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# 3.211 MOTOR VEHICLE TYRE OPERATING RULES IKON TYRES


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## 1. Purpose, Scope and General Provisions

1.1. The "Ikon Tyres Motor Vehicle Tyre Operating Rules" (hereinafter referred to as the "Rules") are the main document governing the maintenance and use of motor vehicle tyres manufactured by Ikon Tyres LLC (hereinafter, "tyres" in this document refers exclusively to tyres manufactured by Ikon Tyres LLC).

1.2. The Rules are intended for a wide range of persons, both individuals and legal entities.

1.3. Compliance with these Rules is mandatory for all tyre owners.

1.4. The terms "Driver", "Tyre Owner", "Vehicle Owner", "Consumer", "Applicant", "Tyre Fitter" and other roles involved in handling tyres are treated in this document as equivalent parties in terms of their obligations to comply with these Rules, even though in practice they may be different persons, connected by various types of relationships or not directly connected at all. When a tyre owner transfers (entrusts) their tyres or the rights to them to another person (a vehicle owner, driver, representative, tyre fitter or other person), the tyre owner also transfers all obligations to comply with these Rules and is responsible for duly informing such persons of, and providing them with, these Rules.

1.5. The term "Vehicle" in this document and all related statements apply to any type of vehicle, including trailers or other types of chassis, devices or equipment on which tyres have been, are or will be used.

1.6. Ikon Tyres LLC reserves the right to amend this document without the agreement of third parties. The current version of this document is available at www.ikontyres.ru

## 2. Definitions

The following terms and definitions are used in this document:

2.1. Tyre – a resilient casing fitted on a wheel rim, designed to support the weight of a vehicle and transmit varying loads; provide comfort (cushioning against road irregularities); and provide traction and directional control for a vehicle or other means of transport.

A tyre usually consists of the following components (individual parts and

elements):

2.2. Carcass – the main load-bearing component of a tyre, consisting of one or more layers of rubber-coated cord, usually anchored around bead rings. Cord is a fabric made of thick warp threads and thin, sparsely spaced weft threads, produced from natural or synthetic fibres or thin steel wires (steel cord);

2.3. Belt – an internal tyre component located between the carcass and the tread and consisting of several layers of rubber-coated steel or other cord. The belt is designed to absorb impact loads on the tyre arising when the vehicle travels on the road;

2.4. Nylon cap ply – a strip of rubber-coated textile cord wound around the tyre belt to hold the structure together;

2.5. Tread – the outer rubber part of a tyre, usually with a patterned surface, which provides road grip and protects the carcass against damage;

2.6. Sidewall – a layer of covering rubber on the side of the tyre that protects the carcass against external damage;

2.7. Tyre bead – the rigid part of a pneumatic tyre that secures it to the wheel rim. The bead consists of a bead core, which is wrapped in the carcass and covered by the sidewall.

2.8. Wheel – a rotating vehicle component that bears the vehicle's weight and transmits torque. The wheel is located between the tyre and the hub. A wheel usually consists of two main parts: the rim and the wheel disc.

2.9. Rim – the part of a wheel on which the tyre is mounted and supported.

2.10. Wheel disc – the part of a wheel connecting the vehicle hub to the rim. The rim and wheel disc may be separate components or a single integral structure, either monolithic or welded.

2.11. Single wheel – a wheel mounted on a hub and carrying one tyre.

2.12. Dual wheel assembly – an assembly consisting of two single wheels mounted on the same vehicle hub.

## 3. Tyre markings

3.1. Tyre markings shall comply with the requirements of the regulatory document under which the tyre is manufactured or with the terms of the tyre supply agreement.

Each tyre is generally marked with the following information:

3.2. tyre designation – a code indicating its main dimensions and carcass construction. Tyre designations may be expressed in millimetres, inches or a combination of millimetres and inches; radial tyres also bear the letter R. Bias-ply tyres do not bear a letter indicating their construction. For low-profile and ultra-low-profile tyres, the designation includes the aspect ratio (the nominal ratio of the tyre section height to its width), expressed as a percentage;

3.3. load capacity indices for single and dual wheels – designations of carcass strength determining the maximum permissible tyre load. Truck tyres may also carry the marking "PR" or "Ply rating" (a designation of carcass strength), while passenger car tyres carry a load index;

3.4. speed rating – a code indicating the maximum permissible speed;

3.5. inflation pressure "PSI" (pounds per square inch) or "kPa" (kilopascals) – the test pressure marking used only for tyres intended for light commercial vehicles and minibuses with the letter "C" in their designation, and for truck tyres;

3.6. the "E" type-approval mark, with the number of the country that issued approval under Regulation No. 30, 54, 117, 164 or other regulations of the United Nations Economic Commission for Europe (UNECE);

3.7. country of manufacture;

3.8. trademark and/or name of the tyre manufacturer;

3.9. brand name (tyre model);

3.10. standard designation (without the year of approval), if applicable;

3.11. tyre serial number, if applicable;

3.12. date of manufacture, consisting of four digits, the first two indicating the calendar week and the last two indicating the year of manufacture;

3.13. a technical control stamp;

3.14. the marking "Radial" – for radial tyres;

3.15. direction-of-rotation marking (an arrow or the word "ROTATION") – for tyres with a directional tread pattern;

3.16. the marking "Tubeless" – for tubeless tyres;

3.17. the marking "Steel" – for tyres with a steel-cord belt;

3.18. the marking "Reinforced", "Extra Load" or "XL" – for reinforced tyres;

3.19. the marking "M+S" (Mud and Snow), "M(.)S" or "M&S" – for tyres with a winter tread pattern;

3.20. the "3PMSF" (Three-Peak Mountain Snowflake) symbol – for winter tyres meeting stringent snow traction standards (a snowflake against three mountain peaks);

3.21. the "Snow Grip Marking for Studded Tyres" marking (a mark confirming snow grip performance for studded tyres)

3.22. the letters "TWI" (Tread Wear Indicator) or another symbol indicating the location of the tread wear indicators in the tread shoulder area;

3.23. national conformity mark, if applicable;

3.24. the letter "C" – after the designation of the main dimensions and carcass construction, only for light commercial vehicle and minibus tyres.

Explanation of the markings on the sidewall of a passenger car tyre: 205/55 R16 IKON TYRES Autograph Ice 10 Steel Radial 94 T Tubeless Made in Russia, where:

3.25. 205 – nominal tyre section width in millimetres;

3.26. 55 – aspect ratio (the nominal ratio of section height to width, expressed as a percentage);

3.27. R – letter indicating a radial tyre;

3.28. 16 – nominal tyre rim diameter, corresponding to the nominal rim diameter in inches;

3.29. IKON TYRES – brand, trademark;

3.30. Autograph Ice 10 – tyre model, brand name, commercial designation;

3.31. Steel – steel cord in the belt;

3.32. Radial – radial tyre;

3.33. 94 – load index;

3.34. T – speed rating;

3.35. Tubeless – tubeless tyre;

3.36. 1023 – date of manufacture, where: 10 – number of the week from the beginning of the year in which the tyre was manufactured; 23 – the last two digits of the year of manufacture, 2023;

3.37. Made in Russia – country of manufacture (Russia).

3.38. Tyres may also bear additional markings and designations, either embossed in the rubber compound or applied as stickers (labels) or in other forms.

