

LASF LITHUANIAN AUTOMOBILE SPORTS FEDERATION
2024 TECHNICAL REQUIREMENTS (REGULATION)
FOR
"TR2" CLASS CARS

CONFIRMED:
LASF 4x4 Committee,
17.03.2023
Protocol No.: 03/01/2023

1. GENERAL PROVISIONS

- 1.1. This regulation enters into force from 2023, April 1 and is valid until the official announcement of its replacement.
- 1.2. The requirements set out in Appendix J of the FIA International Sporting Code (hereinafter referred to as FIA TSK J) are only applicable if there is a clear reference to a specific article/clause.
- 1.3. Link: <https://www.fia.com/regulation/category/123>
- 1.4. The details of the car and their fixing must be such that they do not pose a threat to the crew, the staff servicing the car, third parties, or the property of third parties.
- 1.5. Anything not expressly permitted by this regulation is prohibited. Permitted changes/reconstructions must not cause or contain unauthorized changes.
- 1.6. In the event of disputes regarding the understanding or application of certain clauses, the LASF 4x4 Committee has the right to comment and clarify these regulations.

2. CONCEPTS

- 2.1. Base model - a car model, including all its modifications, produced in a certain period and having its own factory code (marking).
- 2.2. Homologated car - a car modification or variant of its execution, which is recorded in the list of homologated cars of the FIA or the National Motor Sports Federation, according to the officially approved set of parameters.
- 2.3. The body is a set of metal parts of the body, which may be marked with a VIN identification number, connected at the factory by welding or other fastening elements (glues, rivets), including the bottom of the car (including the transmission tunnel and sills), front and rear side members and beams and partitions between them (if they are not bolted in the manufacturing process), A, B, C pillars, roof plane with reinforcement beams, rear fenders (if they are not bolted in the manufacturing process), partition between the cabin space and the engine compartment, partition (if provided) between the interior and the luggage compartment, the chassis beam and the suspension attachment points (if they are not screwed during the production process).
- 2.4. The frame is a supporting structure made of two longitudinal and at least two transverse metal profiles, which can be marked with a VIN identification number. Body and suspension fixing elements (points) are installed in this structure.
- 2.5. Interior - the space provided by the serial car manufacturer for the driver and passenger, which is separated from the engine compartment and the luggage compartment by partitions. If a part is installed in the interior space, covered (fenced) with a liquid-proof and fire-resistant container (partition), this part is considered to be installed outside the interior.
- 2.6. Original part - a part that was used in the serial production of a car of the current model or a part (analogue) of other manufacturers with an identical shape and principle of operation. This detail may not be modified in any way, except when permitted by certain clauses of this regulation. E.g.: BMW X5 can use SWAG, FEBI, TRW, LEMFORDER levers instead of the original lever. However, instead of the original BMW differential lock, it is forbidden to use CUSCO, QUARIFE, KAAZ locks.
- 2.7. Serial part - a part that was used in the serial production of a car of an existing brand or a part (analogue) of other manufacturers with an identical shape and principle of operation. This detail may not be modified in any way, except when permitted by certain clauses of this regulation. E.g.: The BMW X5 can use the BMW X1 lever instead of the original lever.

2.8. Free part (without restrictions) - the part can be processed, reformed or replaced by another part in any way. Restrictions do not apply to the material, shape or number of parts. The part can also be disassembled.

2.9. An aerodynamic detail (spoiler) is a detail attached to the car body with an aesthetic and/or aerodynamic function.

2.10. 4x4 - four-wheel drive.

2.11. Geometric engine displacement - calculated according to the formula $V=R^2H$ (V engine displacement, π - 3.1416, R - 1/2 cylinder diameter, H - piston stroke, N number of cylinders).

2.12. Road traffic rules - below in the text KET.

3. CARS ALLOWED

3.1. Production four-wheel drive off-road vehicles prepared in accordance with this regulation.

4. CARS ARE PROHIBITED

4.1. Cars that do not comply with this regulation.

4.2. Cars are driven by two wheels.

4.3. Cars with more than 4 (four) wheels (spare wheels are not counted).

4.4. Cars, in the design or equipment of which the technical commission of the competition found essential defects, which may pose a threat to the crew, service personnel, third parties, or the property (property) of third parties.

