauses) of those standards rather than the standards as a whole) included in the list of standards, the application of which ensures compliance with the requirements of this Technical Regulation (where applied by the applicant);

a document containing information on the registration or accounting (individual, identification) number of the applicant assigned upon State Registration of a legal entity or an individual as an individual entrepreneur in accordance with the legislation of the Member States;

test and measurement reports for product samples (specimens) (where available);

other documents selected by the applicant that served as the basis for adopting the declaration of conformity (where available);

a document containing information on existing certificates of conformity and declarations of conformity for products whose components are subject to conformity confirmation (indicating the number and registration date).

80. Product sampling for conducting tests and measurements of products shall be carried out by the applicant in accordance with the requirements established by the standards included in the list of standards containing rules and methods.

81. Product samples selected for tests and measurements shall be identical, in terms of design, composition and manufacturing technology, to the products supplied to the consumer (customer).

82. The applicant shall ensure the identification and testing and measurement of product samples in an accredited testing laboratory (centre), where this is provided for by the declaration of conformity scheme.

83. When declaring conformity on the basis of its own evidence, the applicant shall supplement the set of documents compiled in accordance with Clause 79 of this Technical Regulation with the following materials:

- a) a record of selection of representative product samples prepared by the applicant;
- b) test and measurement reports for products obtained from an accredited testing laboratory (centre) or the manufacturer's own laboratory;
- c) a type examination certificate (scheme 5d).

84. Registration, suspension, renewal and termination of the declaration of conformity shall be carried out in accordance with the procedure determined by the Eurasian Economic Commission.

To register the declaration of conformity, the applicant shall submit the documents provided for by the said procedure, as well as:

the set of documents provided for by Clauses 79 and 83 of this Technical Regulation;

the test and measurement report(s) conducted, depending on the declaration of conformity scheme, in an accredited testing laboratory (centre) or the manufacturer's own laboratory.

85. The validity period of the declaration of conformity shall not exceed 5 years.

86. The application for certification work shall be prepared by the applicant in accordance with the standard schemes in Russian and, where the legislation of the Member State contains a corresponding requirement, in the state language of the Member State in which product certification is carried out.

The application shall contain:

an indication of the provisions of this Technical Regulation with which the presented products for metro systems comply;

the applicant's commitments to comply with the certification rules and conditions;

additional information at the applicant's discretion;

a list of documents attached to the application.

87. Together with the application for certification work, the applicant shall submit the following documents and information to the certification body (depending on the applicable certification scheme):

a) for serially manufactured products:

a copy of the technical documentation (design, and (or) engineering, and (or) process, and (or) operating documentation) for the products;

a list of standards (indicating their designations and titles, as well as sections (clauses, subclauses), where compliance with the requirements of this Technical Regulation may be ensured by applying individual sections (clauses, subclauses) of those standards rather than the standards as a whole) included in the list of standards, the application of which ensures compliance with the requirements of this Technical Regulation (where applied by the applicant);

a safety justification for conformity confirmation where the standards included in the list of standards, the application of which ensures compliance with the requirements of this Technical Regulation, are not applied or are applied partially;

a copy of the document (documents) in accordance with which the products were manufactured (standard, organization standard, technical specifications or other document) (if available);

a certificate (copy of a certificate) of conformity of the manufacturer's management system (2c and 8c);

copies of certificates of conformity for critical components, materials, component parts or components of the product (if available);

a copy of the agreement with the manufacturer (including a foreign manufacturer), providing for ensuring the conformity of products imported into the customs territory of the Union with the requirements of this

