

# MODIFIED 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 Modified Rallycross Championship is for Competitors participating in cars of rigid construction, homologated or mass produced non homologated vehicles competing in the following classes:

**Class 3a** 2-wheel drive vehicles with engines over 2150cc, including all cars with forced induction, with a minimum weight of 850kg

**Class 3b** 2-wheel drive, normally aspirated vehicles, with engines over 1650cc up to a maximum of 2150cc with a minimum weight of 850kg.

**Super1600** 2-wheel drive, normally aspirated cars with engine capacity up to 1650cc with a minimum weight of 800kg.

#### 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.

4.2.3 All cars must be presented in a good condition, clean and tidy with any damage from a previous round removed or repaired. Any car which, in the opinion of the Chief Scrutineer, does not meet with these requirements will be excluded from the event.

## 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 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 hand held 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 or later, 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 an externally and internally operated 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 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 The competitor must provide the facility to seal (3mm holes cross drilled in two adjacent bolts/studs/castings and a tell-tale wire installed) so that no stripping can be done without removing the seal. The following items must have the facility to be sealed so they cannot be removed and/or dismantled without breaking the seal(s).
- Cylinder head (adjacent bolts)
  - Sump (one each side)
- 4.4.4 No approved modification may give rise to an unapproved one.
- 4.4.5 The use of magnesium alloy sheet is not permitted. Titanium sheet may only be used for heat shields

## 4.5 CHASSIS

**4.5.1** Have a bulkhead separating the cockpit from the engine compartment. It must retain its original material and place, measured in respect of the relevant standard car. Installing components up against or passing through this bulkhead is however permitted, providing it does not protrude into the cockpit more than 30cm (as measured perpendicularly to the bulkhead). This will be measured at the point of intrusion, and parallel to the ground. If this is to include the engine, the cam/valve cover may not extend further back than the forwardmost point of the windscreen aperture when viewed directly from above. For scrutineering purposes, a 13mm diameter hole must be drilled at the forward most point of the screen aperture.

**4.5.2** Local chassis modification or stiffening is permitted.

## **4.6 BODYWORK**

**4.6.1** Bumpers, if fitted, or silhouette of a bumper must both be as originally fitted to the mass-produced vehicle. The supports must also be as originally fitted to the mass-produced vehicle. No reinforcing of bumpers or supports is permitted.

**4.6.2** Have any undertray provided with drainage holes to prevent accumulation of liquids.

**4.6.3** Have a windscreen of either laminated glass or polycarbonate of the required thickness. No apertures are permitted in the windscreen

**4.6.4** Have an operative windscreen wiper and washer system.

**4.6.5** When viewed from above wheels must be covered by rigid material at all times. The outside shape of the original coachwork must be retained except as concerns the wings.

**4.6.6** Openings (maximum of 50mm diameter) may be made in the bonnet, providing they do not make mechanical components visible. Openings may be made in the boot lid for ventilation provided they are covered by mesh.

**4.6.7** Have internal bonnet locks removed and external positive locking fasteners fitted. The bonnet must be flush to the wings as originally fitted at all times.

**4.6.8** Be fitted with at least one interior mirror of minimum surface area 50sq.cm 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.

**4.6.9** 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 the seat.

**4.6.10** Aerodynamic devices

**4.6.10.1** Front Material and shape are free but must:

- (a) Be made from a material that is not less than 2mm and not more than 5mm thick.
- (b) Not protrude beyond the vertical projection of the front bumper of the car.

**4.6.10.2** Rear Material and shape are free but must:

- (a) Be made from a material that is not less than 2mm and not more than 5mm thick.
- (b) Must be contained entirely within the frontal projection of the car without its rear-view mirrors and within the plan of the car seen from above.

**4.6.12** Be fitted with mudflaps behind all four wheels extending to a minimum of 3.8cm either side of the tyre tread and to a maximum of 7.6cm above the ground.

