

# IRISH SUPERCARS RALLYCROSS CHAMPIONSHIP



## 2022 TECHNICAL REGULATIONS



## 4 TECHNICAL REGULATIONS

### 4.1 INTRODUCTION

4.1.1 The following Technical Regulations are set out in accordance with the Motorsport Ireland specified format and it should be clearly understood that if the following texts do not clearly specify that you can do it you should work on the principle that you cannot.

4.1.2 It is the competitor's responsibility to ensure that their car complies with these Technical Regulations, as published by the Organisers, throughout official practice, qualifying, and races at all times.

### 4.2 GENERAL DESCRIPTION

4.2.1 The Irish Supercar Rallycross Championship is for Competitors participating in vehicles that are a rigidly closed non-convertible model, that either is, or has been, homologated in Group A/N (Kit Car and World Rally Car disqualified) or in Supertouring and conforming to Appendix J Group A (Article 255). Cars not homologated with the FIA but produced in series and regularly on sale through a recognised commercial network are also eligible. Cars complying with the FIA technical regulations for Rallycross Supercars as specified in article 279 of FIA Appendix J in their entirety are also eligible.

#### 4.2.2 Examination of Vehicles

4.2.2.1 The Organisers (in addition to any other powers they may have under these Regulations) reserve the right before or after any race in the Championship to designate any one or more of the competing cars for special eligibility scrutineering. Upon such election being made, the competitor shall immediately place the car under the control of the Organisers and be deemed to have permitted all such scrutineering, examination and testing as the organisers may responsibly require to undertake. The organisers have the right to:

- a) Examine the car at the circuit for such period as they may reasonably require and take fuel and/or other samples and/or
- b) Retain the car for detailed examination at premises chosen by the organisers. If the organisers elect to retain the car, they shall make it available for collection by the competitor at least seven days prior to the qualification session for the next race in the Championship unless the car is found to be in breach of these regulations and/or
- c) Seal the car and its components in such a manner as they may choose and require the competitor at their own expense to present the car at any other premises chosen by the Organisers for detailed examination within a specified period and/or remove the car by transporter at no expense to the competitor to an appointed location. The competitor will be advised in writing of the time, date and location of the subsequent testing or eligibility examination.

4.2.2.2 The stripping of the engine or any required component will be undertaken by the competitor and/or mechanic/technician nominated by the competitor at the premises designated and overseen by a Motorsport Ireland licenced Scrutineer.

4.2.2.3 Competitors will be personally and solely responsible for ensuring that their cars comply with their registration details and with these regulations for each event at which they are entered. Failure to comply in either respect will be a breach of these regulations. Queries concerning eligibility should be referred in writing to the Organisers or the Eligibility Scrutineer at least seven days prior to an event entered, to permit a written ruling in advance of any meeting at which it is intended to compete.

### 4.3 SAFETY REQUIREMENTS

4.3.1 All cars must comply with these Technical Regulations, in addition to the safety requirements as listed in MI GCR Appendix 2 and Appendix 82 of the current MI Yearbook.