Technical Regulation and liability for nonconformity of such products with the specified requirements (for a person authorised by the manufacturer);

a document containing information on the applicant's registration or accounting (individual, identification) number assigned upon State Registration of a legal entity or an individual as an individual entrepreneur in accordance with the legislation of the Member States;

a document containing information on the available certificates of conformity and declarations of conformity for products whose components are subject to conformity confirmation (specifying the registration number and date);

other documents selected by the applicant and submitted as evidence of conformity of the products with the requirements of the Technical Regulation (if available);

b) for a batch of products (single product):

a copy of the technical Documentation (design, and/or engineering, and/or process, and/or operating) for the products (if available);

a copy of the document (documents) in accordance with which the products were manufactured (standard, organization standard, technical specifications or other document) (if available);

a copy of the contract (supply agreement) and shipping documentation identifying the single product or batch of products (including its size);

a list of standards (specifying their designations and titles, as well as sections (clauses, subclauses), where compliance with the requirements of this Technical Regulation may be ensured by applying individual sections (clauses, subclauses) of these standards rather than the standards as a whole), included in the list of standards the application of which ensures compliance with the requirements of this Technical Regulation (where

applied by the applicant);

a safety justification for confirming the conformity of the products where the standards included in the list of standards the application of which ensures compliance with the requirements of this Technical Regulation are not applied or are applied in part (where necessary);

a document containing information on the applicant's registration or accounting (individual, identification) number assigned upon State Registration of a legal entity or an individual as an individual entrepreneur in accordance with the legislation of the Member States;

a document containing information on the available certificates of conformity and declarations of conformity for products whose components are subject to conformity confirmation (specifying the registration number and date);

other documents selected by the applicant and submitted as evidence of conformity of the products with the requirements of the Technical Regulation (if available).

88. The documents specified in Clause 89 of this Technical Regulation shall be submitted during initial certification.

Where a decision is made to combine acceptance tests and certification tests and measurements of the products, the documents specified in subclauses "a" and "ж" of Clause 89 of this Technical Regulation shall be submitted after the acceptance tests have been conducted and the action plan for eliminating identified deficiencies has been implemented.

89. For newly developed products, the applicant shall submit the following Documentation to the certification body together with the application for certification:

a) terms of reference for development of the product sample (if available);

- b) a copy of the document (documents) in accordance with which the products were manufactured (standard, organization standard, technical specifications and/or other document (if available));
- c) a set of technical Documentation (design, and/or engineering, and/or process, and/or operating) (to the extent agreed with the certification body);
- d) a product sample readiness report for conducting acceptance tests;
- e) the acceptance test programme (if the applicant plans to combine acceptance tests and certification tests and measurements of the products);
- f) acceptance test reports (if the applicant plans to combine acceptance tests and certification tests and measurements of the products);
- g) the acceptance commission's report;
- h) an action plan for eliminating deficiencies identified by the acceptance commission (if available) and documents confirming its implementation;
- i) a proposal on the method and place for affixing the single mark of product circulation on the Union market.

90. The Documentation specified in Clause 89 of this Technical Regulation may be submitted to the certification body as it is prepared and approved.

91. Documents submitted to the certification body for certification shall be drawn up with the applicant's details and the applicant's registration or accounting (individual, identification) number assigned upon State Registration of a legal entity or an individual as an individual entrepreneur in accordance with the legislation of the Member State, and shall be certified by the applicant's signature.

Copies of the submitted documents shall be bound and certified by affixing:

the inscription or stamp "True Copy" ("Correct");

the applicant's signature;

a printed name of the signatory specifying the applicant's surname, first name, patronymic (if available) and position;

the date of certification;

a seal (if available).

If the document is not bound, each sheet of the document shall be certified.

Documents may be submitted as electronic documents signed using an electronic digital signature (electronic signature) obtained by the applicant in accordance with the legislation of the Member State.

92. When certifying products, the results of acceptance tests and other tests and measurements of the declared products or similar product samples may be taken into account, provided that they were conducted in accredited testing laboratories (centres) under programmes agreed with the certification body. In this case, the applicant shall submit an application for certification before the tests and measurements begin and shall submit to the certification body a schedule for research, testing and measurement. The accredited testing laboratory (centre) shall inform the certification body of the commencement and progress of the tests and measurements. The specified tests and measurements may be taken into account during certification only where, based on their results, no substantial changes requiring repeated tests and measurements have been made to the product design or its manufacturing technology.

93. A positive decision on the application for certification shall include the principal conditions for conducting certification, including information:

- a) on the certification scheme;
- b) on the certification timelines;
- c) on the standards applied during certification;
- d) on the conditions and procedure for conducting a production condition analysis (if provided for by the certification scheme);
- e) on the procedure for product sampling;
- f) on the procedure and methods for conducting tests and measurements of product samples.

