



FEDERATION INTERNATIONALE  
DE MOTOCYCLISME

# TECHNICAL RULES

*ISDE*

*EnduroGP*

*SuperEnduro*

*HardEnduro*

# 2026

*RÈGLEMENTS TECHNIQUES*

*ISDE*

*EnduroGP*

*SuperEnduro*

*HardEnduroENDURO*

# **Technical Rules**

**6 DAYS®, EnduroGP  
SuperEnduro, HardEnduro**

**2026**

# **Règlements Techniques**

**6 DAYS®, EnduroGP  
SuperEnduro, HardEnduro**

YEAR 2026		
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## DIAGRAMS

Any references to the male gender in this document are made solely for the purpose of simplicity and refer also to the female gender except when the context requires otherwise.

## **01.01 INTRODUCTION**

The term motorcycle covers all vehicles having, in principle, less than four wheels, propelled by an engine and designed essentially for the carriage of one or more persons of which one is the rider of the vehicle. The wheels must normally be in contact with the ground except momentarily or in certain exceptional circumstances. Furthermore, in order to traverse certain surfaces one or all of the wheels can be replaced with skis, rollers or chains.

## **01.03 FREEDOM OF CONSTRUCTION**

A motorcycle must conform to the requirements of the FIM regulations, to the Supplementary Regulations, as well as to a number of specific conditions that the FIM may require for certain competitions. No restriction is placed on the make, construction or type of motorcycle used.

All solo motorcycles (Group A) must be constructed in such a way that they are entirely controlled by a rider.

## **01.05 CATEGORIES AND GROUPS OF MOTORCYCLES**

Motorcycles are divided into categories which must be observed for all meetings.

In principle, it is forbidden for different categories, groups and classes to compete in the same race, unless the Supplementary Regulations state otherwise.

### **Category I**

Motorcycles propelled by the action of one wheel in contact with the ground. For Electric Power Vehicles (see Art. 01.50)

### **Category II**

Special vehicles propelled by the action of one or two wheels in contact with the ground but which are not covered by the conditions of Category I.

#### **Group A1 - Solo Motorcycles**

2-wheel vehicles making only one track on the ground.

### Category III

Vehicles propelled by the action of multiple driving wheels in contact with the ground in only one direction.

Group C - Special 2 wheel driven motorcycles

Group J – Electric Power Vehicles (see Art. 01.50)

### 01.07 CLASSES

Groups are again separated into classes according to cylinder capacities as detailed below. Generally, these classes must be observed for all meetings.

Any motorcycle coming within classes of Category I, Group A1 and Category 2, Group C shall be eligible for entry.

The classes are defined as follows:

#### FIM 6 Days®:

- Enduro 1: Up to 250cc 2-stroke and 4-stroke + **EPV\***
- Enduro 2: From 255cc to 450cc 4-stroke + **EPV\***
- Enduro 3: Over 255cc 2 stroke and over 455cc 4-stroke + **EPV\***

#### FIM EnduroGP:

- Enduro 1: up to 250cc 2-stroke and 4-stroke + **EPV\***
- Enduro 2: from 255cc to 450cc 4-stroke + **EPV\***
- Enduro 3: over 255cc 2-stroke and over 455cc 4-stroke + **EPV\***
- Junior 1: up to 250cc 2-stroke and 4-stroke
- Junior 2: over 255cc 2-stroke and 4-stroke
- Youth: up to 125cc 2-stroke
- Women: 2-stroke or 4-stroke (all capacities)
- Junior Women: 2-stroke or 4-stroke (all capacities)**
- Open 2stroke: only 2-stroke (all capacities)
- Open 4stroke: only 4-stroke (all capacities)
- Open Senior: 2-stroke or 4-stroke (all capacities)

#### The classes for FIM SuperEnduro:

- Prestige: 2-stroke or 4-stroke (all capacities) + EPV\*
- ~~Open: 2-stroke or 4-stroke (all capacities)~~
- Junior: 2-stroke or 4-stroke (all capacities) + **EPV\***
- Youth: up to 125cc 2-stroke

### FIM HardEnduro:

Hard Enduro (Pro):	2-stroke or 4-stroke (all capacities) + <b>EPV*</b>
Junior Hard Enduro:	2-stroke or 4-stroke (all capacities)
<b>Women's Hard Enduro:</b>	<b>2-stroke or 4-stroke (all capacities)</b>
<b>Youth Hard Enduro:</b>	<b>2-stroke or 4-stroke (all capacities)</b>
<b>Senior Hard Enduro:</b>	<b>2-stroke or 4-stroke (all capacities)</b>

\*For Electric Powered Vehicles, see Art. 01.50

## **01.11 MEASUREMENT OF CAPACITY**

### **11.11 Reciprocating movement engine, "Otto" Cycle**

The capacity of each engine cylinder is calculated by the geometric formula which gives the volume of a cylinder; the diameter is represented by the bore, and the height by the space swept by the piston from its highest to lowest point:

$$\text{Capacity} = \frac{D^2 \times 3.1416 \times C}{4}$$

where D = bore  
and C = stroke

When a cylinder bore is not circular the cross sectional area must be determined by a suitable geometrical method or calculation, then multiplied by the stroke to determine capacity.

When measuring, a tolerance of 1/10 [mm] is permitted in the bore. If with this tolerance the capacity limit is exceeded for the class in question, a further measurement should be taken with the engine cold, to 1/100 [mm] limits.

### **11.15 Wankel system**

For Wankel system engines with a triangular piston, the capacity is given by the formula:

$$\text{Capacity} = 2 \times V \times D$$

where V = capacity of a single chamber  
and D = number of rotors

This engine is classified as a 4-stroke.

### **11.16 Number of cylinders**

The number of cylinders in an engine is determined by the number of combustion chambers.

If separate combustion spaces are used, they must be connected by an unrestricted passage of minimum cross sectional area at least 50% of the total inlet port area.

#### **01.17 SUPERCHARGING**

Supercharging by means of a device of any kind is forbidden in all meetings.

An engine whether 2-stroke or 4-stroke coming within any one of the recognised classes (determined by the capacity of the working cylinder) shall not be considered as supercharged when in respect of one engine cycle, the total capacity measured geometrically, of the fuel charging device or devices, including the capacity of the working cylinder (if used for injecting the fuel), does not exceed the maximum capacity of the class in question.

#### **01.18 TELEMETRY AND COMMUNICATION**

Information must not be transmitted in any way to or from a moving motorcycle.

An official signalling device may be required on the machine.

Automatic lap timing devices are not considered as “telemetry”.

Automatic lap timing devices must not disrupt any official time keeping methods and equipment.

No signal of any kind may pass between a moving motorcycle and any person, including radio and Bluetooth communication. The exception is for the signal from the time keeping transponder, automatic lap timing devices or from the approved on-board cameras (with prior written approval from the Championship Promoter/Organiser, which cannot be granted for helmet mounted cameras).

Only the Promoter or the FIM can ask riders to have on-board cameras on their motorcycle. The riders will be advised in advance.

The cameras and other hardware will be provided for the riders at least 4 hours before the beginning of the event.

#### **01.19 MOTORCYCLE WEIGHTS**

At present, there are no minimum weight limits for motorcycles. Minimum weight limits may be introduced in the future.

For ~~SuperEnduro~~ Electric Powered Vehicles (EPVs), see Art. 01.50

#### **01.21 DESIGNATION OF MAKE**

When two manufacturers are involved in the construction of a motorcycle the name of both must appear on the machine as follows:

- The name of the chassis manufacturer
- The name of the engine manufacturer

## **01.23 DEFINITION OF A PROTOTYPE**

A prototype motorcycle is a vehicle which must conform to the safety requirements as required by the FIM Sporting Code and Appendices applicable to the type of competition for which it is to be used.

## **01.25 GENERAL SPECIFICATIONS**

The following specifications apply to all vehicles of the groups indicated and to all types of competitions except where otherwise stated in the corresponding section of the FIM Sporting Code.

They should also be applied to all national competitions unless the FMNR (National Motorcycling Federation) has otherwise directed.

Further specifications for some competitions may also be required and these will be detailed in either the appropriate FIM Appendix or in the Supplementary Regulations for the competition in question.

Concerning material verification, in case of doubt, a sample or the part in question shall be taken and analysed at a Material Testing laboratory.

### **25.01 Use of titanium**

The use of titanium alloy in the construction of the frame, the front forks (referred only to structural parts: legs, tubes, etc), the handlebars, the swinging arms, the swinging arm spindles and the wheel spindles is forbidden.

The use of light alloys for wheel spindles is also forbidden.

The use of titanium alloy nuts and bolts is allowed.

### **25.03 Carbon fibre**

The use of carbon fibre reinforced materials is authorised (with the exception of handlebars and wheel rims).

### **25.04 Ceramic materials**

The use of ceramic parts is forbidden.

## **01.26 DEFINITION OF A FRAME OF A SOLO MOTORCYCLE**

The structure or structures used to join any steering mechanism at the front of the machine to the engine/gear box unit and to all components of the rear suspension.

## **01.27 STARTING DEVICES**

Starting devices for the engine are compulsory.

## **01.28 SIDE STAND**

For “6 Days®” and EnduroGP:

Every motorcycle in the ‘parc-fermé’ must be equipped with a side-stand. The side-stand must be fitted, either on the frame or on the swing arm.

For SuperEnduro and HardEnduro:

The use of side-stand is optional.

While riding, the side-stand it must remain in closed position, either with a spring and/or a rubber.

## **01.29 OPEN TRANSMISSION GUARDS**

A guard must be fitted to the countershaft sprocket in such a way that protection is provided for and covers both lower and upper chain runs. This aims at protecting from trapping hands and feet.

## **29.04**

A chain guard must be fitted in such a way to prevent trapping between the lower chain run and the final driven sprocket at the rear wheel.

## **01.31 EXHAUST PIPES**

Each motorcycle must be equipped with an exhaust pipe and a silencer.

Exhaust pipes and silencers must fulfil all the requirements concerning sound control (see also Art. 01.79).

## **31.01**

The axis of the silencer end must be parallel (tolerance 15°) to the two principal longitudinal planes of the vehicle. The extremity of the silencer must not pass the vertical tangent of the rear tyre.