## 4. Tyre acceptance

4.1. Tyres shall be accepted in accordance with the applicable provisions and instructions for the supply of industrial and technical products, national standards and technical specifications, and the terms of the tyre supply agreement.

4.2. The receiving party shall provide the conditions necessary for accepting the tyres and shall duly inspect the tyres received for defects in quality and discrepancies in quantity.

## 5. Transport and storage of tyres

5.1. During storage and transport, tyres must not be subjected to uncontrolled exposure to the following factors: oxygen, ozone, light, heat, petroleum products, organic solvents, mineral oils, lubricants, fuels, acids, alkalis and other aggressive substances; prolonged contact with copper or corrosive substances; prolonged loading on one side, bending, compression, stacking products on top of one another, supporting products on sharp surface protrusions, or other physical effects that alter the shape of the tyres.

5.2. When transported on open vehicles or open rolling stock, tyres must be protected from sunlight and moisture (with tarpaulin, polyethylene film or another covering material providing such protection). Any packaging method used must not cause condensation to form.

5.3. Tyres shall be moved in a way that prevents deformation of their beads. When transporting bundles of tyres, i.e. tyres arranged in stacks, the tyres must be in a vertical position.

5.4. Tyres transported at temperatures below −30°C must be protected against impacts and deformation, and the requirements specified in Section 6.4 must also be observed.

## 6. Loading and unloading tyres at a warehouse

6.1. Tyres must not be dropped from a height of more than 1.5 metres during loading and unloading. Dropping tyres from this height may damage or bend their bead rings. Tyres with such damage must not be mounted or used for their intended purpose.

6.2. Loading and unloading must be organised to prevent tyres from coming into contact with dirty or rough surfaces or equipment capable of leaving marks on them.

6.3. Lifting, turning or moving tyres by hooking a hook, cable or chain onto the tyre bead is prohibited.

6.4. Particular care must be taken when transporting, loading and unloading tyres at very low ambient temperatures (below −30°C); operations causing severe tyre deformation (dropping, compression, stacking in high piles, striking sharp objects, etc.) must be avoided, as they may damage the tyres.

## 7. Tyre storage

7.1. Tyres should be stored in an enclosed, dry, cool and well-ventilated space. Storage premises must be free of extraneous items, kept dark, meet fire safety requirements and allow the use of lifting equipment.

7.2. Tyres not mounted on rims should ideally be stored upright on racks, pallets or a level floor. Tyres may be placed in metal cages either upright or in a herringbone arrangement. Regardless of how the tyres are arranged in a cage, the stacking height must not exceed the top of the cage, to prevent deformation when cages are stacked on top of one another.

7.3. Tyres mounted on rims may be stored horizontally in stacks on pallets, with a maximum stack height of 1.6 metres.

7.4. Unmounted tyres may be stored in vertical stacks no more than 1.6 m high. Tyres must not protrude more than 10 cm beyond the edges of a pallet. When tyres are stored in stacks, stacks of four or more tyres must be secured with polyethylene film.

7.5. Load-bearing surfaces used for tyre storage (the bottoms of cages, pallets or racks, depending on the storage method) must be clean, level and free of sharp edges, broken or chipped parts, protruding nails, loose parts or other defects that could cause

mechanical damage to tyres during storage, as well as free of dirt, rust and other foreign substances. Contact with the storage surface must not leave marks or foreign matter on a tyre.

7.6. Racking systems, cages, pallets and other structures used for storing and transporting tyres must be stable, securely fixed and in good working order. Tyres must be arranged so that they remain stable during storage and cannot accidentally fall or slide out.

7.7. Forklift trucks shall be used in accordance with the applicable national legislation governing this activity.

7.8. Used tyres suitable for further use must be thoroughly cleaned before storage. Before storage, tyres must be cleaned of any surface contamination (if present), dried, cleared of foreign objects lodged in the tread, inspected for damage and removed from transport bundles, if any.

7.9. Outdoor tyre storage is prohibited. Finished products must not be directly exposed to precipitation, sunlight, dust, moisture or contamination. Any packaging method used must not cause condensation to form.

7.10. The temperature in the tyre storage area must be kept at or below +35°C, preferably between 5 and 25°C. Ideally, tyres should be stored in a dark place at a temperature of around +15°C. During prolonged storage at temperatures outside the specified range, the properties of rubber may change, affecting the performance of the tyres.

7.11. High humidity and condensation should be avoided during tyre storage. Relative humidity must not exceed 80%.

7.12. Tyre storage areas must be equipped with temperature and humidity recording instruments. Climatic conditions shall be monitored and recorded regularly. Temperature and humidity must be monitored by a calibrated recording system covering the entire warehouse, with automatic data collection at least once a week. If automatic recording is unavailable, temperatures shall be recorded on a checklist once a week for each storage area.

7.13. Tyres in storage must be kept at least 1 m away from heating equipment. Heating devices in tyre storage areas must be shielded. Hot air must not be directed at tyres when heat guns are used to heat the premises.

7.14. Lighting. Tyres must be protected from direct sunlight and intense artificial light, particularly light with a high ultraviolet component.

7.15. Oxygen and ozone. Ozone has a strongly destructive effect on tyres. The warehouse must not contain ozone-generating equipment, such as fluorescent or mercury-vapour lamps, high-voltage electrical equipment, electric motors or any other electrical equipment that may produce sparks or electrical discharges. Welding in tyre storage areas must be strictly restricted and performed only in exceptional circumstances. Tyres must be protected from welding spatter. Tyres must not be stored near sources of strong electromagnetic fields or infrared radiation. Warehouses must not be ventilated during thunderstorms or for 2–3 hours afterwards because of the sharp increase in airborne ozone levels.

7.16. Deformation. Where possible, tyres should be stored freely, i.e. without external pressure from other objects. External deformation caused by prolonged storage may disappear once the tyres are inflated.

7.17. Solvents, fuels, lubricants, chemicals, acidic substances, disinfectants and other aggressive substances must not be stored together with tyres in the warehouse. Tyres must be protected against any exposure to solvents, oils or greases, even for short periods.

7.18. When passenger car or light commercial vehicle tyres are stored for extended periods in herringbone arrangements in cages, or in stacks in cages or on pallets, tyres that have been in storage for more than 12 months must undergo sample-based visual inspections at least once every six months, involving specialists with the necessary expertise to assess the tyres for deformation, damage and other defects. If necessary, a decision to rearrange the tyres shall be made based on the specialists' findings.