5. DIVISION INTO CLASSES - NOT APPLICABLE

6. MINIMUM CAR WEIGHT

6.1. The minimum weight of cars at any time of the competition cannot be less than 1200 kg and not more than 3500 kg.

6.2. The concept of the minimum mass of the car is the mass of the car without crew, without crew equipment, and without spare wheels and spare parts and tools.

6.3. Before weighing, it is forbidden to put any objects, pour any liquids, including fuel, into the car.

7. BODY – FRAME

7.1. Body

a) Body (frame SUV) - must remain original in perimeter A (Figure 1). All other body elements can be removed. Fig. 1

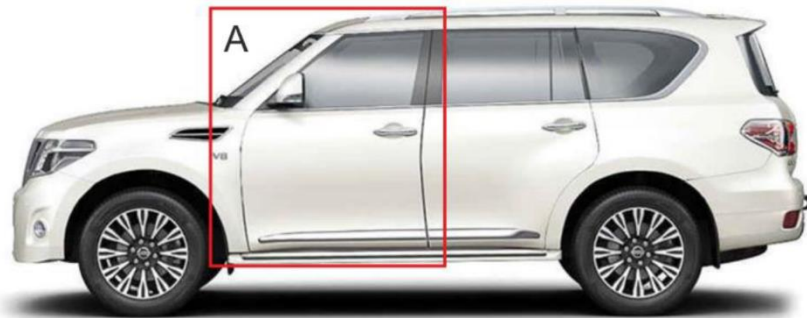


Fig. 1

b) Body (body SUV) - must remain original in perimeter B (Figure 2). All other body elements can be removed. Fig. 2



Fig. 2

c) The floor for the respective type of SUV must remain original in perimeters A and B, but can be modified, but only in cases where it is necessary for the installation of seats and safety hoops. The area to be modified cannot be larger than necessary for the installation of the above-mentioned parts. A sheet of steel or aluminum (if the floor is aluminum) with a minimum thickness of the original floor sheet can be used for modification, fixed by welding.

d) Roof plate - for the type of SUV, it must remain original in perimeters A and B (can also be plastic). If the car is originally equipped with an awning roof, it must be replaced with another roof made of metal (steel - minimum 1.2 mm, aluminum minimum 2.0 mm), covering the width of the upper edge of the front window and extending at least to the arc behind driver's seats.

e) It is allowed to install ventilation openings and diffusers on the roof, provided that their design protects against any objects or water directly entering the car interior.

f) Reinforcement of the frame is allowed, including rewelding of seams.

g) It is allowed to install additional brackets, threads, and attachment points for parts and equipment.

h) Lifting of the body relative to the frame is allowed ("body lift").

7.2. Frame

a) Frame - original, but can be shortened by cutting the front and/or rear part of the frame to the support planes of the springs. Suspension attachment points can be moved. Frame reinforcement is allowed.

7.3. Safety hoops are mandatory. Elements marked in black must be made of a minimum 45x2.5 or 50x2.0 mm diameter steel, cold-drawn, seamless pipe. All other elements of safety hoops can be made of 38x2.5 or 40x2.0 mm diameter steel, cold-drawn, seamless tube. Minimal structures (Fig. 3). For cars manufactured after 2021 on March 15, the mandatory minimum construction of safety hoops according to Fig. 4. Recommended constructions of safety hoops Fig. 5.