## **31.02**

The edge of the silencer shall not be dangerous in case of accidental contact with the riders or helpers. If the final tube protrudes more than 3 [mm], the edge must be rolled to an angle of 180° or radiused (see pictures below). In both cases, the edge thickness shall be 3 [mm] minimum. See Figure 1

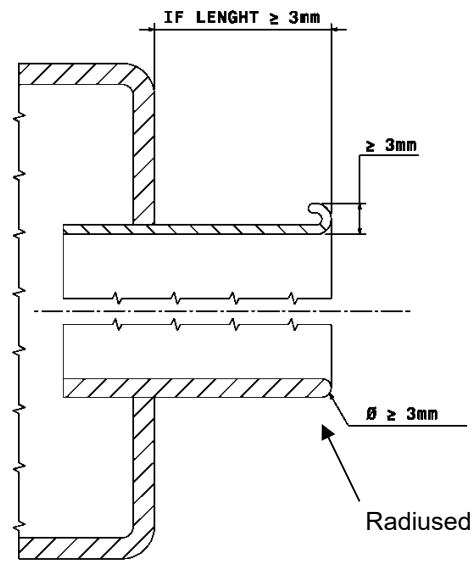


Figure 1

**31.03**

Exhaust fumes must be discharged towards the rear but not in such a manner as to raise dust, foul the tyres or brakes, or inconvenience any other rider.

**31.04**

Any valve systems installed on the exhaust system with a view to influencing (or modifying) the sound level meter test is forbidden. Only exhaust valve systems (e.g. EXUP) provided by the manufacturer on the manifold are authorised. The setting is free.

**01.33 HANDLEBARS****33.01**

The width of handlebars must be not less than 600 [mm] and not more than 850 [mm] (see Figure 2).

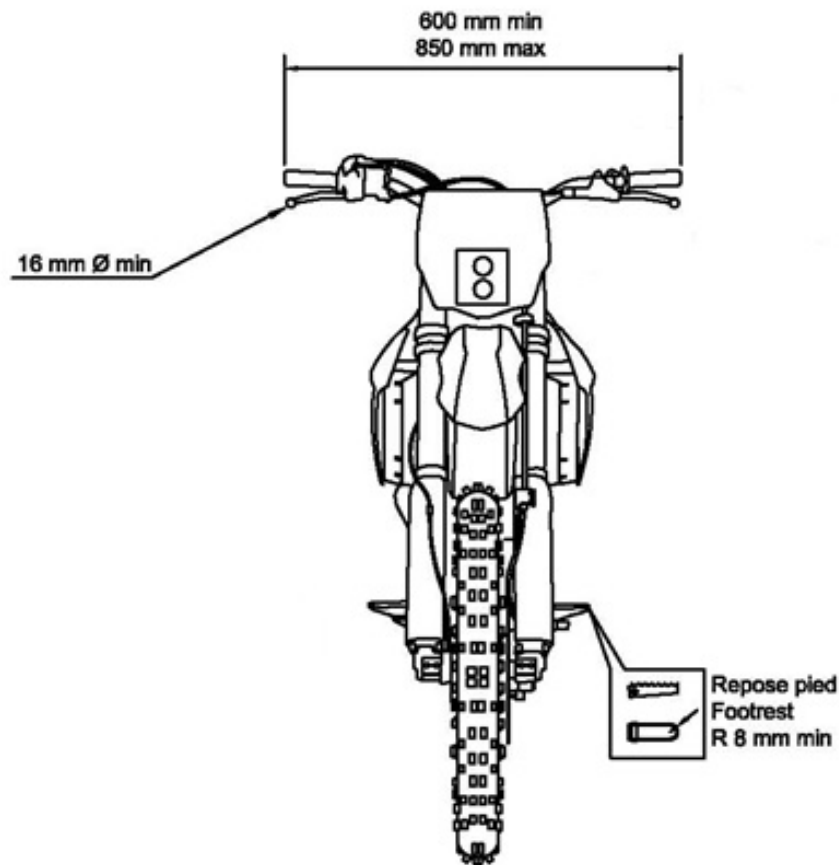


Figure 2

**33.02**

The handlebars must be equipped with a protection pad on the cross bar. Handlebars without a cross member must be equipped with a protection pad located in the middle of the handlebars, covering widely the handlebars clamps.

**33.03**

Handlebar clamps must be very carefully radiused and engineered so as to avoid any fracture points in the handlebar.

**33.04**

Exposed handlebar ends must be plugged with a solid material or rubber covered.

**33.06**

When hand protectors are used, these must be made of a shatter-resistant material and have a permanent opening for the hand.

**33.07**

Handlebars made of composite materials are not authorised.

**33.08**

Repair by welding of light alloy handlebars is prohibited.

**33.09**

Solid stops (when on full-lock, other than steering dampers) must be fitted. These must ensure a minimum clearance of 30 [mm] between the handlebar with levers and the tank to prevent trapping the rider's fingers.

**01.35 CONTROL LEVERS****35.01**

All handlebar levers (clutch, brake, etc.) must be in principle ball ended (diameter of this ball to be at least 16 [mm]). This ball can also be flattened, but in any case, the edges must be rounded (minimum thickness of this flattened part 14 [mm]). These ends must be permanently fixed and form an integral part of the lever. (see Figure 2). If the gear lever consists of a tube, then its edge must be rounded.

**35.03**

Each control lever (hand and foot levers) must be mounted on an independent pivot.

**35.04**

The brake lever if pivoted on the footrest axis must work under all circumstances, such as the footrest being bent or deformed.

**35.05**

Hand -and foot- controls may be modified for mobility challenged riders.

**01.37 THROTTLE CONTROLS****37.01**

Throttle controls must be self-closing when not held by the hand. The throttle operation (opening and closing) shall only be activated by mechanical cable from the twist grip directly attached to the throttle valve. Electronically controlled throttle valves are forbidden. All air intakes into the cylinder must pass through the throttle body. No other means allowing ambient air into the inlet track of the cylinder head are allowed.

**37.02**

Motorcycles must be equipped with a functional ignition kill switch or button mounted on either right or left side of handlebar (within reach of the hand while on the hand grips), that cut the power to the engine.

**01.39 FOOTRESTS**

Footrests must be solidly fixed or of a folding type but in this case must be fitted with a device which automatically returns them to the normal position, and an integral protection is to be provided at the end of the footrest which must have at least 8 [mm] radius (see Figure 2). The footrest teeth shall not be sharp. The height of the footrest teeth must be 10 [mm] maximum.

**01.41 BRAKES****41.01**

All motorcycles must have at least 2 efficient brakes (one on each wheel) operated independently.

**01.43 MUDGUARDS AND WHEEL PROTECTION**

Motorcycles must be fitted with rounded mudguards.

**43.01**

Mudguards must project laterally beyond the tyre on each side.

**43.02**

The front mudguard covered area must respect the angle formed by one line drawn from the front edge of the mudguard to the centre of the wheel and one drawn horizontally through the centre of the wheel must be maximum 60°. (See Figure 3)

**43.03**

The rear mudguard covered area must respect the angle formed by two lines, one drawn from the rear edge of the mudguard to the centre of the wheel and one drawn horizontally through the centre of the wheel shall not exceed 70°. (See Figure 3)

**For SuperEnduro only:**

**It is allowed to use rear mudguards without lights and plate holder - MX appearance (see Art. 01.43 FIM Technical Rules for Motocross).**

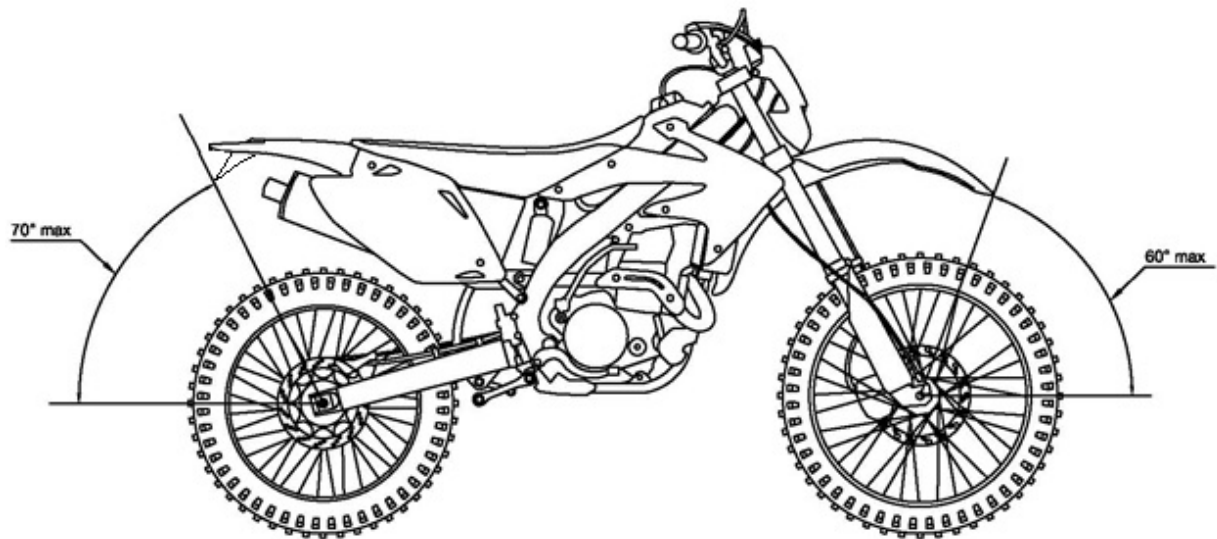


Figure 3

#### **01.45      STREAMLINING**

No type of streamlining is allowed.

Radiator covers (shields) must be made of flexible materials only (e.g. plastics).

#### **01.46      SUSPENSION**

Electronically **or electrically** controlled suspension systems may not be used.

#### **01.47      WHEELS AND RIMS**

##### **47.01**

All tyres will be measured mounted on the rim at a pressure of 1 [kg/sq.cm] (14 [lb./sq.in]); measurements are taken at a tyre section plane with a 90° angle with the ground plane.