94. The grounds for the certification body's decision to refuse to conduct certification are:

- a) failure to comply with, or incomplete compliance with, the requirements established by Clauses 86, 87 and 89 of this Technical Regulation;
- b) inaccuracy of the information contained in the documents submitted by the applicant;
- c) the impossibility of classifying the products within the scope of this Technical Regulation;
- d) submission by the applicant of an application for certification to a certification body whose scope of accreditation does not cover the specified products;
- e) the applicant who submitted the application for certification does not belong to the category of applicants established by Clause 78 of this Technical Regulation.

95. During certification, product identification and product sampling shall be carried out by the certification body. Product sampling for tests and measurements shall be carried out in accordance with the requirements established by the standards included in the list of standards containing rules and methods.

Product samples selected for tests and measurements shall be identical in design, composition and manufacturing technology to the products supplied to the consumer (customer).

96. The product sampling report shall contain:

- a) the number and date of preparation of the product sampling report;
- b) the names and addresses of the manufacturer and applicant;
- c) the name, type, model and modification of the products;
- d) the unit of measurement;
- e) the size (volume) of the batch from which sampling was carried out;
- f) the result of the visual inspection of the batch (appearance, condition of the packaging and marking, and assessment of certification indicators determined by visual inspection);
- g) the date of manufacture of the batch;
- h) the designation and title of the regulatory document in accordance with which the samples were selected;
- i) the quantity and numbers of the selected samples;
- k) the address of the place where sampling was carried out;
- l) the storage conditions of the samples;

- m) the manufacturer's documents on final acceptance of the products;
- n) the details and signatures of the representative of the certification body and the applicant or manufacturer.

97. The product sampling report for products whose components are subject to conformity confirmation shall be accompanied by a list of those components specifying the manufacturer and the design Documentation in accordance with which they are manufactured.

Selected product samples shall be marked (where necessary) and sent for tests and measurements with a cover letter and sampling report. Where necessary, sealing and marking of individual components may also be carried out.

98. During identification, the principal characteristics of the product samples specified in the application for certification shall be compared with the characteristics stated in the marking and accompanying Documentation, which include:

- a) the name, type, model and modification;
- b) the manufacturer's name or information on the origin of the products;
- c) the document under which the products are released;
- d) intended-use parameters and other principal parameters;
- e) belonging to the relevant batch.

99. Conformity of the products with the requirements of this Technical Regulation shall be established on the basis of the results of the necessary tests and measurements conducted in accredited testing laboratories (centres).

100. By decision of the certification body, examination of evidence documentation may be conducted instead of tests and measurements of products, provided that the following conditions are met:

test and measurement results are available for similar product samples, obtained no more than 10 years ago;

no changes have been made to the design documentation or manufacturing technology;

information is available on the certificates of conformity and the set of documents submitted upon the initial issuance of the certificate;

no claims or identified nonconformities.

To confirm conformity with the parameters determined by the product design, the results of tests and measurements conducted during an earlier certification of these products may be used, provided that no changes affecting these parameters have been made to the design and/or manufacturing technology.

101. Products under development for metro rolling stock, whose design documentation has been assigned the designation "O", are not subject to certification.

For products bearing the designation "O₁" or higher, conformity confirmation with the requirements of this Technical Regulation is mandatory.

102. The test and measurement report shall contain:

a) the name and designation of the report (the designation of the report shall be repeated on each page);

6) the name and address of the accredited testing laboratory (centre), and accreditation details;