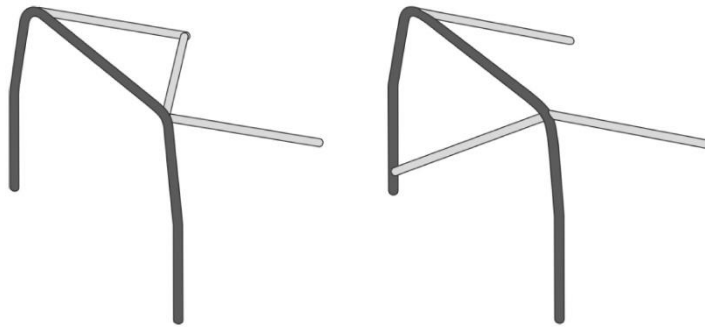
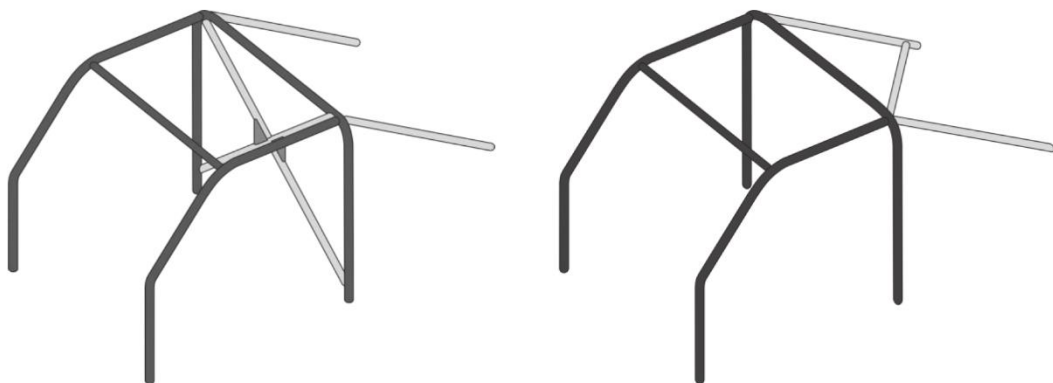


Fig. 3



Fig.4



7.4. Doors, engine and trunk covers, bumpers, fenders, grills

a) Front door - original, but the window frame can be removed. If the car is originally equipped without doors, self-made metal doors must be installed. The upper edge of this door must not be lower than 300 mm from the seating plane of the seat. Both doors must open from the inside and from the outside.

b) Front door window lifting mechanisms - no restrictions.

- c) Front door interior finishes - original or made of other materials, but must cover all door openings and mechanisms.
- d) Rear door - no restrictions.
- e) Rear door window lifting mechanisms - no restrictions.
- f) Interior decoration of rear doors - without restrictions.
- g) Engine hood - mandatory.
- h) Trunk door (board) - without restrictions.
- i) Original bonnet lock - must be removed.
- j) Safety pins - recommended for engine cover.
- k) Front and rear bumpers - without restrictions.
- l) Front and rear wings - mandatory, must cover the wheels at least 120° (Fig. 6).

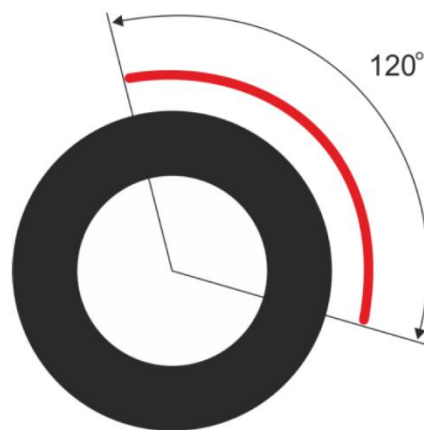


Fig. 6

- m) Front grille - without restrictions.
 - n) Other external details - without limitations.
- 7.5. Windows, wipers, window washing
- a) The front window is triplex. It is allowed to install additional brackets. It is allowed to use a darkening strip at the top of the glass if it does not obstruct the driver's view of road signs and traffic lights.
 - b) Windshield wipers - mandatory.
 - c) Front window washing system - without restrictions.
 - d) Front door windows - no restrictions.
 - e) Rear door windows and rear windows - no restrictions.
 - f) Rear window wiper - no restrictions.
 - g) Rear window washing system - without restrictions.
 - h) Tinting (including silver film) of the front door windows is permitted only when provided for in the supplementary regulations of the competition.
- 7.6. a) Rear view mirrors
- Outside rear-view mirrors without restrictions, but must be installed on both sides of the car. This requirement applies only to cars that are driving on non-traffic roads during the competition.
- b) Internal rearview mirror - no restrictions.

7.7. Spoilers and bottom guards

Spoilers - without restrictions, but cannot protrude from the perimeter of the car A when viewed from above (Fig. 7).

