2024 Technical Regulations for INRC-R

The Following Articles of 2024 FMSCI Appendix J are applicable

Art.251 – Classification and Definitions
Art.252 – General Prescriptions for Production Cars(Group N), Touring Cars(Group A)
Art.253 – Safety Equipment (Groups N, A)
Art.254 – Specific Regulations for Production Cars (Group N)

All modifications are forbidden unless expressly authorized by the regulations specific to the group as mentioned below.

It is permitted to use after-market replacement parts as long as such parts are in conformity with the homologated parts vis dimensions and working principle(including of Optional variants in Group N) in ALL ASPECTS except the brand name. Such parts should have no additional functions relative to the original parts.

When the word FREE is used in the regulations below, it means that those parts need not be homologated as a variant. It also means that parts may be used without any attached conditions, so long as the basic function/principle, of the replaced part is the same. In some cases it is permitted to remove parts, and in others, replace.

Art.1 – Eligible Vehicles & Classes

Any large-scale series production cars manufactured or assembled and sold in India on or after 01/01/2010 is only eligible(for E.g. Mitsubishi Cedia was sold from 2006 to 2011 so it is eligible for this class).

The vehicles must be homologated with the FMSCI or have a completed TDF (Technical Data Form) to be eligible to compete.

FMSCI Homologated/TDF cars with FMSCI R2B/R2C kits are also allowed.

Naturally Aspirated cars with engine displacement up to 2100cc.

Super charged/Turbo charged Cars up to 1400cc.

Art.2 – Dimensions & Minimum Weight

A maximum of 100mm more than the homologated track width is permitted.

Minimum weight:

Normally Aspirated Engine	Super Charged Engine	Minimum Weight
Over 1390cm^3 and up to 1600cm^3	Over 927cm^3 and up to 1067cm^3	1030 Kgs
Over 1600cm^3 and up to 2000cm^3	Over 1067cm^3 and up to 1333cm^3	1080 Kgs
Over 2000cm^3 and up to 2100cm^3	Over 1333cm^3 and up to 1400cm^3	1130 Kgs

This is the real weight of the car, with neither driver nor co-driver nor their equipment and with a maximum of one spare wheel.

When two spare wheels are carried in the car, the second spare wheel must be removed before weighing.

All the liquid tanks (lubrication, cooling, braking, heating where applicable) must be at the normal level foreseen by the manufacturer, with the exception of the windscreen wiper, headlight wiper, fuel and intercooler water spray (if homologated) tanks, which must be empty.

The minimum weight of the car may be checked with the crew on board (driver + co-driver + their full equipment), as the minimum weight defined in Art.2 tabular column + 160 kg.

Further, the minimum weight defined in Art.2 tabular column must also be respected.

It is permitted to complete the weight of the car by one or more ballast weights provided that they are unitary blocks, rigidly fixed by means of tools on to the floor of bodyshell / chassis in a location clearly visible to the scrutineers, with the provision for sealing.

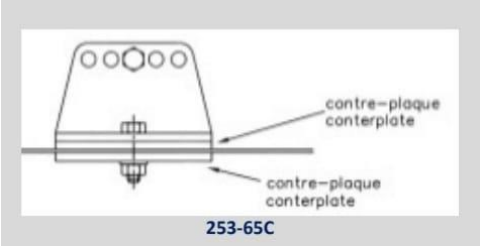
Maximum mass of a single ballast is 30kgs, Maximum mass of ballast at each mounting location is 30kgs and must respect drawing 253-65C.

Ballast must only be made of lead**(no other materials).**

The ballast must be attached to the bodyshell/chassis at least at two fixing points by bolts of at least grade 8.8 with a minimum diameter of 10mm, with counter plates, according to the principle of Drawings 253-65C.

Any movable ballast system is forbidden.

The ballast should not have any sharp edges and all the edges must have a minimum radius of 5mm.



253-65C

The minimum area of contact between bodyshell /chassis and counter plate is 40cm^2 for each fixing point.

Failing to meet the required weight regulations will result in disqualification or exclusion of the car

The Organisers/Technical Delegate have the right to weigh the cars at any time during the event.

Art.3 – Engine

3.1-Engine & Gearbox Mounting

Engine mounts free, not the numbers.