- 4.3.2 A Multi Point roll cage in compliance with FIA Appendix J 253 and in accordance with MI GCR Appendix 2 Section 16 is mandatory. Roll cage padding must be FIA approved.
- 4.3.3 It is mandatory to use a handheld or plumbed in fire extinguisher in accordance with MI Regulation Appendix 2 Section 6.4.2.
- 4.3.4 A minimum five-point safety harness in accordance with MI Regulations Appendix 2 Section 7.2 must be fitted
- 4.3.5 An FIA Homologated Driver's seat in good condition must be used and fitted in accordance with MI Regulation Appendix 2 Section 20.2. The seat must be mounted entirely to one side of the vehicle's centreline.
- 4.3.6 Safety helmet must be to the standard specified in MI GRC Appendix 2 Section 17 and must incorporate an FIA approved FHR device fitted in accordance with FIA Regulations.
- 4.3.7 Drivers must wear overalls as well as gloves, long underwear, a balaclava, socks and shoes/boots homologated to the FIA 8856-2018 standard, as detailed in FIA Appendix L Chapter III Article 2. See MI GRC Appendix 2 Section 23.
- 4.3.8 Vehicles must be equipped with with an externally and internally circuit breaker as per MI GRC Appendix 2 Section 22 of the current MI yearbook. The circuit breaker must be operable when the driver is normally seated irrespective of whether a safety harness is worn or not.
- 4.3.10 The car must be fitted with towing points front and rear. It is only permissible to use a strap to connect to the existing towing eye mounting point on the cars to avoid damage in a contact situation. Where a solid bracket is used, the towing eye must not protrude beyond the bodywork of the vehicle. See MI GRC Appendix 2 Section 21.
- 4.3.11 The use of FIA-approved 8863-2013 safety racing nets (see FIA Technical List No. 48) on both sides of the driver is recommended. Where used, racing nets must be fitted in accordance with "FIA Racing Nets Installation Specification for Touring and Grand Touring Cars". Window nets must not be used where racing nets are used.
- 4.3.12 The side windows on the driver's side of the car must remain closed. A sliding window in the side windows of the driver's and passenger's doors may be fitted. The opening must be a minimum of 130mm x 130mm and a maximum of 150mm x 150mm. The sliding windows must be closed at the start of the race.

#### **4.4 GENERAL TECHNICAL REQUIREMENTS & EXCEPTIONS**

- 4.4.1 All vehicles must be of sound construction and mechanical condition and be well maintained.
- 4.4.2 All vehicles must have a Competition Car Log Book in accordance with MI GRC Appendix 2 Section 27.
- 4.4.3 No approved modification may give rise to an unapproved one.
- 4.4.4 The use of magnesium alloy sheet is not permitted. Titanium sheet may only be used for heat shields

#### **4.5 CHASSIS**

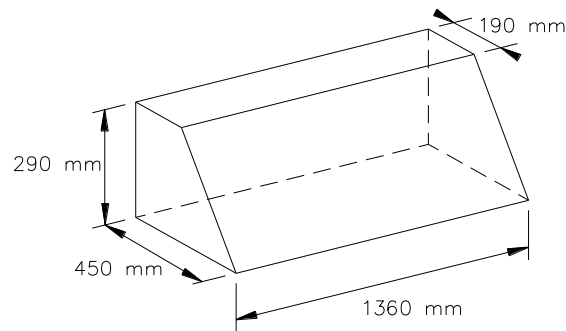
- 4.5.1 The series-production bodyshell and chassis must be retained but the original basic structure may be reinforced in accordance with current FIA Appendix J Article 255.5.7.1.