##### **47.02**

Any modification to the rim or spokes of an integral wheel (cast, moulded, riveted) as supplied by the manufacturer (other than for rims with spokes, or valve and security bolts) is prohibited, except for tyre retention screws sometimes used to prevent the tyre movement relative to the rim. If the rim is modified for these purposes, bolts, screws, etc., must be fitted.

#### **01.49      TYRES**

##### **49.01      General**

Only tyres normally available from commercial or retail sources are authorised.

Modifying the tyre is not authorised. It is forbidden to treat tyres with chemicals, cut or groove them, use tyre warmers or any other means which may alter the shape, minimum Shore hardness, construction or other characteristics.

The tyres shall appear on the tyre manufacturers range catalogue or tyre specification lists available to the general public.

Any marking on the tyre reporting "FIM" approved or similar is forbidden for new production dates (from 2018). FIM Quality Products are exempt of this rule.

The use of different type of tyres are defined by this table:

	<u>Event</u>			
<u>Tyres</u>	6 Days®	EnduroGP	SuperEnduro	HardEnduro
Enduro	Allowed			
Motocross	Forbidden		Allowed (*)	
Trial	Forbidden			
Tyres with studs	Defined in SR			

(\*) - The use of motocross tyres will be defined in the Supplementary Rules of the event, as long as legal roads are not used as a part of a track.

## 49.02 Enduro Tyres

They shall be approved according to UN Vehicle Regulation 75 Rev. 2 (2010) with the following specific features:

- Category of use (5.2): it shall be "snow" or "special" or "All terrain"
- Speed category symbol (5.4): M (130 Km/h) or above
- Load capacity index (5.5): 45 (165 Kg) or above.

It is recommended that the tyres be used according to the European Tyre and Rim Technical Organisation (ETRTO) guidelines.

The E approval mark and number as defined by the UN Vehicle Regulation R75 must be present on both the front and rear tyre sidewalls.

The DOT approval mark is also accepted.

The rear tyre must present a tread groove with a maximal depth of 13 [mm]. Such a depth must be measured between the "minimum" of the tread groove and a line tangent with the side wall (see Figure 4).

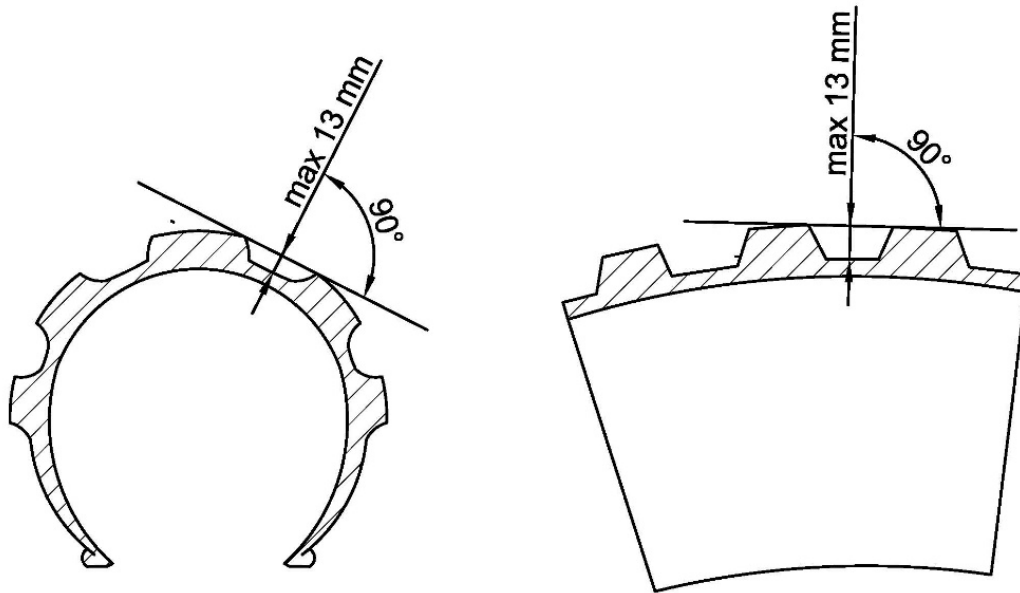


Figure 4

#### **49.03 Motocross Tyres**

Motocross tyres are defined in Art. 01.49 of Technical rules for Motocross.

Only motocross tyres available from commercial tyre retail sources are authorised. These shall appear on the manufacturer's tyre catalogue or tyre specification list available to the general public. See article 49.01

#### **49.04 Trial Tyres**

Trial tyres (Art. 20 of Technical rules for Trial) are strictly forbidden. See article 49.01

#### **49.05 Tyres with studs**

The use of studded tyres will be defined in the Supplementary Rules of the event. See article 49.01

The use of studded tyres shall be approved by the Clerk of the Course/FIM Race Director, based on the state of the course.

Only studded tyres available from commercial tyre retail sources are authorised. These shall appear on the manufacturer's tyre catalogue or tyre specification list available to the general public.

All dimensions of the studs, their number, method of mounting, etc., must be in accordance with the national legislation of the country where the event is held.

Scoop or paddle tyres (continuous radial rib) are forbidden

## **01.50        ADDITIONAL    SPECIFICATIONS    FOR    ELECTRIC    POWERED VEHICLES**

Electric Power Vehicles (EPV) must fulfil all the requirements concerning FIM Electric Regulation. ~~EPV are only eligible in SuperEnduro events.~~ See the full regulations:

[https://www.fim-moto.com/en/documents?tx\\_solr%5Bq%5D=electric+regulation](https://www.fim-moto.com/en/documents?tx_solr%5Bq%5D=electric+regulation)

Concept definition: to be eligible to compete in ~~FIM SuperEnduro World Championship (Prestige class only)~~, with the Internal Combustion Engine (ICE) motorcycles, the electric motorcycles must comply with the EOT/BOP requirements defined by the FIM. This balancing of performances will be based on different parameters such as (but not limited to) the minimum weight of the machine, wheelbase, maximum electric power delivered by the battery.

The FIM reserves the right to update the EOT/BOP at its discretion (and at any time) in the case of an imbalance. In case of dispute, the decision of the FIM Technical Director is final.

Always refer to the latest EOT/BOP published on the FIM website:

[https://www.fim-moto.com/fr/documents?tx\\_solr%5Bq%5D=EOT+BOP](https://www.fim-moto.com/fr/documents?tx_solr%5Bq%5D=EOT+BOP)

## **01.55        NUMBER PLATES**

Number plates are required. ~~for Enduro.~~ They must be fitted as follows.

### **55.03**

Number plates must be made of flexible materials only (e.g. plastic). The shape of the front number plate is free and may be part of the general design of the motorcycle.

### **55.04**

The plates curved not more than 50 [mm] out of a true plane must not be covered or bent.

The following minimum dimensions must be respected:

- |                             |          |
|-----------------------------|----------|
| • Height of the number      | 100 [mm] |
| • Width of each number      | 50 [mm]  |
| • Width of the stroke       | 20 [mm]  |
| • Space between two numbers | 10 [mm]  |

The English form for numbers must be used. That is single vertical line for the "one" and a simple sloping line without a horizontal line for the "seven" (see Diagram O).

Reflecting numbers are forbidden.

The numbers must be clearly legible and like the background, they must be painted in matt colours to avoid reflection from sunlight.

In case of a dispute, the decision of the FIM Technical Director will be final.

#### **55.05 Front number plates**

One plate must be fixed to the front inclined not more than 30° rearwards from the vertical. Holes can not be perforated between the numbers on the number plate. Under no circumstances may the numbers be perforated. See Figure 5

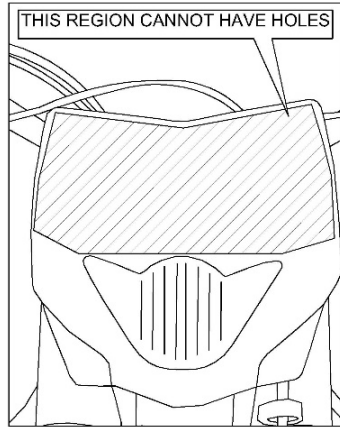


Figure 5

#### **55.06 Side number plates**

The side number plates must be positioned above a horizontal line drawn through the rear wheel spindle and the front edge of the plate must be behind a vertical line drawn at 200 [mm] to the rear of the rider's footrest.

They must be fixed in such a manner as to be clearly visible and they must not be masked by any part of the motorcycle or by the rider when seated in the riding position.

#### **55.07**

In place of separate plates, a space of equivalent size in matt colours can be painted or fixed on the bodywork.

#### **55.09**

All other number plates or markings on a motorcycle liable to cause confusion with the number must be removed before the start of a competition.

#### **55.10**

The figures must be applied to each machine by the organisers during the preliminary examination. The carrying of number plates is obligatory for the 6 Days® Enduro and any rider who retires during the event, must immediately remove them.

In case of a dispute concerning the legibility of numbers, the decision of the Technical Steward will be final.

## **01.56 LIGHTING, WARNING EQUIPMENT AND SPEEDOMETERS**

Motorcycles and their equipment must comply with rules specified in the Supplementary Regulations.

If public roads are used in an event every motorcycle and its equipment must comply with following:

- The electric generator must operate continuously and normally with respect to current and voltage requirements to run front and rear lights during the competition and at post competition control. The electrical connections must be retained.
- A stop light activated by the front or rear brake, as well as a front and rear light, in good working order, are compulsory.
- The registration number of the machine (if applicable) shall be displayed on a plate firmly fixed to the rear mudguard of the machine (not handwritten on the mudguard direct). The number plate or its copy must be made of flexible and non-cutting material and must not exceed the width of the rear mudguard.
- With the engine running all electrical equipment/consumers of electricity simultaneously must be supplied with electricity produced by the generator.

If the event is held only on private land or using officially closed roads the motorcycle requirements will be stipulated in the Supplementary Regulations and every motorcycle and its equipment must comply with following:

- A front light with number plate combined are necessary (enduro appearance).
- The lights must be fitted, but do not have to be operational.