- в) information about the certification body that commissioned the tests and measurements;
- г) information about the applicant;
- д) the name, designation (description, marking), identification results, information about the manufacturer, and the Date of Manufacture of the products;
- е) the date of receipt of the products for research, testing and measurement;
- ж) information on the indicators being verified and the requirements applicable to them, as well as information on the regulatory documents containing these requirements;
- з) the date (period) of the research, testing and measurement;
- и) information on the methods and procedures used in carrying out the research, testing and measurement;
- к) information on the storage of the products before the research, testing and measurement began, the environmental conditions, and the preparation of the products for research, testing and measurement;
- л) information on the in-house and hired test equipment and measuring instruments used;
- м) information on research, testing and measurement performed by another accredited testing laboratory (centre), if any;
- н) the results of the research, testing and measurement, supported, where necessary, by tables, graphs, photographs and other materials;
- о) a statement that the test and measurement report relates only to the samples subjected to research, testing and measurement;

n) the signature of the head of the accredited testing laboratory (centre), certified by the organisation's seal, if any;

p) the signatures and positions of the responsible personnel who performed the research, testing and measurement;

c) the signature and position of the person or persons responsible for preparing the test and measurement report on behalf of the accredited testing laboratory (centre), where necessary;

τ) the date of issue of the test and measurement report;

y) information stating that amendments to the test and measurement report shall be documented in a separate document (an addition to or amendment of the report, or a new report cancelling and replacing the previous one);

φ) a statement excluding the possibility of partially reprinting the test and measurement report.

103. The test and measurement report shall be accompanied by a copy of the product sampling report certified by the accredited testing laboratory (centre) and a copy of the product readiness report for research, testing and measurement.

The test and measurement report shall not contain recommendations or proposals arising from the results of the research, testing and measurement.

104. The originals of the test and measurement reports prepared in accordance with Clauses 102 and 103 of this Technical Regulation shall be submitted to the certification body in 2 copies (one shall be attached to the certification file and the other shall be sent to the applicant). Copies of the test and measurement reports shall be stored at the accredited testing laboratory (centre) for at least the validity period of the certificate of

conformity, unless otherwise established by the legislation of the Member State.

Test and measurement reports may, in agreement with the certification body, be submitted as electronic documents signed using an electronic digital signature (electronic signature) obtained in accordance with the legislation of the Member State.

105. Production condition analysis is carried out to establish whether the manufacturer has the necessary conditions for manufacturing products placed on the market in the customs territory of the Union with stable characteristics confirmed during certification.

An assessment of whether the manufacturer has the necessary conditions for manufacturing products with stable characteristics and ensuring continuous (stable) conformity of products placed on the market in the customs territory of the Union with the requirements of this Technical Regulation, confirmed during certification, may be carried out during management system certification.

106. Production condition analysis is carried out with respect to:

processes;

technical documentation (design, and/or design-engineering, and/or process, and/or operating);

means of process equipment;

control of process equipment;

control of metrological equipment;

methods and procedures for research, testing and measurement;

procedures for incoming inspection of raw materials and components;

procedures for product control during its manufacture, including acceptance tests;

control of nonconforming products;

procedures for handling claims;

personnel competence;

interaction with consumers;

product identification and traceability;

control of Documentation;

special processes;

marking of finished products, their storage conditions, packaging and preservation;

production infrastructure (a set of facilities located on the manufacturer's premises and necessary for organising production (production premises, transport, etc.));

corrective and preventive actions.

107. Following the production condition analysis, a production condition analysis report for certified products shall be drawn up, specifying:

a) the results of the production condition analysis;

б) additional materials used in the production condition analysis;

в) an overall assessment of the production condition;

г) the need for and deadlines for corrective actions.

108. The production condition analysis report for products subject to certification shall be drawn up in 2 copies (one shall be kept by the certification body and the other shall be sent to the applicant).

109. After reviewing the test and measurement report and the results of the production condition analysis (where provided for by the certification scheme), as well as other evidence documentation, the certification body shall prepare a decision to issue (or refuse to issue) a certificate of conformity.

110. The grounds for the certification body's decision to refuse to issue a certificate of conformity are:

a) non-conformity of the products with the requirements of this Technical Regulation;

б) a negative result of the production condition analysis (where provided for by the certification scheme);

в) the presence of inaccurate information in the submitted documents.

111. Based on the decision to issue a certificate of conformity, the certification body shall prepare the certificate of conformity in accordance with the unified form and rules approved by the Eurasian Economic Commission, register it in the Unified Register of Issued Certificates of Conformity and Registered Declarations of Conformity in accordance with the established procedure, and issue it to the applicant. The period for issuing the certificate of conformity shall not exceed 30 working days from the date on which the certification body receives the test and measurement reports and, where necessary, documents confirming the elimination of nonconformities identified during certification.