7.19. Tyres may be stored suspended only when mounted on wheels. Special hooks, brackets or other devices inserted through the wheel's central hole or mounting points are recommended.

7.20. Tyres must remain clean, with their labels intact, throughout all warehouse operations.

## 8. Fitting vehicles with tyres

8.1. Tyres shall be selected and fitted to each specific make and model of production vehicle or trailer, taking into account size, model, load capacity (load index, ply rating), speed rating and tread pattern, in accordance with the vehicle owner's manual (operating instructions).

8.2. The width of the wheel rim on which a tyre is mounted must comply with the standards of the European Tyre and Rim Technical Organisation (ETRTO) and the requirements of the vehicle or other chassis manufacturer.

8.3. Tyres differing in size, construction (radial, bias-ply, tube-type, tubeless), speed rating, load index or tread pattern, winter and non-winter tyres, new and retreaded tyres, new tyres and tyres with regrooved treads, or tyres with substantially different remaining tread depths must not be fitted on the same vehicle axle.

8.4. To ensure proper performance of tyres in dual-wheel assemblies, tyres should be selected to minimise differences in tread wear and tyre diameter.

8.5. When fitting vehicles with tyres having off-road or directional tread patterns, the wheel must rotate in the direction indicated by the arrow on the tyre sidewall. When fitting tyres with an asymmetric, non-directional tread pattern, the outer side must face away from the vehicle; the direction of rotation does not matter.

8.6. For better traction on snowy and icy roads, the use of winter tyres fitted with anti-skid studs is recommended.

8.7. When studded tyres are used, they shall be fitted to all vehicle wheels (including the spare). If studded tyres must be rotated for technical reasons, the direction of wheel rotation must remain unchanged.

8.8. Vehicles operated on soft ground and off-road must be fitted with tyres having an off-road tread pattern. Prolonged use of such tyres on paved roads is not recommended.

8.9. Self-supporting tyres (Run Flat, Flat Run, etc.) may only be fitted to vehicles for which the manufacturer permits their use. Vehicles fitted with these tyres must be equipped with an automatic tyre pressure loss monitoring system (Tyre Pressure Monitoring System (TPMS) or other systems and sensors).

8.10. Tyres fitted to vehicles owned by legal entities should be assigned to those vehicles, and this assignment recorded on tyre performance record cards in accordance with Appendix 5, or on cards in another format meeting the organisations' internal requirements. Tyre owners shall independently determine tyre service mileage limits based on the average mileage of tyres taken out of service.

## 9. Tyre mounting and demounting rules

9.1. Tyre mounting and demounting shall be performed in a tyre fitting workshop using specialised equipment, devices and tools, and in accordance with the instructions set out in Appendix No. 7 to these Rules.

9.2. Only serviceable, clean and dry tyres, inner tubes, rim tapes, rims and rim components of the appropriate sizes and types may be mounted.

9.3. Tyres stored at sub-zero temperatures must be kept under normal room-temperature conditions for 3–4 hours before mounting.

9.4. Before mounting, tyres must be inspected both externally and internally using a tyre spreader or other devices. Tyres with manufacturing defects or damage sustained in service must not be mounted. Foreign objects (stones, nails, etc.) must be removed from the tyre.

9.5. Before mounting a tyre on a rim, the tyre bead and rim bead seat must be lubricated with tyre mounting paste (lubricant). Other lubricants incompatible with the tyre rubber compound, including engine oil, grease and other aggressive substances, must not be used.

9.6. Rims and their components must not be used for mounting if they show defects such as distortion, deformation, cracks, sharp edges, burrs or rust at points of contact with the tyre. Rim surfaces that contact the tyre must be cleaned of dirt, foreign matter and rust, and coated with varnish or metal paint.

9.7. Tyres may be mounted on and removed from rims only using serviceable tyre fitting equipment or tools of appropriate quality. Tyre fitting equipment or tools that contact the tyre bead area must have no sharp edges, burrs or chips that could damage the rubber compound surrounding the bead ring.

9.8. The valve core used for inflating the wheel must be airtight. Neither the valve core seat nor the valve core itself may be deformed or otherwise damaged.

9.9. Wheel assemblies must be balanced after each tyre mounting operation; balancing should also be checked at every second vehicle service. Balancing may be carried out with the wheels removed from the vehicle or directly on the vehicle, using stationary or mobile balancing equipment. Before balancing, tyres must be washed and cleared of dirt and foreign objects. To minimise the number of balancing weights, it is recommended to optimise the tyre's position on the wheel.

9.10. To protect valve cores against contamination and damage, all valves must be fitted with metal, plastic or rubber caps.

9.11. When fitting dual wheels on a vehicle axle, the openings in the discs of both wheels must be aligned to provide access to the inner wheel's tyre valve for checking or adjusting inflation pressure without removing the outer wheel.

9.12. The following safety rules must be observed during mounting and demounting operations:

9.12.1. tyre fitters and drivers (if involved) must be instructed in mounting and demounting procedures;

9.12.2. a tyre may only be assembled with a rim of the size specified for the vehicle make;

9.12.3. all air must be released from a tyre before it is removed from the rim;

9.12.4. before inflating tyres on multi-piece rims with bolted connections, make sure all nuts are tightened uniformly in accordance with the vehicle maintenance instructions; rims missing even one nut must not be used;

9.12.5. tyres mounted on rims shall be inflated in the tyre fitting workshop in several stages, checking the condition of the wheel assembly after each stage. ATTENTION! Tyres must be inflated to pressures above 3.5 bar only inside a special metal safety cage capable of protecting service personnel, bystanders and property/equipment if the wheel assembly comes apart unexpectedly;

9.12.6. when inflating a tyre, special connectors must be used to connect the inner tube (tyre) valve to the air supply hose and allow air to pass through the valve core;

9.12.7. if the tyre beads do not seat tightly against the rim bead seats after inflation, the tyre must be deflated and removed, the cause of poor bead seating eliminated, and the tyre remounted, reinflated and checked for proper bead seating;

9.12.8. to minimise axial and radial wheel runout, tighten the rim and wheel bolted connections in the following order: first tighten the upper nut, then the one diametrically opposite it, and then tighten the remaining nuts in opposing pairs (crosswise), gradually tightening all nuts in the same sequence in accordance with the vehicle maintenance instructions;

9.12.9. before lifting a wheel to be removed using a jack, apply the parking brake, engage first gear (for manual transmissions), place chocks under the other wheels to prevent the vehicle from rolling while being jacked up, and loosen the wheel nuts; then raise the wheel with the jack, remove the nuts and take off the wheel.