Gearbox mounts and their numbers are free.

The material of the elastic part may be replaced.

Mountings and their anchorages on the body shell may be modified provided that the angle and position of the engine within its compartment are not modified. The number of mountings may not be modified.

3.2-Compression Ratio

Compression ratio FREE

3.3-Cylinder Block

As supplied by manufacturer, as per Homologation/TDF, but modification of Cylinder Block is permitted only to provide Oil Squirters.

For the sole purpose of being able to fit the gearbox, local external machining of the engine block is allowed.

3.4-Maximum Bore Allowed

Re boring of 0.5mm maximum is allowed in relation to the original bore as specified in the Homologation/TDF, even if the capacity class limit is exceeded (Crossing the limit of 2100cc in NA cars & 1400cc in Super charged cars is permitted, provided that this limit was crossed only by means of reboring to a maximum of 0.5mm over the homologated/TDF bore).

3.5-Piston

Piston FREE.

3.6-Connecting Rod

Connecting rod FREE
Must be made of steel.

3.7-Crank Shaft

Crankshaft Balancing is permitted. Forged Steel crankshafts are permitted
The make and material of the shell bearings and thrust bearings are free, but they must retain their original type and dimensions. All engine pulleys are free along with the drive belt.

3.8-Flywheel

Flywheel FREE. Diameter of the starter ring and the number of teeth must be retained. Only steel or Aluminium alloy or a combination of both is permitted. No exotic materials are permitted (Titanium, composites, etc).

3.9-Cylinder Head

Surfacing/Facing of the head, at gasket plane is permitted. Cylinder head Porting is allowed. Addition and removal of material is permitted
Cylinder head gasket is FREE.

3.10-Fuel Injection System & Throttle body

Fuel Injection system:
The injectors may be modified or replaced in order to modify their flow rate.
The injector rail may be replaced with another of free design but fitted with threaded connectors for connecting the lines and the fuel pressure regulator.
No of Injectors FREE and their Working Principle is FREE
Blow off valves and fuel pressure regulators are FREE
Relocation of the fuel injectors are permitted.

Throttle body:
Numbers has to be same as Homologation / TDF.
Diameter of the throttle Valve is FREE
Vehicle equipped with Motorized Throttle body may be changed to mechanical Throttle body or vice versa.

3.11-Sensors & Actuators

Sensors and Actuators are FREE
Addition of sensors are allowed.

3.12-CAM Shaft

CAM shaft FREE
Adjustable CAM pulley is permitted. The number and diameter of the bearings must be retained." VVT" and "VALVETRONIC" etc. Type systems are authorised if original. They may be rendered inoperative.
Timing belt, belt tension rollers and locking of belt tensioners are free. The material and the profile of the timing belt is free so long as the number of teeth is identical to the original.
The oil inlets may be blocked. The plugs used must have no function other than that of blocking the ducts.

3.13-Intake & Exhaust Valves

Valves FREE, but not their numbers, so long as the valve homologated diameter is maintained.
The valve cotters and guides are not subject to any restriction.
Valve springs and their numbers are free.
Spacers may be added under the valve springs.
Except TITANIUM, any other material may be used in the valve train
Rocker arms are free as well as their ratio
The timing is free. If the original timing includes an automatic play recovery system, this may be neutralized mechanically and play compensation discs may be used.
The valve play compensation discs between the valve buckets and stem are free.

3.14-Intake Manifold

Intake manifold FREE
But the Mounting points of the Intake Manifold should be same as OEM.
Fitment dose not entail the modification of other components, (Fire wall & Bonnet).
Relocation of the fuel injectors are permitted.

Air filters FREE
All components up stream of the throttle body are FREE(up to throttle body are free), but must be in the confines of the engine compartment.