## **58.04 Fuel tank(s)**

**The fuel tank and oil tank must be securely mounted. Add-on sections to the fuel tank are forbidden.**

**Fuel tank(s) attached to the handlebar are strictly forbidden.**

## **01.65 EQUIPMENT AND PROTECTIVE CLOTHING DURING PRACTICE AND RACE**

The FIM cannot be held liable for any injuries that a rider or passenger may sustain from the use of a specific item of equipment or protective clothing.

## **65.01 Clothing and protectors**

It is compulsory that riders wear either a suit or trousers and long-sleeve shirt.

Repaired overalls are acceptable provided that the repair guarantees protection to the same standard as the original garment. The Chief Technical Steward has the right to refuse any temporary repairs which are not deemed to provide the same protection as the original garment.

Any modifications brought to the protectors remove the certification of the equipment and will not be accepted.

If the clothing and/or protectors listed below does not meet the technical requirements or is found to be defective, the Technical Steward must clearly mark in red (e.g. with a red dot) all international marks without destroying them and retain it until the end of the event. The rider must submit another clothing and/or protectors for approval by the Technical Steward. After an accident involving impact, the back and chest protector must be presented to the Technical Steward for examination.

#### **65.01.1 Limb joints protectors**

It is recommended that riders wear limb joint protectors for knees, hips, elbow and shoulders.

The limb joint protectors, if present, should be certified according the International norm:

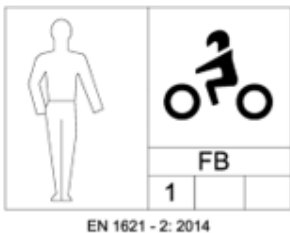
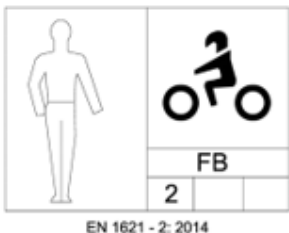
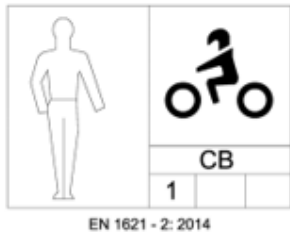
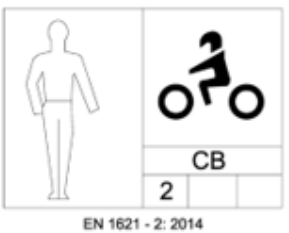


- EN 1621-1, Level 1 or 2

#### **65.01.2 Back protector**

It is compulsory that riders wear a back protector.

The back protector must be certified according the International norm:

- EN 1621-2, Level 1 or 2, only CB (Central Back) or FB (Full Back)

Newer Labels (1621-2:2014)		
Full Back Level 1 or 2	 EN 1621 - 2: 2014	 EN 1621 - 2: 2014
Central Back Level 1 or 2	 EN 1621 - 2: 2014	 EN 1621 - 2: 2014
Older Labels (1621-2:2003)		
Full Back Level 1 or 2	 EN 1621 - 2	 EN 1621 - 2

### 65.01.3 Chest protector



It is compulsory that riders wear a chest protector.

The chest protector must be certified according the International norm:

- EN 1621-3, Level 1 or 2

\*The chest protector according to EN 14021 are forbidden.

**CHEST PROTECTOR: must comply with EN1621-3.**

EN 1621-3 Level 1 or 2	 EN 1621 - 3	 EN 1621 - 3
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**65.02 Footwear**

Footwear, in a good condition, made of leather or other materials having equivalent properties, shall be worn and have a minimum height of 30 [cm].

**65.03 Gloves**

Riders shall wear gloves made of leather or other materials having equivalent properties.

**65.04 Eye protection**

Riders shall wear goggles (in case of an off-road helmet) or a full closed visor (in case of a full face circuit racing helmet). The use of glasses, helmet visors and "roll offs" is also permitted. The use of "tear offs" is forbidden for environmental reasons (valid also for final Motocross test on "6 Days®"). The material used for glasses, goggles and visors must be made of shatter-proof material. Helmet visors must not be an integral part of the helmet.

Eye protectors which cause visual disturbance (e.g. scratched) must not be used.

**01.67 WEARING OF HELMETS**

- It is compulsory for all participants taking part in practice and races to wear a protective helmet. The helmet must be properly fastened, be of a good fit, and be in good condition. The helmet must have a chin strap type 'retention system'.
- A protective lower face cover must be present and must be not detachable, not moveable.
- Helmets constructed with an outer shell made of more than one piece are not permitted (e.g. they must not contain any seam).
- A retention system with a strap and the double D ring closing system is recommended.
- All helmets must be marked with one of the official international standard marks mentioned in Art. 01.70. Any FMN approval marks do not substitute the official international standard marks.
- A helmet is made to provide protection. A helmet is not a platform to attach foreign objects. Cameras or other accessories are NOT permitted nor shall be attached to the rider's helmet.
- Riders with long hair should tie it up in a bun, or braid and tuck it into their shirt or jacket.

Failure to observe the above rules will entail exclusion.

## **01.69 HELMET OPERATIVE INSTRUCTIONS**

### **69.01**

Scrutineers, under the supervision of the Chief Technical Steward, may check prior to practice and the races that all helmets meet the technical requirements.

### **69.02**

If a helmet does not meet the technical requirements or is found to be defective, the Technical Steward must clearly mark in red (e.g. with a red dot) all international marks without destroying them and retain the helmet until the end of the event. The rider must submit another helmet for approval by the Technical Steward.

After an accident involving impact, the helmet must be presented to the Technical Steward for examination (see also Art. 77.02.14).

### **69.03**

All helmets must be intact and no alteration must have been made to their construction.

### **69.04**

The Chief Technical Steward and/or the Technical Steward may perform the following checks before the rider is permitted to take part in practice of the race:

**69.04.1** That the helmet fits well on the rider's head.

**69.04.2** That it is not possible to slip the retention system over the chin, when fully fastened.

**69.04.3** That it is not possible to pull the helmet over the rider's head by pulling it from the back of the helmet.

## **01.70 RECOGNISED HELMET APPROVAL MARKS**

Helmets must conform to one of the recognised international standards:

FIM	FRHPhe-02
EUROPE	ECE 22-05 or ECE 22-06 (only "P" type)
JAPAN	JIS T 8133:2015 (only "Type 2 Full face")
USA	SNELL M 2015 or SNELL M 2020D or SNELL M 2020R or SNELL 2025R or SNELL 2025D

Examples of labels are reported below:



~~As from 01/01/2024, FIM homologated helmets according to the FRHPhe-02 (with a valid FIM homologated label) are strongly recommended, and will be mandatory as from 01/01/2026. All the other standards will be forbidden.~~

A list of FIM Homologated helmets is available on

[https://d.frhp.org/p/public/Public\\_Circuit\\_Helmets\\_Homologated\\_Helmets\\_FRHPhe\\_02\\_Off\\_Road](https://d.frhp.org/p/public/Public_Circuit_Helmets_Homologated_Helmets_FRHPhe_02_Off_Road)

### 01.73 NATIONAL COLOURS FOR HELMETS

In competitions between national teams (6 Days®), it is recommended that the helmet's overall graphics represent the colours of the team's national flag or the colours as mentioned in the table below. The national flag can be replicated in stripes, bands or other patterns.

Andorra	FMA	White with vertical blue, yellow and red bands
Argentina	CAMOD	White with blue horizontal band
Australia	MA	Green and yellow sides, red, white & blue representation of the Australian flag across the top
Austria	OeAMTC	Bright red with a 60 [mm] wide black band and the label of the OeAMTC in a white field on the front side
Belgium	FMB	Yellow
Brazil	CBM	Yellow and green
Bulgaria	BMF	Green and red
Canada	CMA	White and 3 Red Maple leaves, one on front and one on each side
Chile	FMC	Red with blue and white bands and white stars
China	CAMF	Red and yellow
Czech Republic	ACCR	Blue with red, white and blue border
Denmark	DMU	Red and white
Finland	SML	White with blue cross
France	FFM	Blue
Germany	DMSB	White with black border
Great Britain	ACU	Green
Greece	AMOTOE	White with blue border

Hungary	MAMS	Red and green
Ireland	MCUI	Green and orange
Italy	FMI	Red with one green and one white horizontal band
Japan	MFJ	White with red circle on top
Kenya	KMSF	Black, Red, Green, with white bands and the country name KENYA on both sides.
Luxembourg	MUL	Purple
Mexico	FMM	White with green and red border
Monaco	MCM	Blue and white
Netherlands	KNMV	Orange
New Zealand	MNZ	White with black kiwi on front
Norway	NMF	Red and blue
Peru	FPEM	Red with 75 [mm] wide white strips and blue and yellow chequered border
Poland	PZM	White with red band
Portugal	FNM	White
Rumania	FRM	Black with vertical blue, yellow and red bands with national emblem.
Russia	MFR	White with a red border and a vertical red band with star
San Marino	FSM	White with the San Marino National emblem
Slovakia	SMF	Blue, red and white
South Africa	MSA	Black, green, blue and red with yellow and white bands
Spain	RFME	Yellow and red
Sweden	SVEMO	Blue and yellow
Switzerland	Swiss Moto	Red with white cross
Uruguay	FUM	Light blue
USA	AMA	Blue with 2 white bands

In addition, the defending FIM Team World Champion is allowed to wear the rainbow colours on the helmet.

The rider's personal sponsors may be part of the overall graphics or displayed in a separate and dedicated area below the goggles strap (usually horizontal). The helmet model of each of the riders of a team may be different, but the graphics must have a similar visual appearance. See Figure 6

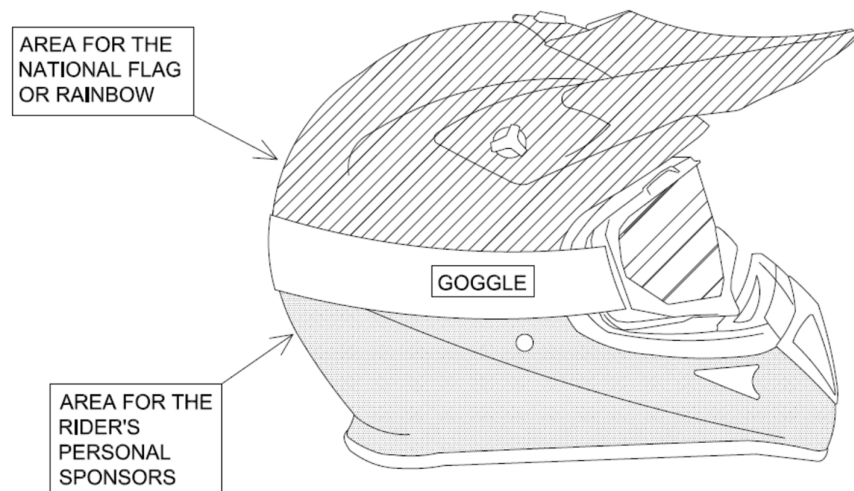


Figure 6

The overall graphics on the helmet must always be approved, in any case, by the FMN of the team.