9.13. The following actions are prohibited during tyre fitting:

9.13.1. removing tyres from rims while they are pressurised;

9.13.2. adjusting the position of bead rings or locking rings while the tyre is pressurised;

9.13.3. removing one of a vehicle's dual wheels without a jack by driving the other dual wheel onto a raised object;

9.13.4. using sledgehammers or similar objects during mounting and demounting that may deform wheel or tyre components;

9.13.5. replacing valve cores with plugs or other types of stoppers.

9.14. Fitting a tyre to a vehicle and putting it into service constitutes the tyre owner's acceptance that the tyre fitting work has been performed correctly and in full.

## 10. Tyre care by vehicle owners

10.1. When taking delivery of a new vehicle or replacing all or some of its tyres, the driver shall:

10.1.1. check that the vehicle is fitted with tyres correctly in accordance with Section 8 of the Rules;

10.1.2. when replacing only some tyres, select and fit them to the appropriate axles based on their technical condition;

10.1.3. check the entries on the tyre performance record cards (Appendix 1) and sign the cards (for legal entities);

10.1.4. check tyre pressures and, if necessary, adjust them to the recommended levels, and inflate the spare tyre to the maximum pressure permitted for that tyre model;

10.1.5. check that valve caps are present, valves and wheel fasteners are in good condition, the remaining tread depth meets the minimum requirements and the tyres have no visible damage;

10.1.6. avoid sudden starts, emergency braking and aggressive manoeuvres for the first three days after tyre fitting (this time is needed for the mounting paste to dry and to prevent the rim slipping relative to the tyre).

10.2. When fitting a spare tyre to a road wheel, check that it matches the tyres already fitted on that axle, record the odometer reading to account for the spare tyre's mileage on the tyre performance record card (for legal entities) and, if necessary, adjust the spare tyre pressure to the required level.

10.3. Before setting off, the driver shall:

10.3.1. visually inspect the tyres;

10.3.2. check that the rims and wheels are securely fastened;

10.3.3. if a tyre is leaking air, identify and eliminate the cause of the leak.

10.3.4. check the inflation pressure of cold tyres at least once a week.

10.4. While using the vehicle, the driver shall:

10.4.1. pull away smoothly to avoid wheelspin;

10.4.2. if the vehicle pulls to one side, stop immediately, identify the cause and correct it;

10.4.3. avoid driving on tyres with incorrect inflation pressure (too high, too low or zero) relative to the nominal value stated in the vehicle owner's manual or other regulatory documentation;

10.4.4. avoid parking the vehicle with underinflated or flat tyres;

10.4.5. pay attention to road conditions and slow down on difficult sections (deep ruts, level crossings, road obstacles, etc.);

10.4.6. avoid abrupt braking when approaching stopping points, traffic lights, barriers and other obstacles; accelerate and decelerate smoothly when manoeuvring;

10.4.7. drive over obstacles (rails, road-surface joints, artificial road obstacles, etc.) slowly and while coasting to prevent tyre damage and the loss of anti-skid studs;

10.4.8. avoid striking wheels sharply against sharp metal or other protruding objects and do not drive too close to kerbs or other protrusions, to avoid damaging the tyres;

10.4.9. when parked, inspect the tyres and remove foreign objects (stones, glass, etc.) lodged in the tread, sidewalls or between dual tyres;

10.4.10. if a tyre is damaged while driving, stop immediately in a safe location;

10.4.11. if a self-supporting tyre (RunFlat, FlatRun) is damaged and loses inflation pressure, the vehicle may continue to a repair or replacement location at a speed not exceeding 80 km/h and for a distance not exceeding 80 km (if the vehicle is fully loaded, both the speed and the permissible driving distance must be reduced further). The vehicle manufacturer's requirements must also be taken into account when selecting driving conditions;

10.4.12. do not load the vehicle beyond its rated carrying capacity; ensure that loads are evenly distributed and securely fastened (Appendix 2); position heavy, compact loads in the vehicle body so that the load is evenly distributed among all tyres;

10.4.13. monitor tyre condition and arrange timely seasonal tyre changes according to current road conditions. Winter tyres must be fitted in autumn as temperatures fall towards freezing, before frosts and road ice become likely. Summer tyres must be fitted in spring once temperatures remain consistently above freezing and road ice is no longer likely. Regardless of the season for which the fitted tyres are intended, the driver must exercise caution during transitional periods and adapt their driving style to road conditions;

10.4.14. observe the haul distance, maximum speed and any other operating restrictions established by the tyre or vehicle manufacturer.

10.5. At the end of each day of vehicle use, the driver shall:

10.5.1. inspect the tyres and rims and check for valve caps; remove foreign objects from the tread, sidewalls and between dual tyres;

10.5.2. remove tyres that require repair or disposal;

10.5.3. clean (wash) tyres that have come into contact with aggressive substances;

10.5.4. if uneven tread wear is detected, stop using the tyres, identify its cause and eliminate it. For individuals, the driver independently determines whether unevenly worn tyres are suitable for further use; for legal entities, this is determined by a committee or another person or group of persons designated by the organisation.

10.6. To maximise tyre service life, the driver shall comply with the tyre use and maintenance rules:

10.6.1. storage, tyre selection and fitting, and mounting and demounting shall be carried out in accordance with Sections 6, 7, 8 and 9 of these Rules and the vehicle manufacturers' recommendations;

10.6.2. regular vehicle parking areas must be cleared of dirt, petroleum products, oils, chemicals and other substances that degrade rubber. Tyres must not be allowed to freeze to the road surface due to water accumulating around the vehicle. Regular vehicle parking areas must be free of sharp objects and damage to the road surface. Gaps between road-surface elements (if any) must be kept as small as possible, both in width and in height differences;

10.6.3. when using indoor parking facilities, vehicles must be kept at least one metre away from heating systems;

10.6.4. do not leave a fully loaded vehicle parked in one place for more than two days, or an unloaded vehicle for more than 10 days. If a vehicle needs to be parked for longer, the tyres should be unloaded using supports or the vehicle should be moved;

10.6.5. vehicles placed in long-term storage (for more than six months) should be set on supports to unload the tyres completely; tyres should be protected from direct sunlight and precipitation;

10.6.6. vehicles must not be parked on tyres with inflation pressures below the prescribed levels;

10.6.7. tyre inflation pressures must comply with the values set out in the vehicle owner's manual (operating instructions) or another duly approved regulatory document, since incorrect pressure reduces tyre service life (Appendix No. 3, Effect of Incorrect Inflation Pressure on Tyre Service Life);

10.6.8. a transport company must display a table of the prescribed tyre inflation pressures for all vehicles it operates in the tyre fitting area, in the maintenance areas and at the entry/exit checkpoint;

10.6.9. tyres must not be used on a vehicle with any defects, including running gear defects (including but not limited to suspension or steering wear, faults in the braking system or other running gear components), that directly and/or indirectly affect the condition of the tyres.