3.15-Exhaust System

FREE(Exhaust manifold to the exit is free)
There should be at least one muffler present in the system
The location of the exit of the exhaust pipe is as per Homologation/TDF or the exit of the exhaust pipe shall be at the rear of the car, you are permitted to modify, reshape, cutting the bumper for the exit of the exhaust.
Exhaust gases may only exit at the end of the system

3.16-Ignition System

Ignition system FREE

3.17-Cooling System

A larger radiator may be fitted, the mounting points may be changed to accommodate the same, so long as it remains in proximity to the original radiator.
Radiator screens are FREE.
Cooling fans are FREE.
Water pump FREE (Mechanical / Electrical)
The original Radiator cowl may be modified to accommodate a larger radiator and the intercooler. Holes may be made (free of size and shape) in the front bumper/front body work/front grill, provided these are meant for the sole purpose of cooling the radiator/intercooler or brakes. However the minimum weight of the car should be respected.

3.18-Lubrication System

The oil radiator, oil/ water exchanger, lines, thermostat and pump strainers (including the number) are free without modifying the bodywork. The oil radiator cannot be situated outside the bodywork.
The oil gauge is free but must be present at all times. It may be moved from its original location. Fitting of an oil filter is mandatory and the entire oil flow must pass through this filter or cartridge. An

adaptor between the oil filter and the oil filter housing or between the oil filter support and the engine block is permitted. The adaptor may also have oil cooling and temperature and / or the pressure sensor connections. Fitment of baffles in the oil sump is permitted. The oil pump may be modified. The flow rate may be increased relative to the original. Fitting of oil pump chain tensioner is permitted. The drive system to the oil pump is free. The oil pressure regulation system may be modified. The oil pressure accumulator is free.

3.19-Induction System

Induction system(Turbo charger) FREE, but not the numbers.

Supercharging/Turbocharging a Homologated NA car is permitted, provided the CC limit of the Supercharged vehicle under Art.1 classes is respected(turbo cars up to 1400cc).

If the Air Inlet housing of the Turbo charger(Inner Diameter) is below 33mm Restrictor is not required, if its more than 33mm Restrictor is mandatory by respecting Art 254.

Inter Cooler:

Ducts and the pipes of the supercharging system are free, but their only function must be to channel air and to join various parts together. The intercooler and its components must be in the engine bay or ahead of the radiator provided it is within the bodywork of the car. Ducting for the intercooler is permitted through the bumper, front grill. Holes may be cut out to allow air to pass. Water spray system may be adopted.

Maximum capacity of water for use in intercooler water spray system is limited to 20 lts the tank should not be located in the passenger compartment system. If fitted in the rear boot area the rear fire wall should be completely sealed.

The original Radiator cowl may be modified to accommodate a larger radiator and the intercooler. Holes may be made (free of size and shape) in the front bumper/front body work/front grill, provided these are meant for the sole purpose of cooling the radiator/intercooler or brakes. However the minimum weight of the car should be respected.

Art.4 – Fuel Circuit

Fuel FREE

4.1-Fuel Tank

The fuel tank capacity is FREE.

FIA approved Fuel Cell is Recommended for 2024.

The OEM fuel tank may be replaced with any other OEM fuel tank, provided the original seam welding remains untouched.

The fuel tank may be relocated in the boot so long as there is a cover and this cover must be fire and leak proof. The filler cap must be located on the body (external) and must have a breather/vent, and located where it is open to atmosphere. All fuel lines are free.

From 01.06.2024

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~~FIA approved Fuel Cell is Recommended for 2024.~~

~~The OEM fuel tank may be replaced with any other OEM fuel tank, provided the original seam welding remains untouched.~~

~~The fuel tank may be relocated in the boot so long as there is a cover and this cover must be fire and leak proof. The filler cap must be located on the body (external) and must have a breather/vent, and located where it is open to atmosphere. All fuel lines are free.~~

As supplied by manufacturer, as per Homologation/TDF
Or
As per FMSCI Appendix-J Art 253-Art.14.
Or
FIA approved Safety Fuel Tanks
Must be equipped with an FT3-1999, FT3.5-1999 or FT5-1999 safety fuel tank.
Modifications necessary for its installation must not exceed those allowed by Articles 254 of the FMSCI Regulations.

4.2-Fuel Pump

Fuel Pump FREE, location can be in tank or outside.
The number must remain as supplied by manufacturer, as per Homologation/TDF.

Art.5 – ECU, Wiring Harness & Electrical Equipment

5.1-ECU & Wiring Harness

FREE- including the wiring harness
Location of the ECU may be changed.