112. Products that include components subject to conformity confirmation may be marked with the single mark of product circulation on the market of the Union only if certificates of conformity or declarations of conformity

for those components are available.

113. Product prototypes that do not have a certificate of conformity or declaration of conformity for individual components may be released for controlled operation until the certificate of conformity or declaration of conformity for those individual components is obtained.

114. If changes are made to the design (composition) of certified products or to their manufacturing technology that may affect the products' conformity with the requirements of this Technical Regulation, the applicant shall notify the certification body in advance. The certification body shall decide whether new research, testing and measurement or production condition analysis is necessary and determine its scope for the part affected by the changes. After the additional research, testing and measurement and/or production condition analysis has been carried out, the certification body shall decide whether the certificate of conformity may remain valid following changes to the design (composition) of the certified products and/or their manufacturing technology. All evidence documentation obtained during conformity assessment and confirming the conformity of the changed design (composition) of the certified products and/or their manufacturing technology with the requirements of this Technical Regulation shall be attached to the certification file containing the initial evidence of conformity with the requirements of this Technical Regulation.

115. The operating documentation accompanying certified products and the shipping documentation shall contain the single mark of product circulation on the market of the Union, as well as the registration number of the certificate of conformity, the date of its issue and its validity period.

116. The validity period of the certificate of conformity:

for serially produced products shall be no more than 5 years;

for a batch of products or a single product, shall not be established.

117. Periodic assessment of certified products (where provided for by the certification scheme) shall be carried out by the certification body that performed their certification.

Periodic assessment of certified products shall take the form of periodic scheduled and unscheduled inspections, ensuring that information on the certified products is obtained in the form of the results of research, testing and measurement and production condition analysis, as well as information on compliance with the conditions and rules for using the certificate of conformity and the single mark of product circulation on the market of the Union, in order to confirm that products for metro rolling stock continue to comply with the requirements of this Technical Regulation throughout the validity period of the certificate of conformity.

During periodic assessment of certified products, results obtained during periodic assessment of the management system may be used if the management system certification was performed by a certification body for management systems established on the basis of the same organisation as the product certification body.

118. The criteria for determining the frequency and scope of periodic assessment of certified products are:

- a) the degree of potential hazard of the products;
- б) the results of the product certification performed;
- в) the stability of the product manufacturing process;
- г) the production volume;
- д) whether the manufacturer has an implemented management system certified by a certification body for management systems.

119. The deadline for conducting the first scheduled periodic assessment of certified products is established in the decision of the certification body to issue a certificate of conformity. The periodicity of subsequent periodic assessments may be established in the reports on conducting the periodic assessment of certified products.

Periodic assessment of certified products in the form of periodic scheduled inspections is conducted 1 time per year.

120. Unscheduled periodic assessment of certified products is conducted if there is information (supporting documents) regarding cases of violation of product safety requirements. Said information may be obtained from consumers, as well as from the authorities of the Member States exercising state control (supervision) over the safety of products for which a certificate of conformity has been issued.

The scope of work during an unscheduled periodic assessment of certified products is determined by the need to verify manufacturing processes associated with the detected deficiencies in ensuring product safety.

121. Periodic assessment of certified products includes:

- a) analysis of documents and materials on product certification;
- b) analysis of received information on certified products (including results of supervised operation (if provided for));
- c) verification of the absence of changes recorded during certification that affect product safety indicators being introduced into product design and manufacturing technology;
- d) analysis of the correct marking of products and accompanying documentation with the single mark of product circulation on the market of the Union;

- e) analysis of claims against certified products (if any);
- f) analysis of corrective actions to eliminate previously identified non-conformities (if any);
- g) production condition analysis or analysis of the results of periodic assessment of a certified management system conducted by a management systems certification body;
- h) sampling and product identification, conducting tests and measurements of product samples, and analysis of obtained results.

122. The scope (certification indicators), number of product samples for tests and measurements, and the procedure for conducting them during periodic assessment of certified products shall be determined by the certification body conducting the periodic assessment of certified products.