Whenever a team is using a helmet and there is a case of *force majeure* (e.g. change of rider, broken helmet, etc.), the helmet in question can be replaced by any other helmet, provided that it complies with the FIM Technical Rules for the current year and has been presented to the Technical Stewards of the event.

#### **01.75      BADGE OF THE FIM**

Under certain circumstances the FIM may permit the use of the FIM badge on certain equipment in order to show that the latter conforms to the standards laid down by the FIM. When this authorisation is granted and provided the equipment on which it appears is in good condition, the badge is then the guarantee of the conformity with the standard set by the FIM.

#### **01.76      NUMBER SASHES (BIBS)**

Riders participating in the totality of the FIM World Championship with a permanent starting number must have their name written on the back of their jersey or jacket at the top as well as their starting number.

Riders without a permanent starting number can have their name written on the back of their jersey or jacket at the top, but no starting number will be allowed on a jersey or jacket.

Having a different number on the jersey or jacket from the starting number on the motorcycle is not allowed.

Starting numbers must be in conformity with the following specifications:

**76.02**

The size of the area in which numbers are printed is: 25 x 25 [cm] maximum.

**76.03**

Height of number: 15 [cm].

**76.04**

Width of number: 6 [cm].

**76.05**

Width of stroke: 2 [cm].

**76.06**

Only the space outside the 25 x 25 [cm] area may be used for publicity.

**76.07**

Bibs manufactured from PLASTIC material are not allowed.

**01.77 TECHNICAL VERIFICATIONS****77.01 Preparation**

- Prior to the Technical Verifications, it should be decided who is doing what and note decisions. "Efficiency" must be the watchword. Always keep cheerful and remember the reasons for scrutineering: SAFETY AND FAIRNESS.
- Before the START of the competition, a closed and guarded area (closed parc/parc-fermé) shall be prepared.
- Inspection must take place under cover with a large enough area.
- Inspection area must be supplied with the necessary equipment, including tables, chairs, electric light and power outlet.
- Weighing apparatus must be accurate, practical and have a minimum resolution of 100 [g]. Certified master weights and their certificate must be available for verifying. ~~Only for SuperEnduro events.~~
- The necessary tools are listed below:
  - ✓ Revolution meter
  - ✓ Sound meter, calibrator and spare batteries
  - ✓ Slide calliper (for verifying engine capacity, carburettor diameter, etc.)
  - ✓ Depth gauge

- ✓ Steel measuring tape
  - ✓ Seals
  - ✓ Weighing apparatus (to be furnished by the Organiser) (and set of reference weights) ~~Only for SuperEnduro events.~~
  - ✓ Tools for measuring the engine capacity
  - ✓ Colour for marking parts
  - ✓ Heat resistant stickers or paint for marking the silencer (and solvent)
  - ✓ Magnet
  - ✓ Adequate fuel sample bottles
  - ✓ PC with CD Drive + updated operating system
  - ✓ Printer, etc. are recommended
  - ✓ Calculator
- The necessary documents are listed below:
    - ✓ Supplementary Regulations
    - ✓ FIM Technical Rules - current year
    - ✓ FIM Rules of the discipline concerned
    - ✓ FIM Sporting Code
    - ✓ Writing material
    - ✓ Technical Verifications forms
  - All necessary measures and administrative equipment should be in place at least 1/2 hour before the start of the Technical Verifications is due to open (time in Supplementary Regulations).

## 77.02 Verifications

- The Technical Verifications must be carried out in conformity with the FIM rules, the procedure and times fixed in the CEN Rules and the Supplementary Regulations of the event.
- The Sound control must be carried out first. The Sound level will be recorded in the technical card. The exhaust silencer will be marked with paint or sticker.
- An example of minimum verifications that shall be performed is given below:

INITIAL TECHNICAL VERIFICATIONS	6 Days®	EnduroGP	SuperEnduro	HardEnduro
Sound	✓	✓	✓	✓
Cut-off switch	✓	✓	✓	✓
Self-closing throttle	✓	✓	✓	✓
Lights (front, rear, brake)	✓	✓	-	✓*
Make + model	✓	✓	✓	✓
Race fuel certificate	✓	✓	✓	✓
Vehicle identification plate/chassis number	✓	✓	✓	✓
Crankcase	✓	-	-	✓

Wheels (hubs)	✓	✓	-	-
Registration plate + insurance (green card)	✓	✓	-	✓*
Silencer	✓	✓	✓	✓
Guard for the countershaft sprocket and rear sprocket	✓	✓	✓	✓
Handlebar ends + protection + levers	✓	✓	✓	✓
<b>Weight for EPV</b>	✓	✓	✓	✓
Side stand	✓	✓	optional	optional
Tyres	✓	✓	✓	✓
Helmet(s)	✓	✓	✓	✓
Protective clothing	✓	✓	✓	✓
<b>INITIAL TECHNICAL VERIFICATIONS</b>	<b>6 Days®</b>	<b>EnduroGP</b>	<b>SuperEnduro</b>	<b>HardEnduro</b>

\* not applicable for closed circuits when specified in the Supplementary Regulations

- The Technical Verifications will only be carried out when the Technical Verifications form of the motorcycle has been presented by the rider or his mechanic.
- At the arrival, at the end of the competition, all the marked parts on the motorcycles must be controlled.
- If a motorcycle or a part of a motorcycle has to be verified and completely dismantled, the motorcycle, the part or the group of parts must be sealed and shipped to a place where the required tools are present for a disassembly. The Clerk of the Course/FIM Race Director must take the decision for this operation.
- The disassembly and the verification of the motorcycle or the parts in question must take place in the presence of the Technical Steward, appointed to the event.
- The Organiser will pay the costs for the transportation and for the verification according to Art. 77.02.14 and 77.02.15.
- If a disassembly is required and ordered by the Clerk of the Course/FIM Race Director, following a protest, according to Art. 77.02.14 and 77.02.15, the losing party will incur all the transportation and verification costs, or a part of these costs fixed by the Clerk of the Course/FIM Race Director.

### 77.03 Marking

- At the preliminary examination (details of which will be given in the SR), the following parts will be marked as described below, in such a way as to ensure their identification.

- Paint markings or destructible stickers on wheel hubs, crankcase and silencer must be heat resistant. The parts so marked must be used throughout the whole event and must be found in their proper place at the final examination. The substitution of the original components and disregard of these regulations are strictly forbidden.

Marking parts are restricted to:

	<b>6 Days®</b>	<b>EnduroGP</b>	<b>SuperEnduro</b>	<b>HardEnduro</b>	<b>Note</b>
<b>Frame</b>	✓	✓	✓	✓	Right hand steering head
<b>Wheels (hubs)</b>	✓	✓	-	-	On each hub
<b>Crankcase</b>	✓	-	-	✓	Right or left side
<b>Silencer</b>	✓	✓	✓	✓	On the top
<b>Spare silencers</b>	✓	✓	✓	✓	2 spares silencers are allowed

- Marking is restricted to these parts only and must be done with paint or non-removable (destructible) stickers. The use of a marker pen is forbidden.
- However, the silencer can be changed, if damaged, at any point of the route.
- If a rider retires and requests the restart procedure, the frame only must be the original part marked at the preliminary examination.
- After the marking, riders must confirm his agreement by signing the Technical Verifications Form (Technical Card), which must indicate the frame number. The motorcycles will then be placed immediately in a closed park (Parc Fermé), if applicable.
- The penalty for breach of this regulation is disqualification (or other penalties given as provided for in the FIM Disciplinary and Arbitration Code). As regards silencers, please see relevant discipline article.

#### **77.04 FMNR Chief Technical Steward and technical stewards**

- The Chief Technical Steward must be in attendance at an event one hour before the Technical Verifications are due to begin. He must inform the Clerk of the Course/FIM Race Director and FIM Technical Director, if present, of his arrival.
- The Chief Technical Steward must ensure that all technical stewards appointed for the event carry out their duties in a proper manner. The Chief Technical

Steward shall appoint the technical stewards to individual posts for the race, practices and final control.

- Scrutineers can have different tasks, but the team of scrutineers must have a minimum of four persons. The FMNR Chief Technical Steward must be a holder of an FIM SENIOR Technical Stewards Licence and at least one Technical Steward must hold a FIM Technical Stewards Licence. A minimum number of scrutineers is required according to the following:

- Sound test, silencer marking: two
- Machine inspection, helmet and clothing: two

It is recommended to have 2 up to 4 helpers (staff).

- The Sound Control Officer (SCO) must be holder of a valid FIM Technical Steward's license, come with good knowledge and experience of the sound control and application of the test method. The FMNR may propose the services from a special technician (acoustic engineer) if there is no FIM licenced Technical Steward available to act as SCO.
- After the Technical Verifications has been completed the Chief Technical Steward will submit to the Clerk of the Course/FIM Race Direction a list stating the names of the accepted riders, machines and the sound levels.
- During the event, in the arrival and departure areas, the technical steward must control the repairs and changes made to the machines. He must control that no outside assistance is made. He must also control the condition of the machines.
- At individual time checks or Check points, the technical steward must control repairs and other technical assistance. He must also control that the machines are marked in order to ensure that no change in motorcycle occurred on the course.
- At the arrival, at the end of each day, the technical steward must check all parts and the condition of the machine. A rider is allowed an extra 30 minutes to repair or replace a silencer and/or exhaust pipe only.
- If a motorcycle is involved in an accident, the Technical Steward must check the machine to ensure that no defect of a serious nature has occurred. However, it is the responsibility of the rider to present his machine for this re-examination together with the helmet and clothing worn.
- The Chief Technical Steward has the right to look/ inspect any part of the motorcycle at any time of the event.
- All technical stewards shall be well informed and shall make sure their FMN has supplied them with all technical "updates" that may have been issued subsequent to the printing of the Technical Rules books.