5.2-Battery

Battery FREE

i) Location of the battery:

- Battery must be located in its original location or in the cockpit.
- If Installed in the cockpit, the battery must be situated anywhere behind the base of the driver's or co-driver's/passenger seat.

ii) Battery fixing:

- Battery must be securely fixed and the positive terminal must be protected.
- If the battery is moved from its original position, it must be attached to the body using a metal seat and two metal clamps with an insulating covering, fixed to the floor by bolts and nuts.
- The insulation used for covering the battery must be of fire proof material. In case of any dispute concerning on the fire proof material, the decision of the FMSCI Chief Scrutineer/Technical Delegate will be final.
- For attaching these clamps, metallic bolts with a diameter of at least 8mm must be used, and under each bolt, a counter plate at least 3mm thick and with a surface of at least 20cm² beneath the metal of the bodywork.
- If the wet battery is moved from its original position into cockpit it must be rigidly fixed and the entire battery must be covered in a leak proof casing and the positive terminal must be protected and an insulation covering must be done between the battery and the leak proof outer casing. The decision of the Technical Delegate/Chief Scrutineer is final.

Art.6 – Power Train

6.1-Driven Wheels

Only 2-Wheel Drive Cars are permitted

6.2-Clutch

Clutch Assembly FREE
The master cylinder/slave cylinder/clutch disc/cover assembly/release bearing are free.
The clutch disc and their numbers are FREE.

6.3-Gearbox

Gearbox FREE
The number of mountings and their anchorages may be modified.
Gear Ratios FREE, Synchronized or Non Synchronized (Dog Box) and Sequential gear boxes are permitted.
Linkages are FREE.
Internal shifting methods are FREE.
An additional oil cooling device may be used.

6.4-Differential

Final drive FREE
The use of a mechanical type Limited slip differential(LSD) is authorized.
The interior of the differential housing may be modified to accommodate the LSD.

6.5-Transmission Shafts

Transmission shafts FREE

Art.7 – Axles & Suspension

7.1-Suspension System

Front and rear suspension top mounts design FREE.
A silent block may be replaced by any other type of joint, collaring is authorised.
Wishbones FREE
Rear suspension method and working principle FREE.
The strengthening of suspension pickup points on the chassis is permitted even though this may form a box section.

Shock Absorber:
Shock Absorbers FREE
Whatever the type of shock absorbers used, plain bearings are mandatory and use of ball bearings will linear guidance is prohibited.
Suspension travel limiters are allowed.
Upper plate for the mounting of shock absorber to chassis is FREE.
Helicoil springs FREE, along with their numbers. Parts for preventing the springs from moving in relation to their mounting points are authorized.

7.2-Axle Assembly

Strengthening of Sub frames by addition of material is permitted.
Modifications, addition or removal of material are permitted in front & rear sub frame.

7.3-Stabilisers/Torsion bar

Torsion bars FREE, these freedoms on torsion springs do not authorise one to disregard the ground clearance.

Front & rear anti-roll bars are FREE, The anti-roll bars homologated by the manufacturer may be removed or disconnected.

Stabiliser link rods are free.

Art.8 – Running Gear

A silent block may be replaced by any other type of joint, collaring is authorised.

8.1-Wheels(Rims & Tyres)

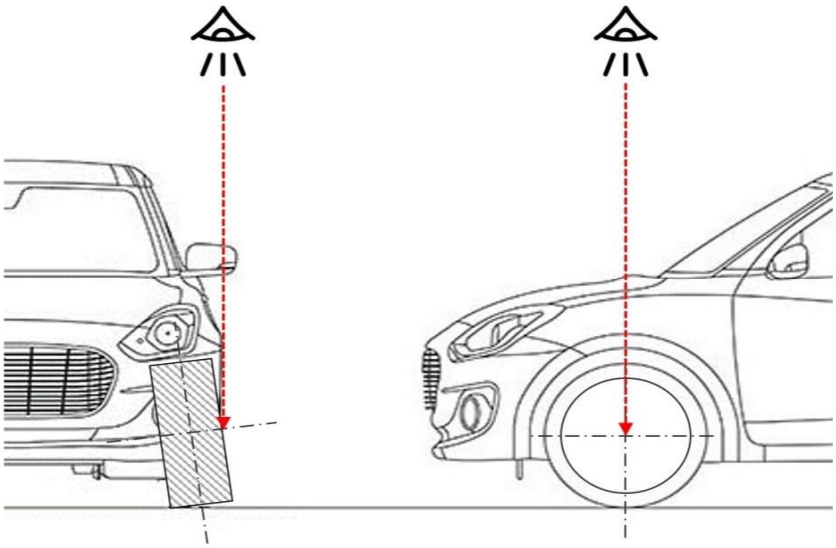
Maximum wheel width of 8 inch is permitted.