10.7. Tyres must be serviced whenever the vehicle undergoes maintenance. During vehicle maintenance, the following tyre and rim work shall also be performed:

10.7.1. inspect tyres to determine their suitability for further use; remove foreign objects lodged in the tread, sidewalls or between dual wheels;

10.7.2. identify tyres with mechanical damage;

10.7.3. check the condition of valves and valve cores and ensure that caps are present;

10.7.4. assess tyre suitability based on tread wear and tyre allocation by axle; inspect rims to assess their suitability for further use; check the fastening of wheels and their components;

10.7.5. measure the inflation pressure of all vehicle tyres, including the spare; adjust pressures to the prescribed levels if necessary. Inflation pressures must be measured when the tyres are completely cold, using a pressure gauge whose readings have been checked against a reference gauge.

10.7.6. if any tyre or rim defects are found, corrective action must be taken.

10.7.7. check wheel toe and camber alignment and wheel balance.

10.8. It is recommended to rotate wheels within an axle and between vehicle axles when a technical need is identified. Possible tyre rotation patterns are shown in Figures 1, 2 and 3 of Appendix 1.

10.9. Reasons for tyre rotation may include:

10.9.1. the need to match tyres by axle and dual-wheel assembly;

10.9.2. the need to fit more reliable tyres (without mechanical damage, etc.) on the front axle;

10.9.3. identified uneven or excessive tread wear;

10.9.4. mileage exceeding 15,000 km since the last rotation or initial installation.

10.10. If excessive or uneven tread wear is detected, tyre use must be stopped, the reasons for the uneven wear identified and corrective action taken, regardless of the vehicle maintenance schedule. At the same time, the driver shall determine whether the tyres can continue to be used.

10.11. To prevent premature tyre failure and ensure safety, transport companies must arrange monitoring of the condition of tyres and wheels and their inflation pressures (maintain a pressure monitoring log).

10.12. A vehicle must not be operated or dispatched for service (in the case of transport companies) if any of the following is detected:

10.12.1. tyres fitted with dimensions, load capacities or speed ratings that do not match the vehicle model;

10.12.2. radial and bias-ply tyres, or tyres with different tread patterns, fitted on the same axle or within a dual-wheel assembly;

10.12.3. inflation pressure outside the prescribed limits;

10.12.4. valve cores replaced with plugs, stoppers or other devices;

10.12.5. tread depth below the minimum permissible limit;

10.12.6. local tyre damage (punctures, penetrating or non-penetrating cuts, etc.) exposing the cord; separation of the carcass, belt or bead (bulges); or local separation of the tread, sidewall or inner liner;

10.12.7. missing tyre valve caps;

10.12.8. foreign objects (stones, glass, etc.) lodged in sidewalls, treads or between dual wheels;

10.12.9. any missing or loose bolt or nut securing a wheel disc or rim;

10.12.10. visible deformation or changes in the dimensions of the holes for fasteners in wheel discs;

10.12.11. deformed rims;

10.12.12. tyres that do not match the season or prevailing road conditions;

10.12.13. air leakage from a tyre, whether through the valve, as a result of tyre damage or for other reasons.

10.13. The tread wear limit (for previously manufactured tyres without wear indicators) is reached when the remaining height of the tread pattern is at the minimum permitted

value over a rectangular area whose width equals half the tread running surface width and whose length equals one-sixth of the tyre circumference along the centre of the tread, in the case of even wear, or over several areas with different degrees of wear whose total area is equivalent, in the case of uneven wear (Fig. 2 of Appendix 2).

10.14. The minimum permissible remaining tread depth at which a tyre must be removed from service is:

10.14.1. 1.6 mm for non-winter passenger car tyres; 4.0 mm for winter passenger car tyres;

10.14.2. for trailer and semi-trailer tyres, the same limit as for the tyres on the vehicles towing them.

10.15. Remaining tread depth shall be measured at the points of greatest wear, outside the areas of tie bars, projections or steps at the base of the tread pattern (Figs. 1, 2 and 3 of Appendix 2):

10.15.1. for tyres with a continuous rib in the centre of the tread running surface, tread depth is measured along the edges of that rib.

10.15.2. for off-road tyres, tread depth is measured between tread lugs at the centre of the running surface or at the points closest to the centre, but not on the steps at the bases of the lugs or on tie bars.

10.15.3. for tyres with wear indicators, the tread wear limit is determined when the indicators become visible (raised sections at the bottoms of the tread grooves, whose height equals the minimum permissible tread depth).

10.15.4. for tyres with wear indicators, the tread wear limit is reached when one indicator becomes visible in the case of even tread wear, or when two indicators become visible in each of two cross-sections in the case of uneven wear.

10.16. After fitting studded tyres, they must be run in for 800–1,000 km, during which the driver must avoid sudden starts, emergency braking and aggressive manoeuvres.

10.17. Tyres intended for different seasons must not be fitted on the same vehicle; likewise, studded and non-studded tyres intended for the same season must not be used together.

10.18. The tread compound of summer tyres is designed to provide optimal grip at temperatures above 0°C and is highly temperature-sensitive. Using summer tyres at

very low temperatures may cause damage because the rubber compound loses elasticity; in other words, the tread compound may become brittle at low temperatures (on reaching the so-called glass transition temperature). If the tyre is subjected to loads and deformation under these conditions, its rubber compound may crack. Therefore, using summer tyres at very low ambient temperatures is not recommended.

## 11. List of defects for which tyre use is prohibited

11.1. Tyre use must be discontinued and the tyres removed from service for the following reasons:

11.2. remaining tread depth below the minimum permitted by law;

11.2.1. premature uneven tread wear;

11.2.2. mechanical damage (through punctures, cuts or tears reaching the cord, or damage exposing the internal structural cords of the tyre);

11.2.3. detachment or separation of the inner liner on the inner surface of the carcass or at the beads;

11.2.4. damage or breakage of the carcass for any reason, including driving on underinflated tyres;

11.2.5. excessive wear in the centre of the tread due to driving on overinflated tyres; carcass rupture caused by overloading the vehicle or wheels due to incorrect load placement in the vehicle body, or by impacts with road obstacles while driving at high speed;

11.2.6. loss of tyre air-tightness for any reason;

11.2.7. rubber build-up at the bead toe and heel, with the carcass becoming visible or protruding;

11.2.8. separation in the carcass, belt or bead; separation of the tread, sidewall or inner liner;

11.2.9. foreign inclusions pressed into the tyre;

11.2.10. tyre structural elements showing through the rubber beneath the tread grooves;

11.2.11. cracks or deep scratches in the covering rubber;

11.2.12. cord threads protruding or separating;

11.2.13. folds at the base and toe of the bead caused by the bead tape being pressed in; exposed edges of the bead tape; detachment or separation of the inner liner rubber on the inner surface of the carcass or at the beads;

11.2.14. a ridge on the tread with fabric being forced out;

11.2.15. hard inclusions pressed into the inner carcass surface, damaging the first ply;

11.2.16. bulges on the tyre tread or sidewall.