## **77.05 FIM Technical Director**

- The FIM Technical Director is appointed by the Director of the FIM International Technical Commission in consultation with the Director of the FIM Enduro Commission.
- The FIM Technical Director is not responsible for the technical verifications but will ensure that they are carried out in accordance with the FIM Technical Rules.
- The FIM Technical Director works in cooperation with the FIM Race Director and the FIM Delegate.
- The authority and duties of the FIM Technical Director include but are not limited to (Please, also refer to the FIM Technical Rules):
  - a) The FIM Technical Director will report any concerns or deficiencies relating to the technical verifications to the FIM Race Director and FIM Delegate and present proposals to resolve such concerns.
  - b) The FIM Technical Director is the final arbiter in relation to technical issues at the event.
  - c) The FIM Technical Director will examine with the Chief Technical Steward the motorcycle(s) and the protective equipment of any rider(s) involved in serious or fatal accidents and present a written report to the FIM Delegate.
  - d) The FIM Technical Director will attend all meetings of the Race Direction, but without voting rights.

## **77.06 Rider and/or mechanic**

- The rider must present themselves to the Technical Verifications within the limit stated in the Supplementary Regulations.

The maximum number of persons present at the technical verifications except the rider will be the mechanic and/or the Team Manager.

- A rider remains at all times responsible that his machine and his personal protective gear are in conformity with the FIM Technical Rules for Enduro motorcycles.
- The rider must present a clean motorcycle in conformity to the FIM Enduro Technical Rules.
- A rider must present one motorcycle only.
- The rider must present the rider's protective wear (equipment), e.g. helmet and clothing.

- For preliminary inspection rider have to bring one environmental mat and use it in Parc Fermé underneath of motorcycle in order to protect the ground from dropping liquids (oil, chain spray, fuel etc.). If environmental mats are provided by the organiser, this must be written in the Supplementary Regulation.
- Any rider failing to report as required by the provisions below may be excluded from the meeting.
- The Clerk of the Course/FIM Race Director may prohibit any person who does not comply with the rules, or any rider who could be a danger to other participants or to spectators, from taking part in the competitions.

#### **01.78 DANGEROUS MACHINES**

If, during practice or the race, a Technical Steward finds that a machine is defective and might constitute a danger to other riders, he must immediately notify the Clerk of the Course/FIM Race Director or his deputy. It is their duty to exclude such a machine either from the practice or from the race itself.

#### **01.79 SOUND CONTROL**

See Appendix

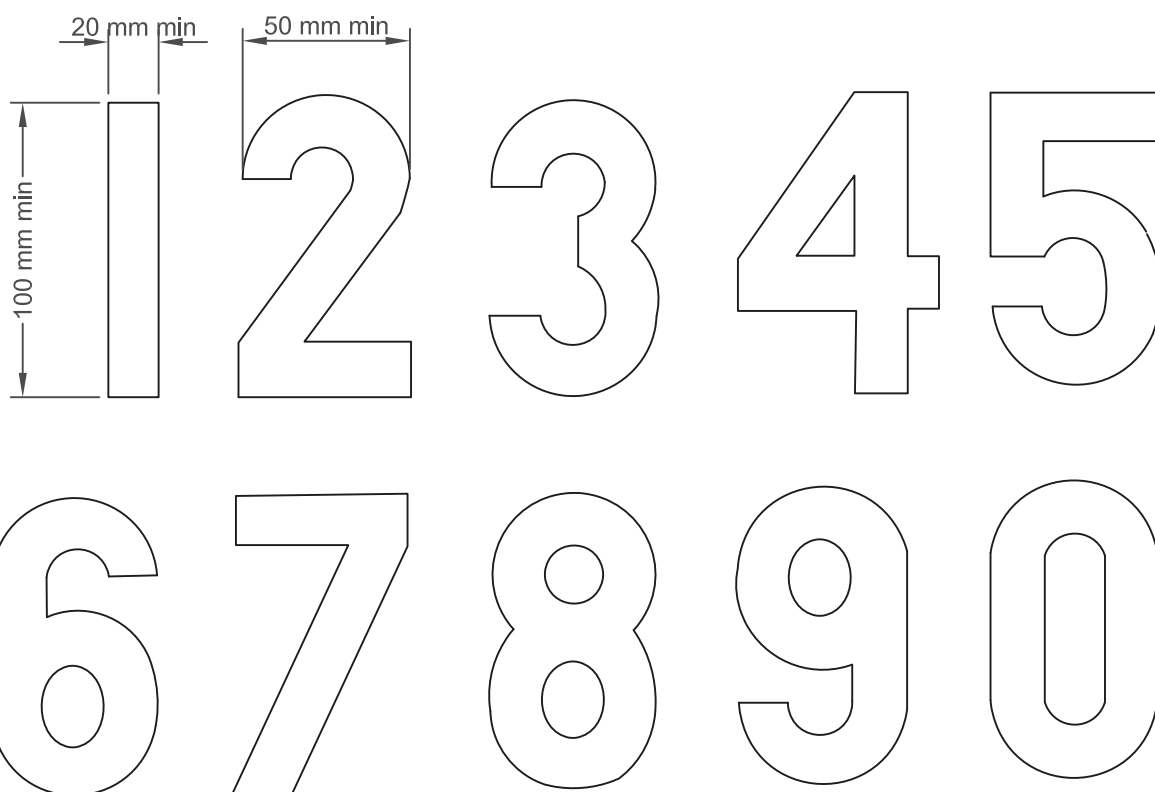
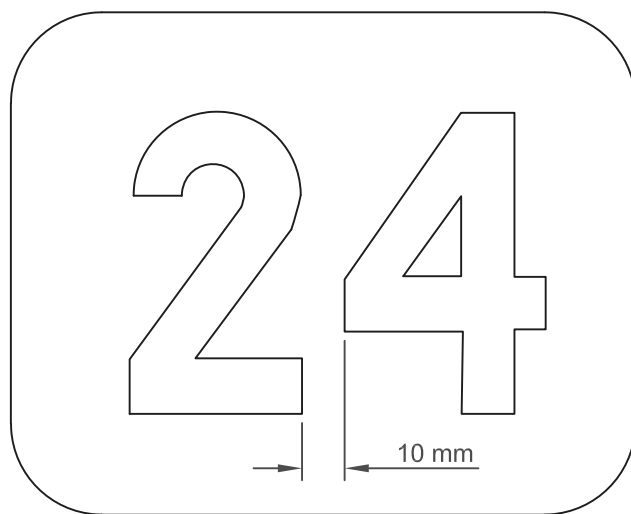
#### **01.80 FUEL REGULATIONS**

See Appendix

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### **Diagrams**

## NUMBERS/NÚMEROS



## **TEN FITTING TESTS FOR HELMETS**

### **DIX TESTS D'ADAPTATION POUR LES CASQUES**

1. *Obtain correct size by measuring the crown of the head*  
Avoir la bonne grandeur en mesurant le sommet de la tête
2. *Check there is no side to side movement*  
Vérifier qu'il n'y ait pas de déplacement d'un cote l'autre
3. *Tighten strap securely*  
Serrer solidement la jugulaire
4. *With head forward, attempt to pull up back of helmet to ensure helmet cannot be removed this way*  
Tête en avant, essayer de soulever le casque pour s'assurer qu'il ne peut pas être enlevé de cette façon



5. *Check ability to see clearly over shoulder*  
Vérifier si vous pouvez voir clairement par-dessus l'épaule
6. *Make sure nothing impedes your breathing in the helmet and never cover your nose or mouth*  
S'assurer que rien ne gêne votre respiration dans le casque et ne jamais couvrir le nez ou la bouche
7. *Never wind scarf around neck so that air is stopped from entering the helmet. Never wear scarf under the retention strap*  
Ne jamais enrouler une écharpe autour du cou, car cela empêche l'air d'entrer dans le casque. Ne jamais porter d'écharpe sous la jugulaire
8. *Ensure that visor can be opened with one gloved hand*  
S'assurer que la visière peut être ouverte avec une main gantée
9. *Satisfy yourself that the back of your helmet is designed to protect your neck*  
S'assurer que l'arrière de votre casque a une forme telle qu'il vous protège la nuque
10. *Always buy the best you can afford*  
Toujours acheter le meilleur que vous pouvez vous offrir



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*FEDERATION INTERNATIONALE  
DE MOTOCYCLISME*

FIM SOUND  
REGULATIONS

2026

# FIM SOUND REGULATIONS

## *Règlement FIM pour le son*

Modifications log		
Updated	Applicable as from	Modified articles
0	01.01.2026	

Articles amended as from 01.01.2026 are in bold type  
Articles amended during the 2026 season are in bold and **red type** or ~~strike~~

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## A. INTRODUCTION

In order to pursue the measures taken to reduce the sound level in favour of environment and in the framework of the 'RIDE QUIET' campaign, a new method for measuring the sound level called "2 metre max" is applied as from 2013 in all 'all-terrain' disciplines.

For the first World Championship event, all competitors' motorcycles will be checked for sound level. After the first event, the motorcycles of a 'wild card-' or 'one event' rider, will be checked for the sound level, as well as any other rider's motorcycle on a random basis. Excessively loud motorcycles must always be checked, regardless of the participants' status.

The technical specifications and the resources to apply such a method, for the use of the technical stewards and officials, are outlined in the present article.

The FIM and the FIM Technical Director and his/her appointed staff cannot be held liable for any potential damages or defects which may occur to the motorcycles or any objects/devices tested as well as to the persons present on site during the FIM Sound control procedure.

The "2 metre max" method shows a very good correlation between the sound power level (L<sub>WA</sub>) issued by motorcycles in full acceleration, and the maximum sound pressure levels measured at proximity of the same motorcycles, with engines at idle and quickly taken to their maximum rotational speeds.