In all other respects wheels are FREE.

The spare wheel(s) is (are) not mandatory and if carried it must be securely fixed.

Spacers for wheel rims are permitted by respecting Art2(track width)

No portion of the tyre above the centre line must be visible when viewed from the top(see drawing 8.1-1)



8.1-1

8.2-Wheel Assembly(Hub & Knuckle)

Front and rear hubs are FREE.

Wheel carriers FREE, provided a maximum of 100mm over the homologated track width is not exceed, carrier supports may be strengthened(hollow sections authorised).

8.3-Brake System

Disc brakes along with the complete braking unit are free for the front and rear, even if the original vehicle did not have one.

Brake rotors can only be made of steel.

For each wheel one cooling duct with a maximum diameter of 10 cm is allowed or two cooling ducts of 7 cm diameter is allowed, these ducts may be made of composite material.

Only the following mounting points are authorised for fixation of lines to bring the cooling air to the brakes.

- Original apertures in the body work, e.g., for fog lamps, may be used to bring cooling air to the brakes; the connection of the air ducts to the original apertures in the bodywork is free, provided these apertures remain unchanged.
- If the car does not have any original apertures, two circular apertures of a maximum diameter of 10 cm, or equivalent section, may be made in the front bumper.
- A device for scraping away mud which collects on the brake discs and / or the wheels may be added.

- A device to protect the brakes from flying stones may be added.
- Servo brakes- FREE
- Brake linings- material and mounting method (riveted or bonded) are FREE provided the dimensions of the linings are retained.
- Brake rotors are free as long as they are housed within the wheel rim.
- Pedal box - FREE or the original may be modified.
- Tandem Master cylinder - FREE.
- Front and rear pressure regulator / limiter- FREE.
- Handbrake – FREE. It is permitted to modify / replace the hand brake provided it remains on the central tunnel. Dual rear handbrake (standard one and Hydraulic system) is permitted.
- Front callipers- FREE. The calliper support is FREE.
- Its allowed to disable the automatic rear brake adjuster.

8.4-Steering System

The driving pulleys and the position of the hydraulic power steering system are FREE.
Steering rods are FREE
Steering column -FREE
Steering wheel - FREE, the original locking system of the anti-theft lock may be removed or rendered inoperative.
Steering fluid tank - FREE
Strengthening of OEM tie rod is allowed.

Art.9 – Body Work

Strengthening of chassis is allowed by welding or addition of sheet metal so long as it follows the shape of the original part.

9.1-Interior

1. All plastic claddings inside the passenger compartment can be removed.
2. Pedal box FREE or the original may be modified.
3. The original dashboard must be retained. It is permitted to remove the glove compartment cover and the central console. Door pads may be replaced with fabricated ones.
4. All parts of the AC/heating system may be removed.
5. The dashboard may be modified to accommodate the fitment of roll cage, navigational instruments etc.
6. Floor carpets are free and may thus be removed.
7. All sound proofing materials may be removed.
8. Fixing of dead pedals for driver comfort are permitted.

9.2-Exterior

1. The window glass of the rear doors, rear windshield glass may be replaced with fixed Perspex / acrylic sheets, so long as the transparency of the original glass is maintained and fixed with bolts or rivets. The rear doors winding mechanisms may be removed.
2. Front and rear wheel arches - It is permitted to fold back the metal edges or reduce the plastic edges of the fenders and bumpers if they protrude into the wheel housing.
3. It is permitted to alter/modify the fenders for the purpose to accommodate the tyre profile with in the same. Fender flares/wheel arches are permitted to be fixed on the existing body

work above the tyre wheel arch to comply with the rules, material for the same is free, it can be riveted, welded, glued or bonded.