## **4.7 ENGINE**

**4.7.1** The engine is free but will be limited by class in accordance with 4.2.1

- 4.7.2 The block must be from a mass-produced engine or a derivative of a mass-produced engine, although production may have lapsed, and must have the same number of cylinders as the original mass-produced engine for that car.
- 4.7.3 An engine, other than a Series Production Engine or motorcycle engine, of four cylinders and normally aspirated, no greater than 2,500cc are permitted.
- 4.7.4 The engine must be located within the original engine compartment.
- 4.7.5 Twin-engine configurations are not permitted unless mass produced in that form.
- 4.7.6 Catch tanks must be fitted.
- 4.7.7 Have any oil tank, which is, situated outside the chassis or main structure of the vehicle suitably covered with a protective cover (e.g. GRP).
- 4.7.8 Prohibited
- 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

## 4.8 SUSPENSION

- 4.8.1 Suspension is free other than as below.
- 4.8.2 Active suspension and any system which allows control of the spring flexibility, shock absorption or trim height when the car is moving, are prohibited unless fitted by the manufacturer to that body style.

## 4.9 TRANSMISSIONS

- 4.9.1 Transmission is free other than as below.
- 4.9.2 The clutch and its control are free, but automatic operation of the clutch is prohibited (no paddle shift allowed), unless fitted by the manufacturer to that body style. The clutch must be operated by the driver's feet unless an alternative method of operation is fitted by the manufacturer to that body style.
- 4.9.3 Gear selection mechanism must be mechanically operated. Electronic, hydraulic or pneumatic mechanisms are prohibited, unless fitted by the manufacturer to that body style.
- 4.9.4 The final drive assembly, differentials, propshafts and driveshafts are free.
- 4.9.5 Electronically controlled systems are prohibited.

## 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 rearward facing red rain light of 21 watts minimum, or FIA approved LED equivalent complying with MI GCR Appendix 2 Section 2.2 must be fitted at high level in rear window.
- 4.10.4 The 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.
- 4.10.7 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 Brakes are free other than as below.
- 4.11.2 There must be at least two hydraulic systems so that, in the event of failure of one system braking is maintained on at least two wheels (not on the same side).
- 4.11.3 An effective handbrake is obligatory. The handbrake may be modified for fly-off operation.
- 4.11.4 The braking system on all vehicles must be capable of demonstrating its efficiency without impairing the driver's control when tested immediately prior to an event. It must be possible under all conditions, running or stationary, for 25% minimum braking effort to be applied by the driver through the braking system to each axle
- 4.11.5 Brake balance adjusters must not be capable of adjustment during running.
- 4.11.6 Anti-lock devices are prohibited.
- 4.11.7 Brake discs must be of ferrous material.

#### 4.12 WHEELS/STEERING

- 4.12.1 Have maximum wheel width on all cars of 250mm (wheel width = flange + rim + tyre).
- 4.12.2 Have all nuts securing road wheels, excepting those of centre-lock type, of steel and in thread contact over a minimum length of 1.5 bolt/stud diameters. Extended or composite wheel bolts/studs are prohibited. Safety wheel nuts to prevent wheels pulling over the standard nuts are strongly recommended.
- 4.12.3 Steering column locks must be removed.
- 4.12.4 If fitted with a quick release steering wheel the quick release device must be coloured yellow.

#### 4.13 TYRES

- 4.13.1 Tyres are free provided they comply with these regulations.

4.13.2 Hand-cutting is permitted but only for the purpose of introducing additional grooves no deeper than those moulded into a new tyre. Hand cutting in order to increase the depth of existing moulded grooves is prohibited.

#### 4.14 WEIGHTS

4.14.1 The minimum weight of the car including driver in full race apparel at all times must be:

**Class 3a** 850kg

**Class 3b** 850kg.

**Super1600** 800kg.

#### 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 The fuel tank must remain in the original position.

4.15.3 It must be possible to take a fuel sample. For fuel injected cars the facility must be a dry break fuel sampling coupling, approved by the FIA. For all others an appropriate fitting to allow fuel sampling must be present.

4.15.4 Fuel filter is free.

#### 4.16 SILENCING

4.16.1 For all cars a noise limit of 105dB is imposed, measured with a noise pressure meter regulated at Position A and SLOW, placed at an angle of 45 degrees to and 50 cm distance from the exhaust outlet, with the car engine turning at 4,500rpm.