The "2 metre max" method will consist in quantifying not only the sound level produced by the silencer of the exhaust, but the maximum global sound level achieved by the motorcycle when the engine rpm's are raised to the maximum engine speed, limited by a natural regulation (for 2 strokes) or rev limiters (for 4 strokes).

Only the sound levels measured with the "2 meter max" method will be considered by the technical stewards and by the Race Direction/Jury of the event to decide whether the motorcycle is in conformity with the maximum sound levels authorised.

For Motocross disciplines, Enduro/SuperEnduro/HardEnduro, Sand Races, Cross-Country Rallies and Bajas:

Before the opening of the season, the manufacturers must declare to the FIM International Technical Commission (CTI) at [cti@fim.ch](mailto:cti@fim.ch) the maximum power rpm value of the engine of their motorcycles (in standard 'production' specification as sold on the market). The minimum threshold of rpm applied for each class for the sound control procedure will be defined and communicated by the FIM Technical Director.

No modification (in any possible way) of the original RPM channel is allowed. During the sound control, the engine must be able to reach its maximum admissible RPM level (meaning at least the minimum rpm set for each class by the FIM Technical Director according to the information provided by the manufacturers) in Neutral or In Gear position of the gearbox (at the discretion of the Sound Control Officer (SCO)).

The motorcycles fitted with ECU map select switches, all switch positions may be tested.

Furthermore, all systems of dB-Killers must be either the original part delivered by the exhaust manufacturer or made in a safe and professional (well-engineered) way. In case of dispute, the decision of the FIM Technical Director will be final.

## **B. PREPARATION OF THE SOUND METER**

For all FIM championships and prizes, sound level meters must conform to the frequency response tolerance for Class 1 or Class 2 for nominal frequencies between 125Hz to 8000Hz, as stated by the IEC 61672-1:2013 subsection 5.5 standard.

All sound level meters must also conform to the tolerance for Class 1 or Class 2 for amplitude linearity, for its specified class, as stated by the IEC 61672-1:2013 subsection 5.6 standard. IEC 61672 is a regulatory document, which covers specifications and qualification requirements for class 1 and class 2 sound level meters.

Two sets of equipment must be available in case of failure of tachometer, sound level meter or calibrator during technical control.

Sound level measuring equipment must also include:

- a compatible calibrator, which must be used immediately before testing begins and always just prior to a re-test if a disciplinary sanction may be imposed;
- a tachometer.

The sound meter shall be prepared by applying the following procedure:

1. Activate the 'A' weighing
2. FAST time weighting must be activated
3. Select the highest range available (ex. 80~130 [dB])
4. Calibrate the sound meter according to the instructions, taking into account the incidence of the wind foam ball
5. Position the wind foam ball on the microphone
6. Activate the function MAX MIN – set on MAX

## **C. SET UP OF THE MEASUREMENT**

The sound levels will be measured with the microphone fixed on a tripod at a height of 1.35 m above the ground, in horizontal (levelled) position. It is helpful to have the microphone equipped with an extension cable to the sound meter.

For the place and position of the motorcycle, ensure that there are no solid obstacles within 10 m around the microphone.

Depending on the vehicle, the sound meter will be positioned:

**for Solo motorcycles**: at an angle of 45° from the longitudinal axis of the vehicle, on the exhaust side, at a distance of 2 m behind the vehicle (measured from the point where the centre of rear tyre touches the ground).

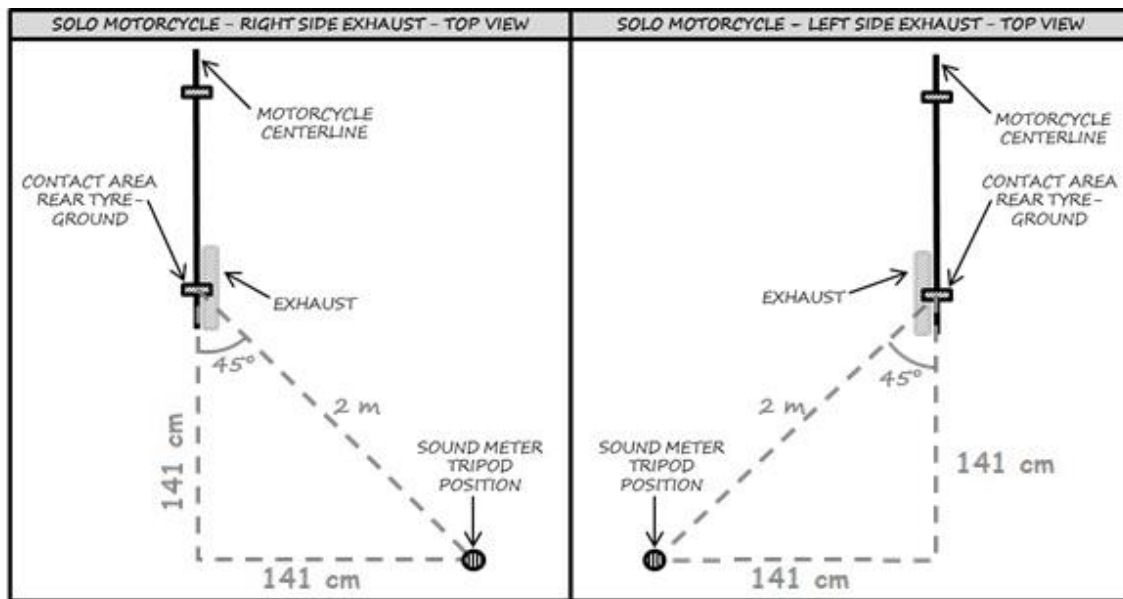


Figure 1 : Sound meter position for solo motorcycle

**for Solo motorcycles with 2 exhaust outputs:** at an angle of 45° from the longitudinal axis of the vehicle, on the side of the air intake, at a distance of 2 m behind the vehicle (measured from the point where the centre of rear tyre touches the ground). Note: if a central positioned air intake is used, both sides will be tested.

**for Snowmobiles:** at an angle of 90° from the longitudinal axis of the vehicle, on the side of the silencer, at a distance of 2 m next to the vehicle (measured from the silencer exit). For continuity of the measurement, use the handlebar as a reference to line up the motorcycle with the microphone - the exhaust pipe is usually located on the right hand side of the motorcycle and directly under the handlebar position. Note: the use of only one silencer is allowed for Snowmobiles.

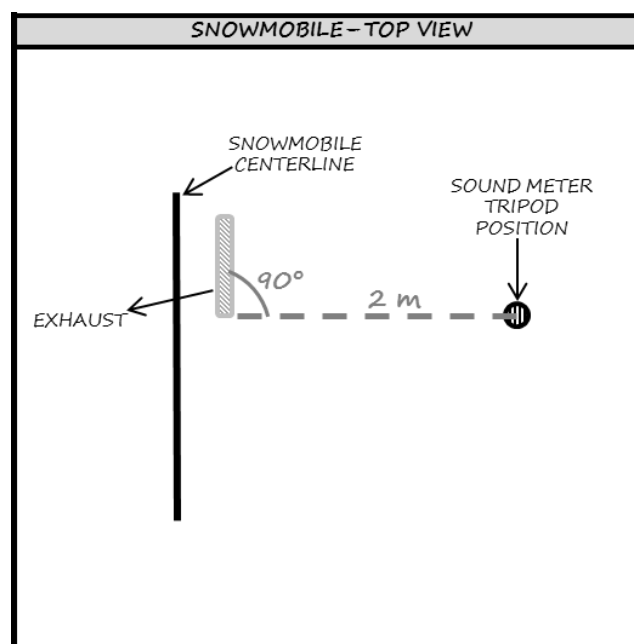


Figure 2: Sound meter position for solo snowmobile

**for Sidecars:** at an angle of  $45^\circ$  from the longitudinal axis of the vehicle, on the sidecar side, at a distance of 2 m behind the vehicle (measured from the point where the sidecar tyre touches the ground). If the exit of the silencer is closer to the motorcycle rear wheel, the reference point will be the contact point of the motorcycle rear wheel on the ground (as for Solo motorcycles).

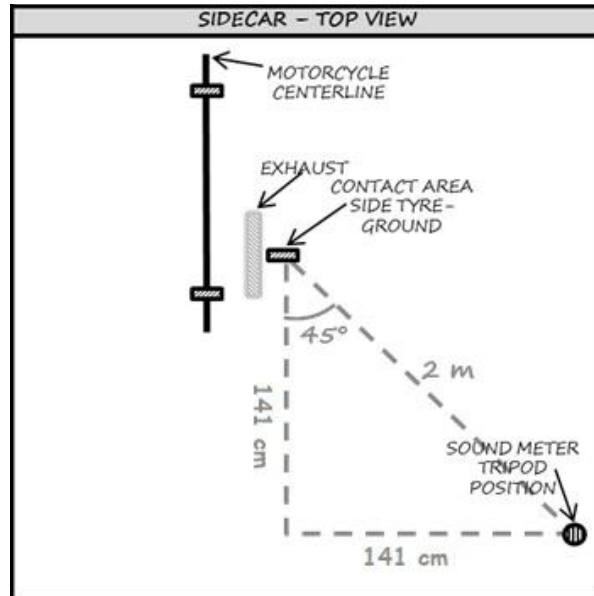


Figure 3: Sound meter position for sidecars

**for Quads:** at an angle of  $45^\circ$  from the median longitudinal axis of the vehicle, at a distance of 2 m behind the vehicle (measured from the point where the line drawn perpendicular to the rear axle touches the ground).

