Estonian national Group E 2WD technical regulations

Approved by EASU 15.12.2021

1. Definition

1.1. Cars and all the parts must be either, Gr A and Gr N with expired homologation, or non-homologated series production cars available through normal sale channels. Non-homologated cars must comply with Articles 252 and 253 of FIA Appendix J.

1.2. Homologation date of the national Group E car is considered as the date of the issuing technical card to specific competition car.

1.3. Safety cage must comply to FIA Appendix J Art.253.8. valid at the time of issuing the technical card.

1.4. Safety cages of cars with technical car issued starting from 1.1.2023 must be certified by ASN.

1.5. All additions, modifications, and solutions of which is by the scrutineers deemed to be dangerous, is considered dangerous. Any additional questions contact EASU technical commission tehniline@autosport.ee

All modifications not prescribed here must comply with Group A regulations of FIA Appendix J (Art 252 and Art 255).

2. Weight

Minimum weight according to their cubic capacity and number of valves

	2 valves	more than 2 valves
up to 1000 cm³	620 kg	700 kg
1300 cm³	700 kg	760 kg
1600 cm³	780 kg	850 kg
2000 cm³	860 kg	930 kg
2500 cm³	940 kg	1030 kg
3000 cm³	1020 kg	1110 kg
over 3000 cm³	1130 kg	1230 kg

3. Authorized modifications and adjunctions

3.1. Engine

3.1.1. Engine type and manufacturer are free. Location of the engine in its original compartment is free. Mounting points can be added.

3.1.2. Original cubic capacity can be modified by the means of reboring, resleeving or changing the stroke.

3.1.3. Crankshaft is free.

3.1.4. Original type and number of the crankshaft's bearings must be retained.

3.1.5. Cylinder head in the case of 2 valves per cylinder is free. Engines with more than 2 valves per cylinder original cylinder head must be retained. Location and the number of the camshafts must be retained with all the engine types.

3.1.6. In case of supercharging, the nominal cylinder capacity is multiplied by 1,7 for petrol engines and by 1,5 for diesel and rotor engines. The maximum internal diameter of the restrictor is 34 mm.

3.1.7. The accelerator linkage is free.

3.1.8. Exhaust manifold is free, the noise level on the open road must not exceed 103 dB(A)/3500 rpm. The exit of the exhaust pipe must be situated within the perimeter of the car and backward from the centre of the wheelbase.

3.1.9. Lubrication system is free. Location of the oil radiator in engine compartment is free. Oil radiator cannot be fitted inside cockpit.

3.1.10. Camshafts and valve mechanism are free in the case of:

- number and location must be retained

- timing is free
- type of the valve springs and their operating principles must be retained.

3.1.11. Cooling: fan, radiator and the water pump are free, but cannot be mounted inside of the cockpit.
3.1.12. Flywheel is free.
3.1.13. Ignition is free.
3.1.14. In championship classes with engines up to 2500 ccm (included) the engine cubic capacity may exceed the capacity allowed int the particular competition class up to 2,5%.

3.2. Transmission
3.2.1. Clutch is free in the case of:
- clutch pedal is operated with drivers foot, if the alternative system is not been homologated (homologation must be filed).
- clutch of the automatic gearbox must be homologated (homologation must be filed).

3.2.2. Gearbox is free with following restrictions:
- original location must be retained
- only mechanical gearbox operated by driver mechanically is allowed
- gearbox must be include reverse gear
- to change the location of the gear level modications to the bodywork is allowed.

3.2.3. Only one driving axle is allowed. A four-wheel drive car can be converted to two-wheel drive car. A front-wheel drive car can be converted to a rear-wheel drive car.
3.2.4. Half-shafts are free.
3.2.5. Final drive with housing and differnetials are free. Differentials are compulsory.
3.2.6. Rear axle is free. Type of the rear axle of the rear-wheel drive car is free.

3.3. Suspension
3.3.1. Type of the suspension, support arms and wishbones are free with following restrictions:
- the suspension mounting points to the bodyshell or chassis may be modified by using „Uniball“ joint.