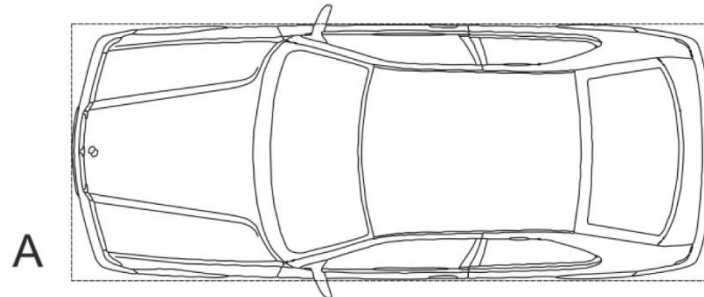


Fig. 7

b) Protection of the bottom of the car - without restrictions, but must not protrude from the body.

7.8. Interior

a) The main condition - there can be no sharp, protruding edges, open cavities in the car cabin that could injure drivers during driving or an accident.

b) Dashboard - no restrictions.

c) Additional measuring instruments, counters, sensors without restrictions, but it is prohibited to install mechanical counters, sensors of engine lubrication and cooling systems, following the requirements of point 16.3 of this regulation.

d) Audible signal - without restrictions.

e) Communication equipment and video cameras are allowed, but only on the condition that they are well fixed and do not interfere with driving.

f) Communication tools - mandatory for maintaining contact with the organizers regarding the provision of medical assistance (GSM or satellite phones, radio stations). CB band (27 MHz) radio stations are recommended.

g) Carpets, pillars and ceiling finishes - without restrictions.

h) Safety belts - standard or sport-type safety belts can be installed. A minimum of four anchorage points, mechanically and/or chemically undamaged safety belts with valid or expired FIA homologation are recommended (FIA standards: 8853/98, 8854/98, 8853-2016). Installation according to the requirements of article 6 of FIA TSK J 283. Original unused seat belts can be removed.

i) Belt cutter - mandatory. The cutter must be within easy reach of the driver and co-pilot, who are wearing seat belts.

j) Seats - serial or can be equipped with sports type (including self-made) seats. Mechanically intact FIA seats with valid or expired homologation are recommended (FIA standards: 8855-1999, 8862-2009, 8855-2021). Installation according to the requirements of article 20 of FIA TSK J 283. Seats not in use during the competition may be dismantled.

k) Fire extinguishing system - is recommended. Installation according to FIA TSK J 283 - 7.1 point requirements.

l) Two manual fire extinguishers of minimum 2 kg or one fire extinguisher of 4 kg - mandatory. If a fire-extinguishing system is installed - one additional manual fire extinguisher of minimum 2 kg is required. Installation according to the requirements of point -7.2 of FIA TSK J 253.

m) First aid kit - mandatory. Must be fully assembled and easily accessible to crew members. The first aid kit must be packed in a waterproof package.

n) Other interior details - without limitations.

Towing eyelets

7.9. a) Towing eyes (minimum internal diameter - 60 mm) - original or other, but reliably installed in the front and rear of the car. Towing eyes can also be formed by drilling a hole in the bottom (engine, transmission) protection. Towing eyes made of webbing are prohibited.

b) Loops must be easily accessible and clearly visible (painted yellow, red or orange) or/and clearly marked.

7.10. Cranes

a) Installation of not less than one and not more than three winches is permitted.

b) Construction of the winch - without restrictions, but the voltage for winch operation cannot be higher than 25V.

c) It is prohibited to install the winch (including the moving parts of the winch) in the car interior.

d) Winch extinguishing cloth (only using metal rope) and flat tape (not narrower than 50 mm) for tree bark protection - mandatory.

7.11. Jacks

a) Stationary car jacks (car lifting systems) - prohibited.

8. ENGINE

8.1. Unlimited choice of engine. In Article 8 below, original parts are referred to - as parts that were originally installed in the engine selected in point E.g.: MITSUBISHI PAJERO car can be equipped with NISSAN PATROL engine. In this case, genuine parts would be called NISSAN PATROL engine parts.