11.3. The tyre owner shall determine whether tyres need to be disposed of, can be repaired or can continue to be used. The tyre owner bears sole responsibility for this decision and assumes all associated risks.

## 12. Complaints (claims)

12.1. Relations arising between purchasers, consumers and product manufacturers (service providers and sellers) are governed by the terms of contracts and applicable national legislation.

12.2. In accordance with applicable law, complaints concerning tyre quality are accepted for review during the warranty period, if established, and during the service life if the consumer (owner) proves that the tyre defects arose before the tyres were handed over to the consumer (owner), or from causes that existed before that time.

12.3. Procedure for submitting complaints:

12.3.1. A complaint (claim or complaint report) may be submitted in any format; however, for an objective and comprehensive review, the complaint (or other document) must contain the information listed in Appendix No. 6.

12.3.2. Together with the complaint, the applicant shall provide the tyres to which the complaint relates when requested by the complaint recipient. Failure, refusal or avoidance of providing the tyres on request makes an objective quality inspection and review of the complaint impossible. In such cases, the manufacturer/complaint recipient's obligations to review the complaint and perform a quality inspection are suspended until the applicant provides the tyres.

12.3.3. The applicant must also provide proof of purchase with the complaint (a cash-register receipt, sales receipt, universal transfer document, or other document or information confirming ownership).

12.4. The complaint recipient shall:

12.4.1. accept the complaint and tyres (if provided) for review. Upon receipt of the tyres, issue the applicant an acknowledgement of receipt;

12.4.2. review the tyre complaint within 10 (ten) working days, unless otherwise agreed in the contract or required by law, and provide a response upon expiry of that period;

12.4.3. if the complaint is upheld, replace the tyres with new ones or satisfy the claims made in another manner permitted by law and/or agreed with the applicant, within the time limits established by national legislation, the contract or another agreement between the parties;

12.5. If necessary, a method of calculating physical tyre wear to determine residual value may be used to resolve disputes.

12.6. If there are signs, traces or evidence that tyres have been used in breach of these Rules, the Manufacturer and Tyre Suppliers are entitled to reject tyre quality claims (complaints).

## 13. Method for assessing physical tyre wear.

13.1. Physical tyre wear is assessed based on the following parameters:

13.1.1. date of manufacture (determined from the sidewall markings);

13.1.2. tread depth;

13.1.3. mechanical damage (signs of impacts, cuts, scratches and wear), including cord damage accompanied by changes in the tyre's geometrical dimensions.

13.2. In general, physical wear is determined as follows:

$$\text{Wear} = (TD_{new} - TD)/(TD_{new} - TD_{min}) \times 100\%,$$

where

TD – tread depth of the tyre being assessed

TDnew – tread depth of the tyre being assessed when new

TDmin – minimum permissible tread depth for use of

the tyre being assessed, according to the season for which it is intended

13.3. The wear value is increased in the following circumstances:

13.3.1. By 10% for tyres manufactured 1 to 3 years ago

13.3.2. By 25% for tyres manufactured 4 to 5 years ago

13.3.3. By 50% for tyres manufactured more than 5 years ago

13.3.4. By 25% for tyres with any external defects or loss of structural integrity associated with punctures, cuts, holes, tears, bulges, uneven wear, separation of tyre components, wear (damage) of the inner liner, signs of other mechanical damage and natural influences during use, or other circumstances. The presence, extent and quality of any repairs are irrelevant.

13.3.5. Tyre wear is calculated as the sum of the values under Sections 13.2 and 13.3. If the resulting value is 100% or higher, the tyre may be considered to have exhausted its service life completely, and the tyre manufacturer's liability ceases.

## 14. Manufacturer's liability

14.1. The manufacturer is responsible for ensuring that tyres comply with national and other standards and other regulatory documents applicable to tyres, provided that the conditions for use, transport and storage, including those specified in these Rules, are observed.

14.2. The manufacturer is responsible for the absence of manufacturing defects until tread wear reaches the wear indicator height, within the tyre service life.

14.3. The service life of tyres, i.e. the period during which the manufacturer undertakes to ensure that the product can be used for its intended purpose and accepts liability for significant manufacturing defects, subject to compliance with these Rules for use, storage and transport, is 5 (five) years from the date of tyre manufacture (starting on the first day of the week following the week of manufacture indicated on the tyre sidewall).

14.4. The consumer (owner) determines whether tyres may continue to be used after the end of their service life, at their own risk and based on the technical condition of the tyre.

14.5. The manufacturer is not responsible for the safe use of tyres, their suitability for further use for their intended purpose, or the quality of tyres that have been modified by repairing damage, fitting anti-skid studs independently, restudding or performing other operations that compromise tyre integrity.

14.6. Repairing any damage to the tyre sidewall, mini-sidewall or bead area is strictly prohibited and releases the manufacturer from liability for such products.

## 15. Tyre disposal

15.1. Companies, institutions, organisations and drivers using motor vehicle tyres for business and/or personal purposes shall take all necessary steps to ensure proper tyre disposal: send them for recycling to licensed facilities engaged in the centralised collection and/or disposal of motor vehicle tyres, and comply with any other requirements of local or national waste management legislation.

## 16. Appendix No. 1 Record card

**Motor vehicle tyre performance record card**

New, used (underline as applicable)

Tyre serial number or date of manufacture: _____
(if missing, indicate the number assigned by the company)

Tyre size and model: _____

Brand, trademark or manufacturer: _____

Vehicle registration number, make and model:

_____

Company name and address:

_____

| Date | | Tyre mileage, thousand km (to the nearest 0.1 km) | | Technical condition of tyre: defects, type and extent of damage, tread depth in mm (with date) | Reason for tyre removal: sent for repair, transferred to another vehicle or kept as spare, sent to warehouse, written off | Signature of the Driver |
|---|---|---|---|---|---|---|
| date of fitting to vehicle | date of removal from vehicle | during the month | since start of use | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

Person responsible for keeping tyre performance records:

_____

Tyre write-off conclusion: _____

Committee members:

_____
(position, signature, surname)

_____
(position, signature, surname)

_____, __ 202_

## 17. Appendix No. 2 Load placement on vehicles and effect of overloading on tyre mileage

### 17.1. Load placement on vehicles and effect of overloading on tyre mileage

Fig. 1. Load placement on vehicles.
A – correct placement of compact heavy loads; B – incorrect placement of compact heavy loads; C – correct placement of long loads;