3.3.2. Suspension mounting points are free.
3.3.3. Reinforcement bars may be fitted, inevitable changes to the bodyshell are allowed.
3.3.4. Additional springs can be added if the type and the principle of the main spring is maintained
3.3.5. Active suspension is forbbiden. Suspension and shock absorbers adjustable during the driving are forbbiden. Generally shock absorbers are free.
3.3.6. Anti-roll bars are free, even if they are part of the suspension.
3.3.7. Steering system is free, power steering can be added.
3.3.8. Four wheel steering, if not homologated, is prohibited (homologation must be filed).
3.3.9. Gravel tyres max 15'' with max diameter 650 mm.

3.4 .Bodywork, bodyshell, chassis
3.4.1. Chassis must be made of steel. The 2- and 4-door versions is permitted. Any lightenings or changes, which are not specifically allowed, are prohibited. Strengthening is allowed even if the added material is not same as the original. All the hatches and doors must be opened from outside. Front doors must be able to open from inside and outside.
3.4.2. Windows can be made from plastic, except windscreen. Plastic windows must be made from unbreakable material (bendable without breaking) with minimal thickness 3,0 mm. Plastic front side windows must have a sliding hatch with min measures 140x140 mm, or revolving hatch with diameter min 140 mm. Plastic side windows must be mounted to the bodywork by means of glueing and/or riveting, max diameter of rivets 3,2 mm. Although plastic windows can be mounted into original seals. In this case windows must be fixed from bottom to the door frame wit two mounting points. For cars without a window frame on the doors, it is permitted to use plastic windows if the

doors are fitted with a frame made of metal tube (min. 10x10 mm) following the original window opening.
Front doors must retained original shape and material. Front door pillars must be retained.
3.4.3. Bonnet, boot lid, rear doors and mudguards (in the case of bolted by manufacturer) can be made of composite polymer (thickness 1,5-2,5 mm) reinforced with fibre, or aluminium (thickness 0,5-1,5 mm). Additional two ventilating holes can be made to the bonnet, with maximum area of 500 cm^2. Area is measured on the bonnets reference plane, not depending of shape or existence of the air intakes, ribs etc. These holes must be covered with metal net or ribs, which cannot be higher than 35 mm measured from bonnets plane.
3.4.4. Homologated air intakes for purpose of ventilating the cockpit can be fitted into roof. Air intakes of the other manufacturers can be used.
3.4.5. It is permitted to remove the trim from the doors together with their side protection bars in order to install a side protection panel which is made from composite material with thickness of 1,0 mm, sheet metal with thickness of 0,5 mm or any other non-flammable material with thickness of 2,0 mm. This is also apply to the area beneath rear windows of 2-door cars. Material should be fitted with rivets or screws. Glove compartment can be removed.
3.4.6. Dashboard must originate from same car manufacturer and in original shape. It is permitted to make necessary changes to the dashboard for fitting additional gauges and controls.
3.4.7. Air ducts beneath wheel axles are free. Spoilers can be removed. Non-homologated spoilers can be fitted in the case of:
- spoiler must not protrude beyond of contour of the car, when seen in frontal and vertical projection
- spoiler with its mounting points must fit inside a 20x20 cm square when viewed from side

3.4.8. Fenders can be processed. Widening fenders is allowed, material is free, but car's overall width cannot be widen more than 14 cm (7 cm from both sides). Cutting the old fender beneath of the widened fender is allowed. The wheel arches may be modified in order to house the wheels authorised.
3.4.9. Bumpers must be used on cars which otherwise changes the cars construction or would be dangerous to drivers and public. If the bumpers are removed their mountings must also be removed.
3.4.10. Front grill can be modified, but not removed.
3.4.11. The spare wheel housing can be removed.
3.4.12. If the original seat attachments or supports are not used, seats must be fixed to the two square tubes (min.35x35x2.5mm) or circle tubes (min 35mmx2.5), which are welded into cross member between bodyshell lower rail and central tunnel wall. All anchorage points must be reinforced with end plates (area 40 cm^2, thickness 3 mm). Cross member tubes and end plates must be from same material as bodyshell. In the case of light alloy bodyshell, end plates can be made from aluminium. Length of the end plate one side must be at least 60 mm. It is highly recommendable to fix seats in conformity with FIA drawing 253-65B. Seat's side anchorage points thickness must be at least 3 mm in the case of steel or 5 mm in the case of light alloy.