#### **4.6 BODYWORK**

- 4.6.1 The original bodywork must be retained, other than as detailed below

- 4.6.2** The bodywork may be modified in accordance with current FIA Appendix J Article 279. All the measurements will be taken in relation to the middle of the front and rear axles of the homologated bodywork. The materials added must be ferrous and must be welded to the bodywork.
- 4.6.3** Except for the driver's door, the material is free, provided that the original outside shape is retained. Door hinges and outside door handles are free. The original locks may be replaced but the new ones must be efficient.
- 4.6.4** The original driver's door must be retained and the trim may be removed. If the trim is removed it must be replaced with sheet metal in accordance with MI GCR Appendix 2 Section 14.3.
- 4.6.5** Trim strips, mouldings, etc., may be removed.
- 4.6.6** Under no circumstances can any part of the bodywork or the suspended parts of the car be below a horizontal plane passing 100mm above the ground, the car being in normal race trim with the driver strapped into his/her seat.
- 4.6.7** Windscreen wipers are free, but there must be at least one in working order.
- 4.6.8** At the start of each heat or race the car must be fitted with mudflaps behind all four wheels extending to a minimum of 38mm either side of the tyre tread and to a maximum of 76mm above the ground, or in compliance with current FIA App J Article 279.
- 4.6.9** At least one mirror of a minimum surface area of 50cm<sup>2</sup> must be securely mounted and positioned to give a clear view to the rear. The edges of the mirror must be protected by a suitable cover to reduce the possibility of injury in event of an accident. Must have two exterior mirrors fitted (one on each side) at all times
- 4.6.10** The rear doors may be sealed shut by welding.
- 4.6.11** The locking devices on the bonnet and boot lid, as well as the hinges, are free, but each lid must be fixed at four points, and opening from the outside must be possible. The original closing systems must be removed. The bonnet must be flush with the wings in its original position at all times.
- 4.6.12** Openings may be made in the bonnet for ventilation, provided that they do not allow mechanical components to be seen.
- 4.6.13** In all circumstances, the bonnets and boot lids must be interchangeable with the original or homologated ones.
- 4.6.14** It is permitted to remove the window opening mechanisms from all four doors or replace electric winders with manual winders.
- 4.6.15** It is permitted to install one or two ventilation flaps in the roof of the car, in the following conditions:
- (a) maximum height 10 cm
  - (b) displacement contained within the front third of the roof
  - (c) hinges on the rear edge total maximum width of the openings: 500 mm
- 4.6.16.** Front aerodynamic device  
The material and shape are of free design, limited by:
- 4.6.16.1** The vertical plane passing through the axis of the front wheels and the horizontal plane passing through the lowest point of the door opening (FIA Appendix J Article 279 drawing 279-3).
- 4.6.16.2** The overall length of the homologated car.
- 4.6.16.3** To the front, by the vertical projection of the bumper of the homologated car.

- 4.6.16.4** The material of the bumper must remain unchanged (plastic remaining plastic, including composite materials). Aftermarket bumpers are permitted provided they are to the same pattern as the original equipment bumpers.
- 4.6.16.5** The safety elements allowing the absorption of impacts between the bumper and the chassis must be kept.
- 4.6.16.6** Modification of the lateral part of the front bumper: according to the definition of the fender (FIA App J, Article 251-2.5.7).
- 4.6.16.7** One or more openings may be made in the bumper (the part situated above the plane passing through the lowest point of the door opening), but the total surface of openings in the front shield must be no more than 2500 square cm.
- 4.6.16.8** These openings must not affect the structural integrity of the bumper.
- 4.6.16.9** The thickness of the front aerodynamic devices must be 2mm minimum and 5mm maximum.
- 4.6.17** Rear aerodynamic device
- 4.6.17.1** It must have the maximum dimensions defined in current FIA Appendix J Drawing 279-4.



**279-4**

- 4.6.17.2** Even if the vehicle has original dimensions bigger than those maximum dimensions, it must comply with this drawing.
- 4.6.17.3** At its extremities, this device must join the bodywork, and it must be entirely contained within the frontal projection of the car without its rear-view mirrors, and within the projection of the car seen from above. The base of the box including the drawing must be the one with the largest dimensions. It must be positioned horizontally.
- 4.6.17.4** Further, this volume may be extended section by section, which means that at any point of the rear aerodynamic device, each section must not exceed the section 450mm x 290mm x 190mm, supports included.
- 4.6.17.5** The thickness must be 2mm minimum and 5mm maximum.
- 4.6.18** Under body protections are only permitted as defined in FIA Art 279 Appendix J 10.3.15.

## **4.7 ENGINE**

- 4.7.1** The engine is free, but the engine block must be from a model of car of the same original registered trademark as the car's original bodywork. Custom engines complying fully with FIA Appendix J, Article 279, 5.4 are eligible.
- 4.7.2** The engine must be located in the original engine compartment.
- 4.7.3** Permitted
- Carbon or composite materials (for clutches and non-stressed covers or ducts only).
- 4.7.4** Prohibited
- Twin-engine configurations (unless homologated in that form)
  - Variable valve timing
  - Variable length inlet trumpets
  - Titanium (except in connecting rods, valves, valve retainers and heat shields)
  - Magnesium (in moving parts)

- Ceramic components
- Internal and/or external spraying or injection of water or any substance whatsoever (other than fuel for the normal purpose of combustion in the engine).
- Variable diameter inlets and adjustable internal vanes on turbochargers
- Water injection (even if it originally exists on the homologated block)
- Spraying of the intercooler

**4.7.5** Throttle as defined in FIA Appendix J, Article 279, 5.4.2.2 h.

**4.7.6** A restrictor fitted to all forced induction cars in accordance with FIA Appendix J, Article 279, 5.2.3 is optional.