4. Plastic and sound proofing parts may be removed from inside the wheel arches. These parts may be replaced made of aluminium, plastics or composite materials and the Shape is FREE.
5. The capacity of the windshield water tank is free.
6. Additional safety fastenings for the windscreen and side windows are permitted.
7. The bumper mountings are free so long as the original shape of the bodywork and the bumper remain the same.
8. Bumpers / Grills / Headlights and Fender Inner Linings may be interchanged with different models of the same car.
9. Cooling Ducts / Vents are permitted with in the Bumper and on the Bonnet to enable Cooling / Venting of the Engine compartment and Brakes.
10. The front grill is free.
11. Under body protection is permitted.
12. Bonnet vents/scoops FREE. These modifications are limited to the bonnet only. This will be in addition to the roof scoops for the driver and navigator.
13. It is permitted to replace the OEM Bumpers with Fibre glass replicas, provided the shape is identical to the OEM component.
14. It is permitted to replace the OEM door rear view mirrors with any aftermarket mirrors, so long as the Rear-view visibility is equal to or more than the OEM mirrors.
15. The Frame/Cowl which houses the radiator assembly, if made of plastic, may be made/repaired/strengthened with metal, so long as the original position of the components, it houses remains the same as provided by the manufacturer. Any change in position is permitted if a specific regulation allows it.
16. Windshield washer container is FREE, it is permitted to relocate the windshield washer water container within the space under the bonnet.

Art.10 – Safety Requirements

As per 2024 FMSCI Racing Regulations Appendix-J Art 253 Safety Equipment (Group N, A) and As per FMSCI 2024 Safety Requirements for 4Wheeler.

10.1-Driver Safety Equipment

As per FMSCI 2024 Safety Requirements for 4Wheeler.

Its mandatory to use FHR along with the Helmets compatible to use with FHR as per FIA standards.

10.2-Roll cage

As per 2024 FMSCI Racing Regulations Appendix-J Art 253 Safety Equipment (Group N, A) Art-8.Safety Cages

10.3-Seat & Seat Belt

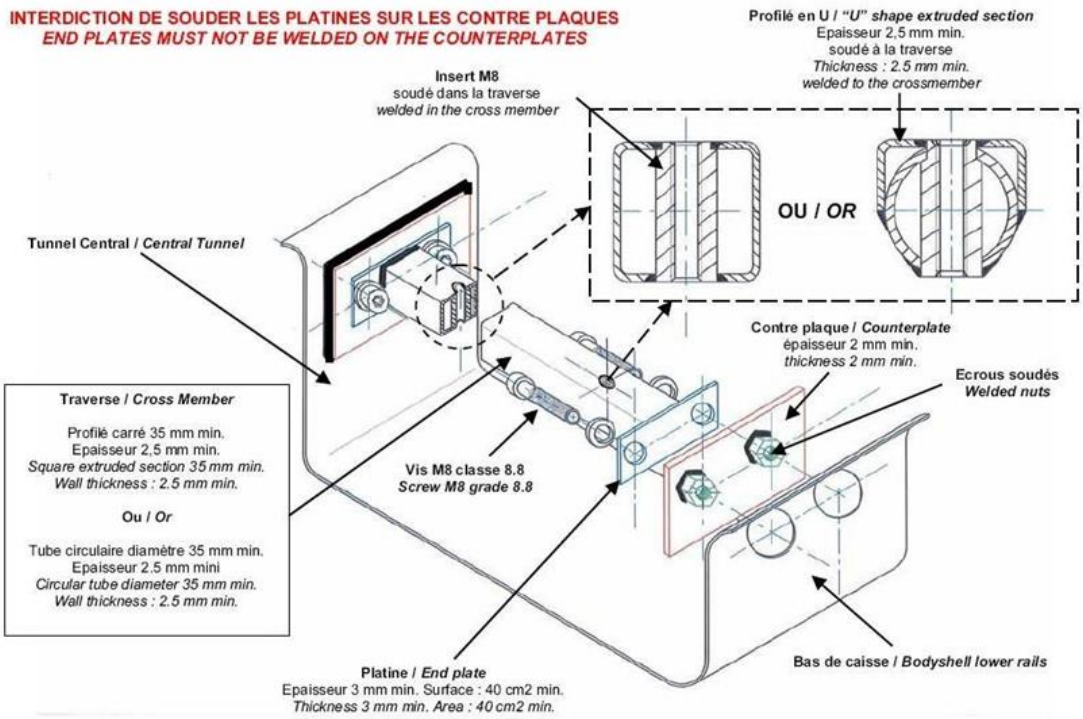
As per FMSCI 2024 Safety Requirements for 4Wheeler.