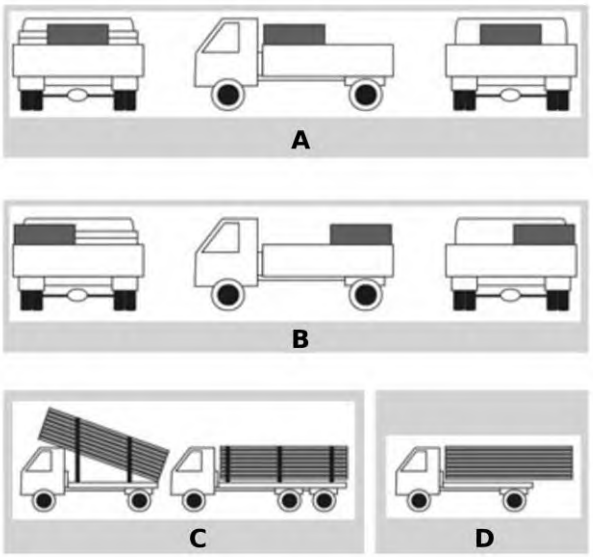
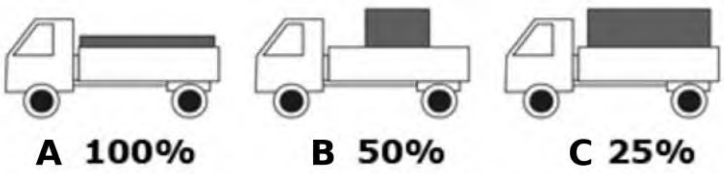
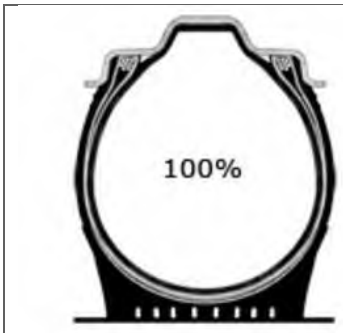



Fig. 16. Tyre service life achieved (%).
A – at normal load; B – at 40% overload; C – at 100% overload;



## 18. Appendix No. 3 Effect of Incorrect Inflation Pressure on Tyre Service Life

| | | |
|---|---|---|
|  |  |  |
| at normal inflation pressure | at pressure 20% above normal | at pressure 20% below normal |

## 19. Appendix No. 4 Possible Vehicle Tyre Rotation Patterns

### 19.1. Possible vehicle tyre rotation patterns

Fig. 1 Rotation of tyres with a directional tread pattern

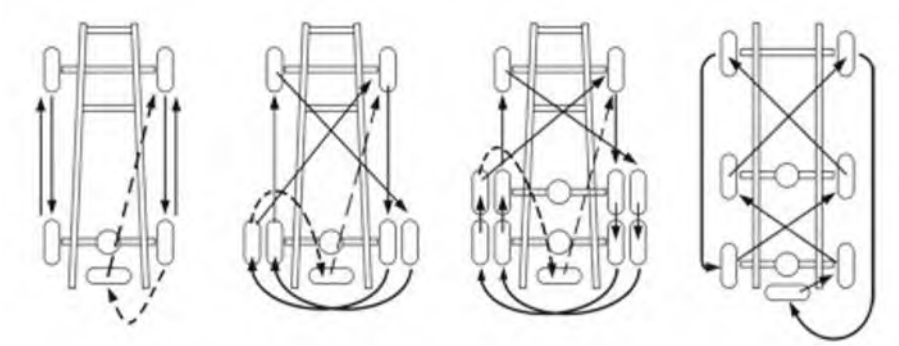


Fig. 2. Rotation of tyres with a non-directional tread pattern

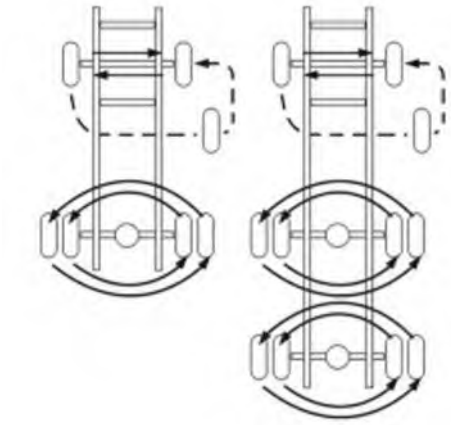
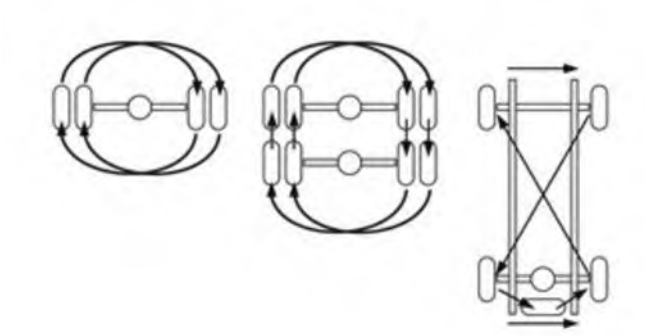


Fig. 3. Rotation of tyres on trailers and semi-trailers



## 20. Appendix No. 5 Determining the Area of Maximum Permissible Tread Wear and Where to Measure It

20.1. Determining the area of maximum permissible tread wear and where to measure it.

Fig. 1. Area of maximum permissible tread wear (hatched).
The width of area c must equal half the width of tread running surface b, i.e. c = 0.56b.
The length of area a must equal 1/6 of the circumference, i.e. a = 2πR/6, where R is the free radius of the tyre (one-sixth of the circumference equals the length of an arc whose chord equals the radius).

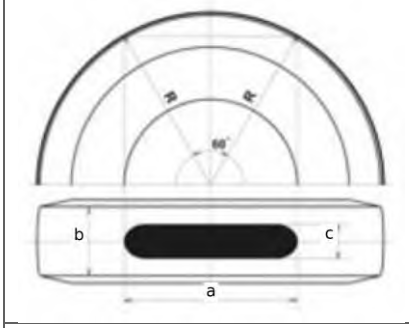



Fig. 2. Tread pattern with steps at the bases of the tread blocks in the central band of the running surface

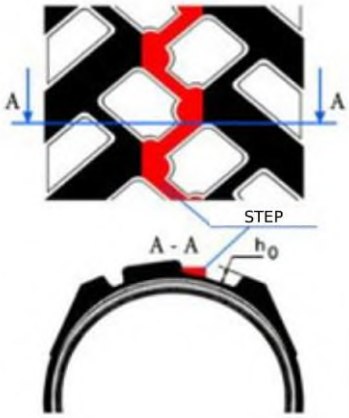
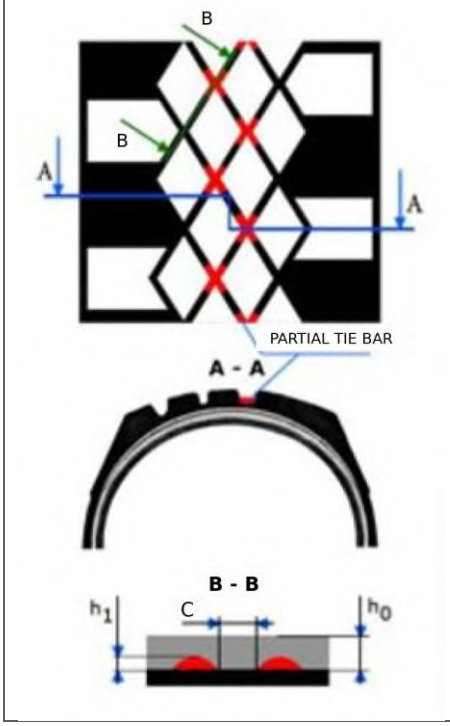


Fig. 3. All-purpose tread pattern with tie bars at groove intersections.