In the absence of claims and complaints regarding certified products and changes introduced into the design of certified products and their manufacturing technology, testing may be conducted in an accredited testing laboratory (centre).

123. The results of periodic assessment of certified products are documented in a report on conducting the periodic assessment of certified products.

In the report on conducting the periodic assessment of certified products, based on the results of work performed in accordance with paragraph 121 of this Technical Regulation, a conclusion is given on the conformity of products with the requirements of this Technical Regulation, the stability of their fulfillment, and the feasibility of maintaining the issued certificate of conformity or on suspension (cancellation) of the certificate of conformity, and also specifies the content, scope, and procedure for conducting tests and measurements, as well as the number of product

samples required for conducting tests and measurements during the next periodic assessment of certified products.

124. Conducting tests and measurements during periodic assessment of certified products on a representative product sample manufactured using a technology similar to the manufacturing technology of the verified certified products is permitted.

125. The deadline for submitting results of tests and measurements of product samples selected during the periodic assessment of certified products is established by the certification body taking into account the scope of tests and measurements.

In the event of an absence of certified product samples (representative product sample) during the period of conducting periodic assessment of certified products and (or) impossibility of sampling them for conducting tests and measurements (of which the applicant officially informs the certification body), periodic assessment is conducted in accordance with paragraph 121 of this Technical Regulation (with the exception of subparagraph "h").

Upon resumption of the production of certified products, the applicant informs the certification body of the feasibility of performing product sampling, product identification, and conducting tests and measurements. Further periodic assessment of certified products is carried out taking into account the work already completed.

126. Based on the results of periodic assessment of certified products, one of the following decisions may be made:

a) the certificate of conformity continues to be valid if the products for metro rolling stock comply with the requirements of this Technical Regulation;

b) validity of the certificate of conformity is suspended if through corrective actions the manufacturer can eliminate the identified causes of non-compliance of products with the requirements of this Technical Regulation within a period of no more than 6 months;

c) validity of the certificate of conformity is terminated if through corrective actions the manufacturer cannot eliminate the identified causes of non-compliance of products with the requirements of this Technical Regulation within a period of no more than 6 months.

127. A decision on suspension or termination of the certificate of conformity may be made by the certification body upon request of the applicant.

VIII. Marking of Products with the Single Mark of Product Circulation on the Market of the Union

128. Products complying with safety requirements and having passed the conformity confirmation procedure according to Section VII of this Technical Regulation must have marking with the single mark of product circulation on the market of the Union.

129. Marking with the single mark of product circulation on the market of the Union is carried out prior to placing on the market of the Union.

130. The single mark of product circulation on the market of the Union is applied to each product unit.

The single mark of product circulation on the market of the Union is applied to the product itself, and is also provided in the operating documentation and shipping documentation accompanying it.

The single mark of product circulation on the market of the Union is applied by any method providing a clear and legible image throughout the entire service life of the product.

131. Application of the single mark of product circulation on the market of the Union only to packaging with an appropriate indication in the accompanying operating documents is permitted in the case where it is impossible to apply it directly to the product due to features of its design.

132. Marking of products with the single mark of product circulation on the market of the Union indicates their conformity with the requirements of all Technical Regulations of the Union (Customs Union) that apply to them.

ANNEX No. 1
to Technical Regulation
of the Eurasian Economic
Union
"On Safety of Metro
Rolling
Stock" (TR EAEU
052/2021)

LIST

of Objects of Technical Regulation Subject to Requirements of Technical Regulation of the Eurasian Economic Union "On Safety of Metro Rolling Stock" (TR EAEU 052/2021)