From 01.06.2024 Seat Anchorage point and Seat support must only as per the following methods

1) If OEM seat anchorage points are not used(seat support must be fixed on to the cross member):

It must follow the drawing 253-65B of FMSCI Art 253-Safety Equipment(Group N, A)

The seat support must be fixed on to the anchorage points of cross member for fixing seats via at least 4 mounting points per seat, using bolts minimum M8 of grade 8.8



253-65B

FITTING INSTRUCTIONS

- 1- Drill holes (larger than nut outer diameter) in the bodyshell lower rail and in central tunnel wall.
- 2- Weld the nuts on the counter plates, then weld these on the bodyshell lower rail on the central tunnel wall.
- 3- Weld the 2 threaded inserts in the cross member, then weld the endplates at each end of the cross member.
- 4- Fix the assembly through 4 number of M8 bolts of grade 8.8 which are screwed in the welded nuts.

2) If OEM seat anchorage points are used on to fix the seat supports directly onto the shell/chassis:

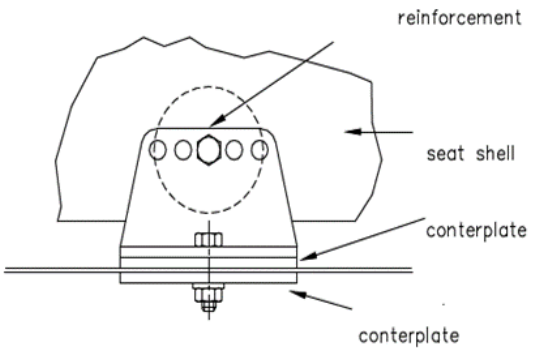
It must follow the drawing 253-65 of FMSCI Art 253-Safety Equipment(Group N, A)

The seat supports must be attached directly to the OEM seat anchorage points on the body shell/chassis via at least 4mounting points per seat using bolts with minimum M8 of grade 8.8 and counter plates, according to the Drawing 253-65.

The minimum area of contact between support, shell/chassis and counter plate is 40 cm2 for each mounting point.

The minimum thickness of the seat supports and counter plates is 3 mm for steel and 5 mm for light alloy materials.

The minimum longitudinal dimension of each support is 6 cm.



253-65

10.4-Fire Extinguisher

The minimum Quantity of Extinguishant for system mounted(plumbed in system) must be 3kg.
Manual Extinguishers
Minimum Quantity of Manual Extinguishant:

- AFFF 2.4liters
- FX G-TEC 2.0 kg
- Viro 3 2.0kg
- Zero360 2.0kg
- Powder 2.0kg

Fire Extinguishers to be rigidly fastened with a quick release clamps (minimum 2 nos.) fitted in an easily accessible and a visible position. The mounting bracket of the fire extinguisher must be bolted to the floor with a bolt of minimum 10 mm diameter. The minimum bracket thickness-2mm MS SHEET METAL

10.5-Protective Padding

Where the occupant's bodies could come into contact with the safety cage, flame retardant padding as per FMSCI 2024 Safety Requirements for 4Wheeler must be provided for protection.

Art.11 – Data Acquisition

Fitting of additional Sensors are allowed, for data acquisition.

Art.12 – Hybrid System

Hybrid unit and its components must be rendered inoperative or be removed in full.

Failing to meet the above required regulations will result in disqualification or exclusion of the car for the relevant session(s).

Note: Other than the modifications permitted expressly above should follow 2024 Group N Technical Regulations FMSCI Art 254.

Note: If any ambiguity or missing data from the Homologation / TDF form, the FMSCI may source any component from the OE manufacturers to compare dimensions.

NOTE: Changes for the 2024 Technical Regulations are highlighted in Yellow

****END****