## 21. Appendix No. 6 Information Required for a Complaint

List of basic information to be provided when submitting a claim (complaint).

21.1. Applicant's full name and contact details (telephone number and email address)

21.2. Date and place of birth

21.3. Registration address

21.4. Details of the main identity document

21.5. Region and city of residence and tyre use

21.6. Trade name of the tyre model(s)

21.7. Tyre size, speed rating and load index

21.8. Reason for the complaint (alleged defect)

21.9. Claims made in connection with the complaint

21.10. Place and date of tyre purchase (number and date of the purchase document)

21.11. Date and place of initial tyre fitting

21.12. Make, model, year of manufacture and registration number of the vehicle on which the tyres were used

21.13. Tyre mileage at the time of the complaint

21.14. Photographs clearly showing the information specified in Section 21.7, an overall view of the tyre(s), the tyre tread(s) with wear indicator, the DOT (Department of Transportation) code showing the tyre manufacturing date, and the alleged defect.

This list is not exhaustive. For a comprehensive review of the complaint, the applicant may be asked to provide additional information and documents necessary to make a decision.

## 22. Appendix No. 7 Instructions for Tyre Fitting Operations

22.1. Tyre fitting shall be carried out in strict compliance with safety and occupational health and safety requirements under the laws of the region where the work is performed.

22.2. Vehicle wheels shall be mounted and demounted in a designated area at the facility, equipped with the necessary machinery, devices and tools, on a clean floor and with safety guards in place.

22.3. Before starting work, an appropriate working temperature must be maintained on the premises; it must not be below +15°C. If work is performed in winter, the tyre must be kept in a warm room for at least 3 (three) hours.

22.4. Before starting work, the tyre to be mounted must be inspected for the presence or absence of damage sustained during use.

22.4.1. The tyre must not show signs of improper use, such as deep cuts or punctures, bulges (including repaired bulges), signs of use at low or zero inflation pressure, or uneven tread wear;

22.4.2. The tyre must not show signs of improper storage or transport, such as crushing or creasing in the bead ring area.

22.4.3. The tyre must be clean and free of dirt, dust, stones trapped in the tread and other foreign objects.

22.5. Before starting work, the wheel on which the tyre is to be mounted must be prepared and inspected:

22.5.1. The wheel must comply with the vehicle manufacturer's requirements and the size of the tyre being examined. Particular attention must be paid to the rim width, which must be selected to match the tyre size, and to selecting the appropriate rim diameter.

22.5.2. The wheel rim (particularly the rim flange, bead seat, hump and surrounding area) must be free of corrosion, dirt and other foreign substances. Any contamination must be removed; if it cannot be removed, the wheel must be replaced;

22.5.3. The wheel rim must be inspected for damage: dents, cracks, signs of welding or repairs, or correction of its geometry must not be present. If any of these signs are found, the wheel must not be used for tyre mounting.

22.5.4. The condition of the central hub bore in the wheel disc must be checked; it must be even and free of damage, dirt, corrosion, paint or varnish build-up, and other substances. If the wheel is damaged, it must be replaced. Any contamination must be removed; if it cannot be removed, the wheel must be replaced.

22.5.5. Make sure that no balancing weights are fitted to the wheel. If balancing weights are fitted to the wheel surface, they must be removed.

22.5.6. The wheel mounting face must be cleaned of dirt, rust and foreign matter.

22.6. Before starting work, make sure all equipment used for tyre fitting is operational, in good working order, properly maintained and has undergone all calibration procedures required by its operating instructions.

22.7. Once the wheel and tyre have been inspected, tyre fitting may begin:

22.7.1. place the wheel on the tyre changer;

22.7.2. apply mounting paste to both tyre beads and to the rim flanges, hump and the part of the rim drop centre adjacent to the hump;

22.7.3. after applying the mounting paste, mount the tyre on the wheel in accordance with all tyre changer operating instructions;

22.8. After successfully mounting the tyre on the wheel, ensure that the tyre bead area is fully seated against the bead seat and the wheel rim flange. To do so, inflate the tyre in two stages:

22.8.1. without the valve core, to a gauge pressure of 2–3 bar, ensuring that the tyre seats fully on the rim. ATTENTION! Tyres must be inflated to pressures above 3.5 bar only inside a special metal safety cage capable of protecting service personnel if the wheel assembly comes apart unexpectedly.

22.8.2. then release the excess pressure, screw in the valve core and adjust tyre pressure to the target value specified in the vehicle fitting instructions.

22.9. After removing the wheel assembly from the tyre changer table, it is also recommended to tap it against the floor or use rolling equipment to improve the seating of the tyre bead on the wheel rim.

22.10. Next, the wheel assembly must be properly mounted on the wheel balancer. The installation process and sequence shall be as follows:

22.10.1. First, place the centring cone on the balancer shaft so that the cone is on the inner side of the wheel assembly's central hole.

22.10.2. Next, fit the wheel assembly onto the balancer shaft on which the centring cone has already been installed.

22.10.3. After fitting the wheel assembly and positioning its hub bore on the cone, place the clamping nut on the shaft and tighten everything in accordance with the wheel balancer operating instructions.

22.11. Check whether balancing weights are needed and install them in accordance with the wheel balancer operating manual.

22.12. Assess the number of weights recommended by the balancer and, if necessary, adjust (optimise) the tyre's position relative to the rim.

22.13. Before installing adhesive balancing weights, shape them to match the back of the rim. The area where the weights are to be fitted must be additionally cleaned and degreased. Install the weights. After installation, additionally secure the weights with a few hammer blows.

22.14. . Before mounting the wheel on the vehicle, inspect and, if necessary, clean the hub surface against which the wheel assembly will rest.

22.15. Also make sure that the actual direction of rotation matches the direction specified by the tread pattern.

22.16. Fit the wheel assembly to the vehicle.

22.17. When fastening the wheel, inspect the fasteners: the nuts or bolts must match the vehicle's thread size, the wheels' fastening surface type (conical, spherical or flat), and the required length (nuts or bolts must make at least 6–8 turns before being fully tightened); the threads must be clean and free from dirt, dents and burrs.

22.18. Screw in the bolts. Tighten the bolts sequentially in opposite pairs across the central hole.

22.19. Finally, tighten the fasteners with a torque wrench to the torque specified in the owner's manual for the particular vehicle.