8.2. Cylinder block - original (can be modified).

8.3. The diameter of the cylinders and the stroke of the pistons are unlimited.

8.4. Crankshaft - no restrictions.

8.5. Connecting rods and pistons (with rings and fingers) - no restrictions.

8.6. Crankshaft main and connecting rod liners - no restrictions.

8.7. Flywheel and pulleys - no restrictions.

8.8. Cylinder head - original (can be modified).

8.9. Valves - without restrictions.

8.10. Valve drive (springs, levers, hydraulic compensators) - without restrictions.

8.11. The mechanism (system) changing the angle of the camshafts - without restrictions.

8.12. Engine mounting - no restrictions.

8.13. Timing rollers - without restrictions.

8.14. Camshaft sprockets, gears - no restrictions.

8.15. Camshaft drive (chains, belts, tensioners, sliders) - without limitations.

8.16. The mechanism (system) changing the opening length of the valves - without restrictions.

8.17. Cylinder head gasket and bolts - no restrictions.

8.18. Lubrication system - without restrictions.

8.19. Cooling system - without restrictions, but its components, with the exception of the interior heating equipment, cannot be installed in the car interior. It is allowed to dismantle the heating system or to rearrange it.

8.20. Power system

a) Only air can be mixed with fuel as an oxidizer.

- b) The engine intake air vent cannot be installed in the car interior.
- c) Air filter box (with diffusers) - no restrictions.
- d) Air filter - without restrictions.
- e) Air intake lines before the turbocharger or throttle valve (pipes, hoses) - no restrictions. Additionally, it is allowed to install a snorkel.
- f) Air flow meter - without restrictions.
- g) Carburetor - without restrictions.
- h) Throttle - no restrictions.
- i) Intake manifold - no restrictions.
- j) Turbocharger (compressor) - without restrictions.
- k) Air intake lines after the turbocharger (pipes, hoses) - without restrictions.
- l) Intercoolers for intake air - without limitation, including location.
- m) Nozzles - without restrictions.
- n) Fuel filters and lines - without restrictions. Installation in accordance with the requirements of point 16 of this regulation.
- o) Fuel pump(s) - must be installed outside the cabin (clause 2.5). The pump can only be turned on when the engine is running or when it is started.
- p) Fuel pumping tanks ("replacements") must be installed outside the cabin (paragraph 2.5). Tanks installed outside the fuel tank cannot have a volume greater than 6 L.
- q) The fuel tank is original. It can be moved or replaced with another one if it increases its safety. In this case, it is also allowed to use a self-made fuel tank. The fuel tank is fixed in a metal socket with at least two, 40 mm wide and 1.5 mm thick. Fuel tanks must be installed outside the cabin (point 2.5).
- r) Fuel tank ventilation system and rollover valve are original. If the original system and valve are removed, the new system and valve must comply with the requirements of FIA TSK J 283 – Clause 14.
- s) The fuel filling hole - must not protrude from the outer contour of the body and cannot be installed in the car interior (point 2.5).
- t) Tanks (cylinders) of liquefied and/or natural gas are prohibited.
- u) Fuel. Fuel sold at commercial gas stations is allowed, including E85 fuel (bioethanol). Accessories of any kind are prohibited.

8.21. Exhaust system

- a) All engine exhaust must enter the main exhaust pipe. The outlet of the exhaust
- b) gas pipe must be located at the rear or side of the car and must extend around the perimeter of the car (tolerance +30 mm) when viewed from above, and must be under the body no deeper than 10 cm from the edge of the gauge to which the opening is located. If the exhaust pipe is directed upwards, it cannot extend more than 10 cm above the plane of the roof. Car frame, body, or suspension parts must not be used for exhaust gas.
- c) Exhaust manifold - no restrictions.
- d) Other parts of the exhaust system - without restrictions.
- e) Maximum exhaust noise level of 103 dB(A) at 3500 rpm for petrol and 103 dB(A) at 2500 rpm for diesel cars, measured according to FIA approved methodology.

8.22. Ignition system - without restrictions.

8.23. Engine ventilation system - no restrictions, but if vented to the atmosphere, must be connected to a minimum 2.0 liter closed but vented oil sump. This tank can only be installed in the engine compartment. It is recommended to follow the requirements of point 5.2 of FIA TSK J 285.

8.24. Engine management

- a) Engine control module (computer) - without restrictions.
- b) Engine control program - without restrictions.
- c) Engine control wiring harness - no restrictions.
- 8.25. Other engine parts, mechanisms and systems - without restrictions.