I. Metro rolling stock

1. Metro rolling stock, its cars

II. Components of metro rolling stock

2. Brake blocks (of shoe and (or) disc brake)

3. Air distributors

4. High-speed circuit breakers

5. Hydraulic dampers of metro rolling stock

6. Brake discs of metro rolling stock
7. Glazing products of metro rolling stock
8. Rubber sealing products for pneumatic braking systems of metro rolling stock (diaphragms, packings, collars, valve seals, gaskets)
9. Emergency brake valve
10. Gear wheels of a gearbox
11. Rolled-solid wheels for metro rolling stock
12. Wheelsets of metro rolling stock
13. Brake shoes and brake linings for metro rolling stock
14. Compressors for metro rolling stock
15. Electropneumatic and electromagnetic power-circuit contactors
16. Driver's seat
17. Finished axles of metro rolling stock
18. Rolling bearings for axle boxes of metro rolling stock
19. Power-circuit fuses
20. Static converters
21. Springs of the suspension system of metro rolling stock
22. Disconnectors, earthing switches, isolators, power-circuit switches, earthing switches
23. Bogie frame of metro rolling-stock car

24. Air reservoirs
25. Starting resistors, dynamic-braking resistors, damping resistors
26. Windscreen wipers for metro rolling stock
27. Parking brake of metro rolling stock (actuator part)
28. Coupling (automatic coupler) of metro rolling stock
29. Bogies of motor and trailer cars of metro rolling stock
30. Driver's brake valves
31. Traction motors
32. Universal automatic train-stop switches
33. Train radio communication devices
34. Control, monitoring and safety devices, software of metro rolling stock
35. Brake cylinders

ANNEX No. 2
to Technical Regulation
of the Eurasian Economic
Union
"On Safety of Metro
Rolling
Stock" (TR EAEU
052/2021)

LIST

of metro rolling stock and its components subject to certification

I. Metro rolling stock

1. Metro rolling stock, its cars

II. Components of metro rolling stock

2. Brake blocks (block and/or disc brakes)
3. Air distributors
4. High-speed circuit breakers
5. Brake discs of metro rolling stock
6. Glazing products of metro rolling stock
7. Gear wheels of gearboxes
8. Rolled-solid wheels for metro rolling stock
9. Wheelsets of metro rolling stock
10. Compressors for metro rolling stock
11. Finished axles of metro rolling stock
12. Rolling bearings for axleboxes of metro rolling stock
13. Static converters
14. Springs of the suspension system of metro rolling stock

15. Disconnectors, earthing switches, isolators, switches and earthing switches of power circuits
16. Coupling (automatic coupler) of metro rolling stock
17. Bogie of motor and trailer cars of metro rolling stock
18. Driver's brake valves
19. Traction motors
20. Universal automatic train-stop switches
21. Train radio communication devices

APPENDIX No. 3
to the Technical Regulation
of the Eurasian Economic
Union
"On the Safety of Metro
Rolling Stock
" (TR EAEU
052/2021)

LIST

of components of metro rolling stock

subject to declaration of conformity

I. Components of metro rolling stock subject to declaration of conformity under schemes 1d and 2d

1. Windscreen wipers of metro rolling stock

II. Components of metro rolling stock subject to declaration of conformity under schemes 3d, 4d, 5d and 6d

2. Hydraulic dampers of metro rolling stock

3. Rubber sealing products for pneumatic brake systems of metro rolling stock (diaphragms, cuffs, collars, valve seals, gaskets)
4. Emergency brake valve
5. Brake shoes and brake linings for metro rolling stock
6. Electropneumatic and electromagnetic contactors of power circuits
7. Driver's seat
8. Power-circuit fuses
9. Bogie frame of a metro rolling-stock car
10. Air reservoirs
11. Starting, dynamic-braking and damping resistors
12. Parking brake of metro rolling stock (actuating part)
13. Control, monitoring and safety devices, metro rolling-stock software
14. Brake cylinders

APPENDIX No. 4
to the Technical Regulation
of the Eurasian Economic
Union
"On the Safety of Metro
Rolling Stock
" (TR EAEU
052/2021)