3.5. Brakes
3.5.1. Non-homologated anti-lock brake systems are prohibited.
3.5.2. Hand brake is mandatory. Auto-lock is not required.
3.5.3. If original braking system is not used, at least dual circuit brakes are compulsory.
3.5.4. Otherwise the braking system is free.

3.6. Other equipment
3.6.1. Material and positioning of wires and lines is allowed to change (it concerns windscreen washing, air, cooling, fuel, brake fluid lines, suspension system and electrical wiring).
Lines containing fuel or hydraulic fluid may pass through the cockpit, but without any connectors inside except necessary connections for hand brake, fuel pump or fuel tank, which can only be done

by means of cone or metal thread fittings sealed with metal gasket washer. Fuel line connections must be protected against leaking. Hot fluid lines cannot pass through cockpit, except these are fitted by manufacturer. In this case these lines must be effectively protected. Non-metallic fluid lines inside cockpit are prohibited, except fuel and brake fluid lines from teflon with metallic shielding. Lines for windscreen washer fluid can be made from plastic. All the lines must be fixed to the bodyshell and protected against friction. Inside the cockpit, the passage of any lines between the side members of the bodyshell and the safety cage is forbidden.
3.6.2. The heating unit may be removed completely in the case of condensation of the windscreen and side windows is prevented.
3.6.3. Original fuel tank can be replaced with FIA FT3 1999; FT3.5; FT5 and also SFI safety fuel tank, and also with other autosport intended safety tanks with following information:
- name of the manufacturer
- model and the series numbers
- the date of the end of validity

3.6.4. Safety fuel tanks may be used another two years after the date of the end of validity.
3.6.5. Safety fuel tank must be located behind of the main rollbar and separated from cockpit with leak-proof and non-flammable cover or conteiner. If the FIA standardised connectors not used, filler neck must be fitted to external surface of the car. The fuel tank air vent(s)
must be equipped with non return and closing valves.
3.6.6. Nominal voltage of the battery must be retained. Should the battery be moved from its original position, only dry battery can be used and it must be fastened to the body with at least 2 metal rods with at least M6 bolts (strength class min. 8.8). Attachment points must be strengthened with 3 mm thick metal plates with an area of 20 cm2.

3.7. Special regulations
3.7.1. Movable aerodynamic devices are prohibited, if fully homologated system are not in use.
3.7.2. It is prohibited to use non-homologated ceramic details, except clutch coating.
3.7.3. The use of titanium alloy is prohibited.

3.8. Safety regulations
3.8.1. The safety prescriptions as specified in Article 253 of Appendix J are applicable.
3.8.2. In addition to the general circuit breaker, the outside triggering system of the circuit breaker is compulsorily and must be situated at the lower part of the windscreen mountings. It must be marked accordingly.
3.8.3. Fire extinguishing system is not compulsory, but highly recommendable.
3.8.4. In competitions all drivers must wear overalls as well as gloves (optional for co-drivers), long underwear, a balaclava, socks and shoes homologated to the FIA 8856-2000 standard. It is also allowed to use SFI-3.3/10;SFI-3.3/15;SFI-3./20 gloves, long underwear, balaclava, socks and shoes and SFI 3.2A/10; SFI 3.2A/15; SFI 3.2A/20 overalls.
3.8.5. FIA homologated safety harness must be used, straps at least 3'' wide and at least 5/6 point design. Crotch straps must be anchored to the special tube measuring at least 35x2,5 mm. SFI 16.1 and SFI 16.5 safety harnesses with straps at least 3" wide and 5/6 point design with turnbuckle or psuh button release system.
3.8.6. Safety harnesses can be used two years after their expire date, but only at competitions in Estonia.
3.8.7. Seats must be must be homologated at least by the FIA standard 8855-1999 and may be used after their expiry date, provided that their framework is not deformed, supports not detached and that there are no significant damage or tears in the cover fabric.
3.8.8. All drivers must wear FIA homolgated crash helmets according to FIA Technical List no 25.
3.8.9. Safety cages according to FIA Appendix J, Art.8

3.8.10. Front Head Restraint systems according to FIA Technical List no 29 is compulsory in all groups/classes.
3.8.11. It is allowed to use 8857-2001 Type A homologated paddings (FIA Technical List no 23), but also other safety cage paddings, which are made from non-flammable material with minimum thickness 15 mm.