9. TRANSMISSION

- 9.1. Only four (4x4) wheel drive transmissions are allowed.
- 9.2. Conversion from two-wheel drive to four-wheel drive is permitted.
- 9.3. Clutch - no restrictions.
- 9.4. Clutch gear (pedal) - without restrictions.
- 9.5. Clutch master and slave cylinders - without restrictions.
- 9.6. The mains can be replaced with aviation type tubes or hoses. It is allowed to pass the trunks inside the body according to the requirements of point 16 of this regulation.
- 9.7. Transmission mounting - no restrictions.
- 9.8. Gearbox - serial for any brand of car. The clutch cover can be modified to fit the engine, but cannot be welded. An adapter can also be used. The internal structure of the gearbox - without restrictions.
- 9.9. The position and orientation of the gearbox - without restrictions.
- 9.10. The numbers of rail transmissions are unlimited.
- 9.11. Reverse gear - mandatory.
- 9.12. Rail switching mechanism - without restrictions.
- 9.13. Central differential and its control - without limitations.
- 9.14. Cardan shafts and their joints - without restrictions.
- 9.15. Axle shafts and their joints without limitation.
- 9.16. Gearbox (main gear(s)) - no restrictions.
- 9.17. Differential locks - without restrictions.
- 9.18. Other transmission parts - without restrictions.

10. BRAKE SYSTEM

- 10.1. A dual-circuit braking system is mandatory, controlled by a single pedal and simultaneously acting on the front and rear wheels. In the event of any type of brake failure, the system must brake at least two wheels.
- 10.2. Brake pedal and gear without restrictions, but parts must be made of metal
- 10.3. Brake light switch - mandatory with maintained function.
- 10.4. Brake master cylinder (including fluid reservoir) without limitation. Can be double (pedalbox type), with an interaxial brake balance regulator. It is recommended to install the brake fluid tanks in the engine compartment. Tanks made of flammable materials installed in the cabin must be covered with a liquid-proof and fire-resistant container.
- 10.5. Brake booster - without restrictions.
- 10.6. Anti-lock brake system - without restrictions.
- 10.7. Brake calipers - no restrictions.
- 10.8. Brake discs - without restrictions.
- 10.9. Brake pads - no restrictions.
- 10.10. Handbrake - without restrictions, but mandatory.
- 10.11. Intermediate brake balance regulator - without restrictions.

10.12. The mains can be replaced with aviation type tubes or hoses. It is allowed to pass the trunks inside the body according to the requirements of point 16 of this regulation.

10.13. Other parts of the brake system - without restrictions.

11. STEERING MECHANISM

11.1. Steering wheels - front.

11.2. Steering wheel - without restrictions.

11.3. Detachable steering wheel connector - recommended.

11.4. Steering gear (shafts and their joints and suspensions) - without restrictions. Can be hydraulic.

11.5. Steering lock - may be removed or inoperable.

11.6. Steering wheel position regulator - without restrictions.

11.7. Steering column - without restrictions.

11.8. Steering rods and rod ends - without restrictions.

11.9. Power steering (pump, motor, drive and bus) - without restrictions.

11.10. Other parts of the steering mechanism are unlimited, but no parts can be made of composite materials.

12. SUSPENSION

12.1. The working principle of wheel suspensions is unlimited.

12.2. Suspension travel - without restrictions.

12.3. Intermediate axle - without restrictions.

12.4. Springs (springs, torsions) - without restrictions.

12.5. Spring support brackets - no restrictions.

12.6. Shock absorbers - without restrictions. However, a maximum of two shock absorbers per wheel may be installed.

12.7. Hydraulic dampers ("boom stop") - allowed.

12.8. Upper supports of shock absorbers (MacPherson type suspension) without restrictions.

12.9. Wheel bearing elements (including bearings, hubs) - without restrictions.

12.10. Levers - without restrictions.

12.11. Bridges - serial for any brand of car (can be modified). Forbidden use portal bridges.

12.12. Stabilizers and their connections to the suspension - without restrictions.

12.13. The material of the suspension fixing elastic parts - without restrictions.

12.14. Suspension beams (travers) - without restrictions.

12.15. Suspension attachment points - unlimited.

12.16. Active suspension is prohibited.

12.17. Other suspension parts - without restrictions, but they cannot be made of composite materials.

12.18. Ground clearance (independent suspension) - not less than 200 mm and not more than 440 mm. Measurements are made on a level playing field at any time of the competition: Tires are used during competition; Tire pressure at least 0.5 Bar; • The location is only the lowest point of the front reducer housing.