**4.7.7** The exhaust gases from the waste-gate must exit into the vehicle's exhaust system and must not be recycled in anyway. Furthermore, there must be no connection between the intake and exhaust systems

**4.7.8** Supercharged cars must not be equipped with any device which allows the boost pressure, or the electronic management system controlling the boost pressure, to be adjusted by the driver while the car is in motion (except the throttle pedal).

**4.7.9** Cars with forced induction will be subject to a coefficient of 1.7:1.

## **4.8 SUSPENSION**

**4.8.1** Cars must be fitted with a sprung suspension.

**4.8.2** The operating method and the design of the suspension system are free.

**4.8.3** Front axle - Modifications to the shell (or chassis) are limited to:

- (a) the reinforcement of the existing anchorage points,
- (b) the addition of material for the creation of new anchorage points,
- (c) the modifications necessary to provide clearance for suspension components, drive shafts, and wheel and tyre.

The reinforcements and addition of material must not extend further than 100 mm from the anchorage point.

**4.8.4** With the exception of subframes connecting the front to the rear, the front subframe is free as regards the material and the shape, provided that: a: it is interchangeable with the original part and that the original number of anchorage points remains unchanged. b: it can be dismantled (no welding).

**4.8.5** Moving the anchorage points of the subframe is allowed provided that they are situated inside the new tunnel (see current FIA Appendix J article 279 8).

**4.8.6** Rear axle -Modifications to the shell (or chassis), to accommodate the changed position of pivot and mounting points, are limited to those in FIA drawing 279-1.

**4.8.7** The springing medium must not consist solely of bolts located through flexible bushes or mountings but may be of fluid type.

**4.8.8** There must be movement of the wheels to give suspension travel in excess of any flexibility in the attachments.

**4.8.9** The use of active suspension is forbidden.

**4.8.10** Chromium plating of steel suspension members is forbidden.

**4.8.11** All suspension members must be made from a homogeneous metallic material.

**4.8.12** Hydro-pneumatic suspension systems are permitted, on condition that they do not have active control.

## **4.9 TRANSMISSIONS**

**4.9.1** The operating method and the design of the system are free except as below.

**4.9.2** Traction control is prohibited.

**4.9.3** Conversion to four-wheel drive is permitted.

**4.9.4** Front and rear limited slip differentials must be mechanical. Active differentials are not permitted. Mechanical limited slip differential means any system, which works purely mechanically, i.e., without the help of a hydraulic or electric system. A viscous coupling is not considered to be a mechanical system.

**4.9.5** In the case of a four-wheel drive vehicle, the addition of a hydraulic system or a viscous coupling to the central differential is allowed; in order to limit the slip, but this system must not be adjustable when the vehicle is in motion.

**4.9.6** Any sensor, contact switch or electric wire on the four wheels, gearbox, or front, middle or rear differentials are forbidden. Only one sensor for displaying the ratio engaged is authorised on the gearbox, on condition that the sensor/electric wire/display assembly is completely independent of the engine control system.

**4.9.7** A maximum of two wires are permitted to the centre differential to power an electric oil pressure pump, provided that the wires serve no other purpose, and the differential is standard equipment for the make and model of vehicle. The system must not be adjustable when the car is in motion.

## **4.10 ELECTRICS**

**4.10.1** The nominal voltage of the electrical system including that of the supply to the ignition of the original car must be retained. Alternator must be fitted and operational at all times.