LIST
of individual provisions of the Technical Regulation of the
Eurasian Economic Union "On the Safety of Metro Rolling
Stock" (TR EAEU 052/2021), applied in conformity

confirmation of components of metro rolling stock

Components of metro rolling stock	Designation of the clause (subclause) of the Technical Regulation
Metro rolling stock and its metro cars	clauses 12, 13, 15, 16, 19, 20, 23, 28, 29, 31 – 35, 39 – 46, 48 – 66
Brake blocks (of block and (or) disc brakes)	subclauses "a" and "б" of clause 13, clauses 15, 21, 45, 66
Air distributors	clauses 21, 45, 66
High-speed circuit breakers	subclauses "б" and "x" of clause 13, clauses 15, 21, 66
Hydraulic dampers of metro rolling stock	subclauses "б" and "т" of clause 13, clauses 15, 21, 45, 66
Brake discs of metro rolling stock	subclause "б" of clause 13, clauses 15, 21, 45, 66
Glazing products of metro rolling stock	subclause "б" of clause 13, clauses 15, 24, 66

Rubber sealing products for pneumatic brake systems of metro rolling stock (diaphragms, cuffs, collars, valve seals, gaskets)	subclause "6" of clause 13, clauses 15, 21, 45, 66
Emergency brake valve	subclauses "6", "и" and "л" of clause 13, clauses 21, 45, 66
Gear wheels of a gearbox	subclauses "6", "и" and "л" of clause 13, clauses 21, 45, 66
Rolled-solid wheels for metro rolling stock	subclauses "6", "г", "р" – "т" of clause 13, clauses 15, 21, 45, 47, 66
Wheelsets of metro rolling stock	subclauses "6", "г" and "р" of clause 13, clauses 15, 21, 22, 45, 66
Brake shoes and brake linings for metro rolling stock	subclause "6" of clause 13, clauses 15, 21, 45, 66
Compressors for metro rolling stock	subclause "6" of clause 13, clauses 15, 21, 45, 66

Electropneumatic and electromagnetic contactors of power circuits	subclauses "6" and "y" of clause 13, clauses 15, 21, 27, 45, 66
Driver's seat	subclause "6" of clause 13, clauses 15, 18, 21, 45, 54, 66
Finished axles of metro rolling stock	subclauses "6", "p" – "т" of clause 13, clauses 15, 22, 45, 47, 66
Rolling bearings for axleboxes of metro rolling stock	subclauses "6", "p" – "т" of clause 13, clauses 15, 45, 66
Power-circuit fuses	subclauses "6", "в", "н", "о" and "y" of clause 13, clauses 15, 21, 45, 56, 66
Static converters	subclauses "6", "н" and "о" of clause 13, clauses 15, 21, 59, 66
Springs of the suspension system of metro rolling stock	subclauses "6", "p" and "т" of clause 13, clauses 15, 21, 45, 66

Disconnectors, short-circuiters, isolators, switches and earthing switches of power circuits	subclauses "б", "н", "о" and "у" of clause 13, clauses 15, 21, 66
Bogie frame of metro rolling stock	subclauses "б", "р" – "т" of clause 13, clauses 15, 21, 45, 47, 66
Air reservoirs	subclause "б" of clause 13, clauses 15, 21, 45, 66
Starting resistors, dynamic-braking resistors and damping resistors	subclauses "б", "н" and "о" of clause 13, clauses 15, 21, 59, 66
Windscreen wipers for metro rolling stock	subclause "б" of clause 13, clauses 15, 21, 45, 66
Parking brake of metro rolling stock (actuating part)	subclause "б" of clause 13, clauses 15, 21, 45, 66
Coupling (automatic coupler) of metro rolling stock	subclauses "б", "ж", "з", "с" and "т" of clause 13, clauses 15, 21, 45, 66
Bogie assemblies of motor and trailer metro cars	subclauses "а" and "б" of clause 13, clauses 15, 18, 21, 45, 66

Driver's brake valves	subclause "6" of clause 13, clauses 15, 21, 45, 66
Traction motors	subclauses "6", "o" – "p" and "y" of clause 13, clauses 15, 21, 42, 45, 56, 66
Universal automatic train-stop switches	subclauses "6" and "e" of clause 13, clauses 15, 21, 27, 34, 45, 66
Train radio communication devices	subclauses "6" and "в" of clause 13, clauses 15, 21, 45, 66
Control, monitoring and safety devices, and software of metro rolling stock	subclauses "6", "в" and "л" of clause 13, clauses 15, 16, 21, 27 – 32, 45, 66
Brake cylinders	subclause "6" of clause 13, clauses 15, 21, 45, 66

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