13. WHEELS

13.1. The wheels may not protrude laterally from the fenders, except in cases where the wheels are turned with the help of the steering mechanism, or the suspension of the wheels is damaged.

13.2. Wheel fastening - serial fastening with bolts can be replaced by fastening with studs and nuts. Wheels fixed with a central screw (nut) are prohibited.

13.3. Wheel height (wheel measured horizontally at 0.5 Bar tire pressure) not less than 775 mm and not more than 930 mm (38¹).

13.4. Rims - without restrictions.

13.5. Tires - no restrictions, but chains or other accessories are prohibited (adhesion-enhancing) use.

13.6. Fixing the tire to the rim - without restrictions.

13.7. Automatic tire inflation - prohibited.

13.8. Spare wheel - if provided, must meet the requirements of point 13 and must be securely attached.

14. LIGHTING AND ELECTRICAL EQUIPMENT

14.1. External car lighting devices (may not be certified): Two dipped beam lights in the front; Two position lights at the back; Two brake lights at the rear; • One reversing light; Front and rear cornering lights; In night sections, at least one rear fog lamp (minimum 21W or LED of similar light intensity) is required, which is installed no lower than 1500 mm from the ground.

14.2. Additional lights - unlimited.

14.3. Generator - without restrictions.

14.4. Starter - without restrictions.

14.5. Battery without any restrictions. When moving the battery from its original location, the requirements of point 10.3 of FIA TSK J 285 are followed. A maximum of two batteries can be installed in a car.

14.6. Cable braids - without restrictions, but they are installed in accordance with Article 16 of this regulation point requirements.

14.7. ABS, ESP and similar auxiliary electronic systems - without restrictions.

14.8. 12V socket - mandatory.

14.9. Other details of lighting and electrical equipment - without restrictions.

15. MAIN ELECTRICAL CIRCUIT (GROUND) SWITCH

15.1. The main electrical circuit (ground) switch is mandatory. Must be easily accessible to crew members. Installation and use according to the requirements of FIA TSK J 283 - Article 13.

15.2. Winch emergency switch - recommended.

16. ELECTRICAL WIRES AND PIPES

16.1. Fluid (oil, fuel and hydraulic) lines outside the vehicle must be protected from mechanical damage and corrosion. Fuel and hydraulic lines in the car cabin must be protected from mechanical damage and fire.

16.2. For connecting fuel, lubricating oil and hydraulic fluid flexible pressure lines, threaded, press-on or self-locking - sealing connections must be used.

16.3. Cooling and lubrication oil lines are prohibited in the car interior. If the fuel and/or hydraulic fluid lines are routed in the car interior, they cannot have any connections, with the exception of: connections for passing through firewalls to engine or trunk compartments, connections in brake and clutch lines.

16.4. In places where pipes or cables cross firewalls, the edges of the openings must be covered with protective materials.

16.5. In the spaces between the car's safety hoops and the body, cables and pipelines are prohibited.

17. EQUIPMENT

17.1. Racers' equipment. Full-body clothing and footwear made of cotton or nonflammable fabrics are mandatory. FIA homologated equipment is recommended. Crew members are also required to wear brightly colored vests with reflective patches (vests are optional if reflective elements are integrated into the outfit).

17.2. Helmets - must be helmets certified for motorcyclists or motor sports (FIA, SFI, SNELL, ECE or others). Helmets for rafting (EN1078, EN1077) and mountain biking (SNELL B90) are also allowed. Only elements of communication equipment are allowed to be attached to helmets.

17.3. Head restraint systems (HANS, HYBRID). FIA homologated head restraint systems are recommended (FIA standards: 8858-2002, 8858-2010).

*** This document has been translated from Lithuanian. If there are any sections that are difficult to understand, please refer to the original Lithuanian version.**