**4.10.2** Relays, circuit breakers, fuses and cables are free.

**4.10.3** A rear rain light in accordance with MI GCR Appendix 2 Section 2.2 must be fitted and operational.

**4.10.4** The location, make, number and capacity of the batteries are free.

**4.10.5** Have any wet batteries in the drive/passenger compartment securely enclosed in a leak-proof container which has been fixed firmly to the vehicle and is capable of retaining any leaked acid and protecting the terminals from short circuiting and producing sparks.

**4.10.6** All lights may be removed but all cars must be equipped with two rear lights of the anti-crash type as used in fog with the minimum of 15 watts each and illuminating an area of 60 sq. cm. These must work with or replace the car brake light system at all times and must be between 115cm and 150 cm above the ground and must be clearly visible from behind.

**4.10.8** Starting the car: Cars must be equipped with an electrical energy source to enable the driver to start the engine when normally seated with seat belts fastened.

## **4.11 BRAKES**

- 4.11.1 The operating method and the design of the system are free except as below.
- 4.11.2 There must be a dual circuit operated by the same pedal and complying with following:
  - (a) The pedal shall normally control all the wheels.
  - (b) In case of a leakage at any point of the brake system pipes or of any kind of failure in the brake transmission system, the pedal shall still control at least two wheels on different sides of the vehicle.
- 4.11.3 Anti-lock brake systems are not permitted.
- 4.11.4 The brake discs must be made from ferrous material.
- 4.11.5 A handbrake is mandatory it must be efficient and simultaneously control the two front wheels or the two rear wheels.
- 4.11.6 Fluid tanks are forbidden inside the cockpit.

#### **4.12 WHEELS/STEERING**

- 4.12.1 The complete wheel (flange + rim + inflated tyre) must always fit inside a U-shaped gauge of which the extremities are 250 mm apart, the measurement to be made on an unloaded part of the tyre.
- 4.12.2 The diameter of the rim is free but may not exceed 18".
- 4.12.3 Quick release steering wheels are mandatory. The quick release device must be coloured yellow.

#### **4.13 TYRES**

- 4.13.1 The championship does not use a control tyre.
- 4.13.2 There is no limit on the number of tyres that can be used in the course of a meeting.

#### **4.14 WEIGHTS**

At all times, the minimum weight of the car with driver (wearing full racing apparel) will be 1000kg.

#### **4.15 FUEL TANK/FUEL**

- 4.15.1 Only fuel as defined in MI GRC Appendix 2 Section 28.2 may be used.
- 4.15.2 If a non-original tank is fitted, it must be a safety tank homologated by the FIA in accordance with the specifications of current FIA Appendix J Article 253 Article 14.
- 4.15.3 The tank, the catch tank (buffer box), the pumps and all component of the fuel feed system shall be located at least 30 cm from the bodysell in both lateral and longitudinal directions, outside the driver's compartment.
- 4.15.4 In all cases, the tank, including the filler pipe must be isolated by a firewall or by a container, both of which shall be flameproof and fire-resistant, preventing any fuel from infiltrating the cockpit and any contact with the exhaust pipes.
- 4.15.5 Should the fuel tank be installed in the boot and the rear seats removed, a fireproof and liquid-proof bulkhead must separate the cockpit from the fuel tank.



- 4.15.6 In the case of twin-volume cars, it will be possible to use a non-structural partition wall in transparent, non-flammable plastic between the cockpit and the tank arrangement.
- 4.15.7 The tanks must be protected effectively and securely attached to the shell or the chassis of the car.
- 4.15.9 The use of safety foam in tanks is recommended.
- 4.15.10 All the fuel pumps must operate only when the engine is running, or during the starting process.
- 4.15.11 Have sufficient fuel for a fuel test present at any time during the meeting to comply with the fuel sampling requirements as laid down in the MI GCR Appendix 2 Section 28.2.

#### **4.16 SILENCING**

- 4.16.1 Exhausts systems must comply with the MI GRC Appendix 2 Section 9 and circuit restrictions.
- 4.16.2 All exhaust gasses including wastegate outlet must pass through the main exhaust system.