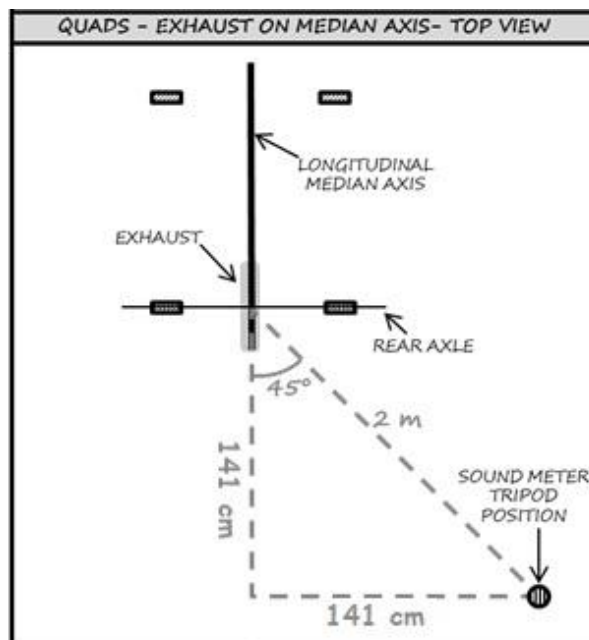


Figure 4: Sound meter position for quads

**for Quads with the exhaust moved out of the median axis:** at an angle of  $45^\circ$  from the rear axle, from where the rear axle and the exhaust meet, at a distance of 2 m behind the vehicle (measured from the point where the line drawn perpendicular to the rear axle touches the ground).

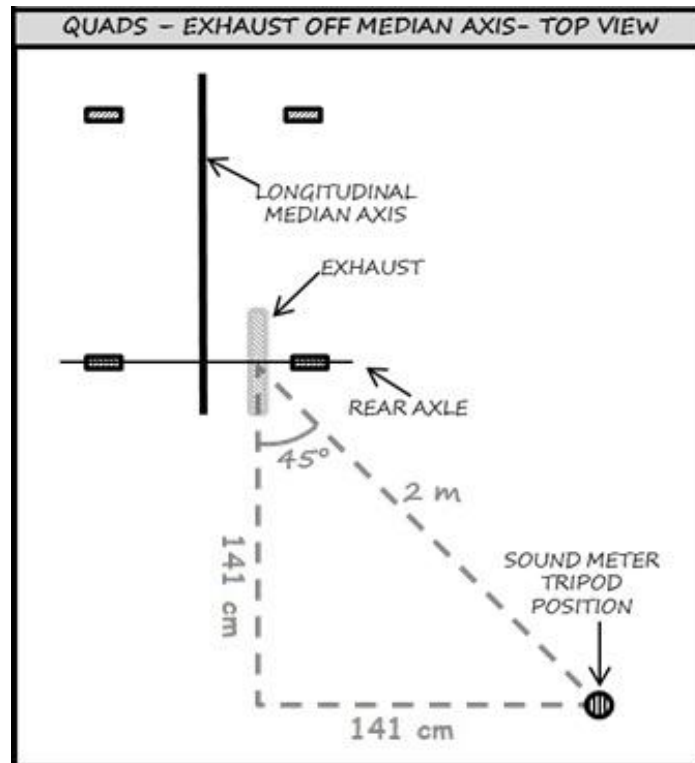


Figure 5: Sound meter position for solo motorcycle with exhaust moved out of the median axis

The sound level for engines with more than one silencer will be measured on each exhaust end.

Silencers fitted with adapters aiming to reduce the sound level shall be permanently fitted.

To make repetitive measurements, all motorcycles can be positioned into a small frame fixed on the ground, making sure to respect the  $45^\circ$  requirements. A squared frame helps the positioning of the motorcycle.

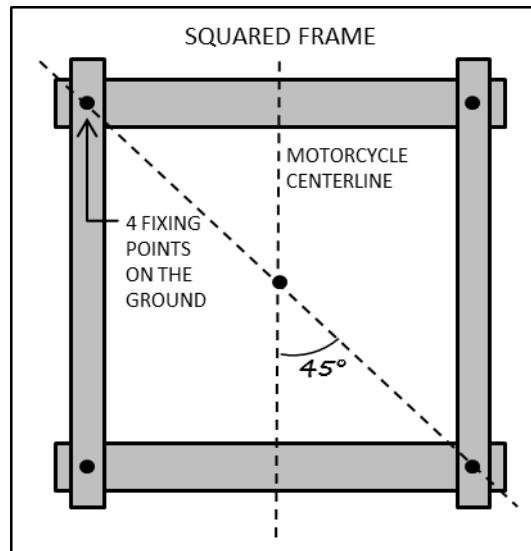


Figure 6 : Squared frame design

Vehicles which are not equipped with a gear box neutral must be placed on a stand.

It is preferred to make the tests on soft ground, not reverberating, i.e. grass or fine gravel.

We strongly recommend to the SCO, when practically possible, to always perform the sound measurements with the wind from backward to forward based on the motorcycle position (in favor of the rider). Please see hereunder:

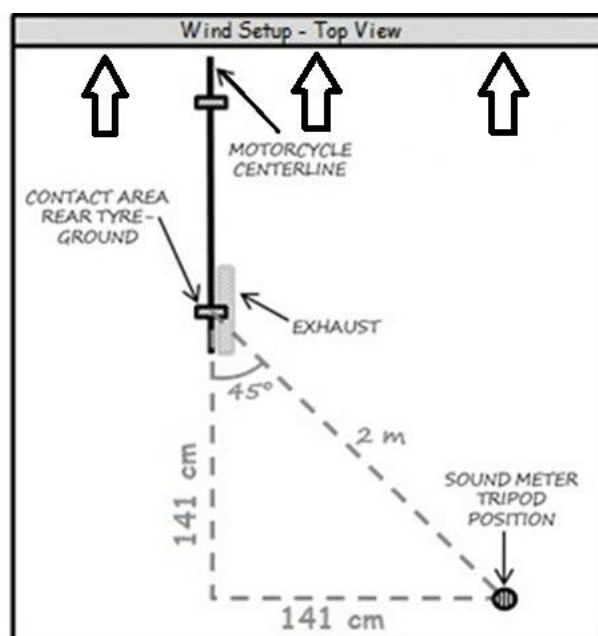


Figure 7 : Setup during windy conditions

The ambient sound at the point of measurement must be minimum 15 [dB/A] less than the lowest FIM sound limit applied in each discipline.

It is recommended to re-calibrate the sound meter before starting measurements and before putting the system away except when there has been any accident (physical

impact to the equipment). In the event of an impact, the sound meter must be systematically re-calibrated before restarting any measurements.

## D. TEST PROCEDURE

The Sound Control Officer (SCO) must be holder of a valid FIM Technical Stewards' license, come with good knowledge and experience of the sound control and application of the test method. The FMNR may propose the services from a special technician (acoustic engineer) if there is no FIM licenced Technical Steward available to act as SCO.

The SCO must have arrived in sufficient time for discussions with the Clerk of the Course/FIM Race Director and other Technical Officials in order that a suitable test site and testing procedure can be agreed.

The SCO (identified as "SCO" on the drawing here under) must be positioned on the right side of the vehicle, between the handlebar and the footrest, managing the throttle grip during the whole sound control procedure. During the sound control procedure, nobody can stand in the grey "prohibited" area between the muffler and the microphone area defined by the following drawing:

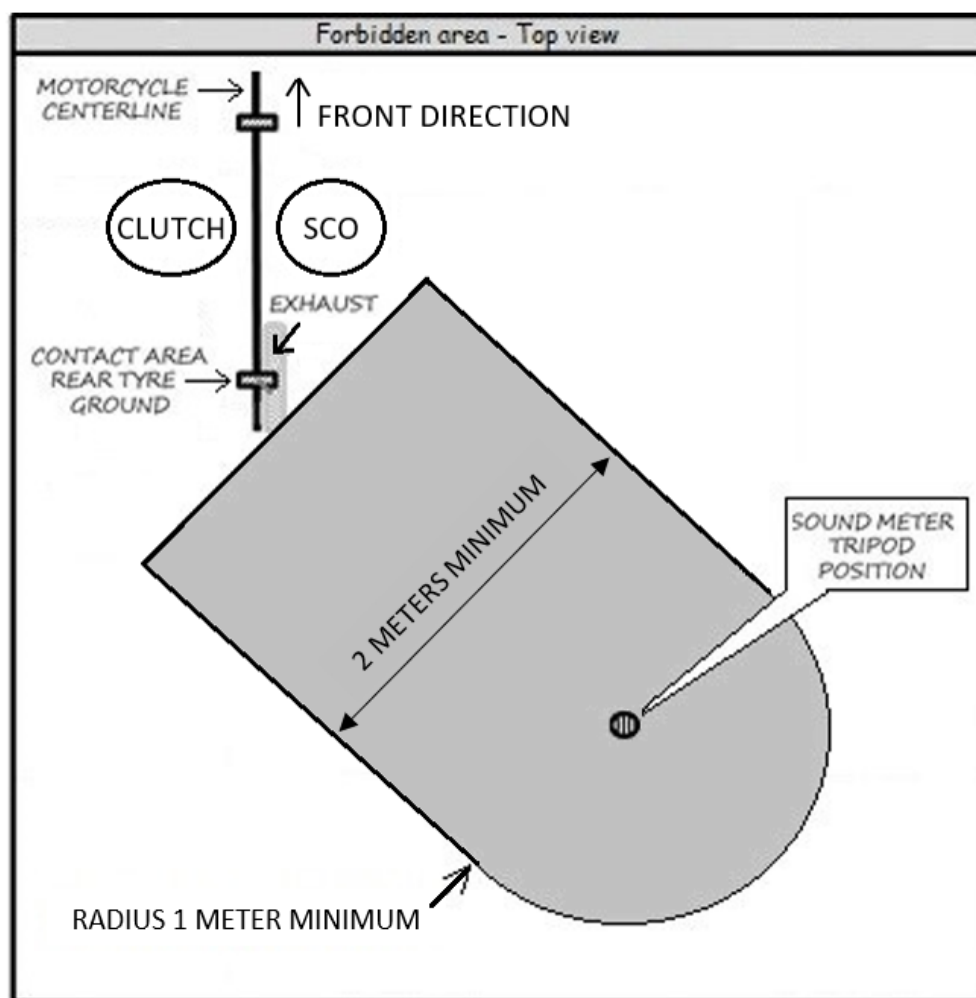


Figure 8 : Prohibited area during the Sound Control

A second technical steward can be present to help. The rider can also be present.

It is strongly advised that the technical steward(s) use earplugs, a headset or ear protectors.

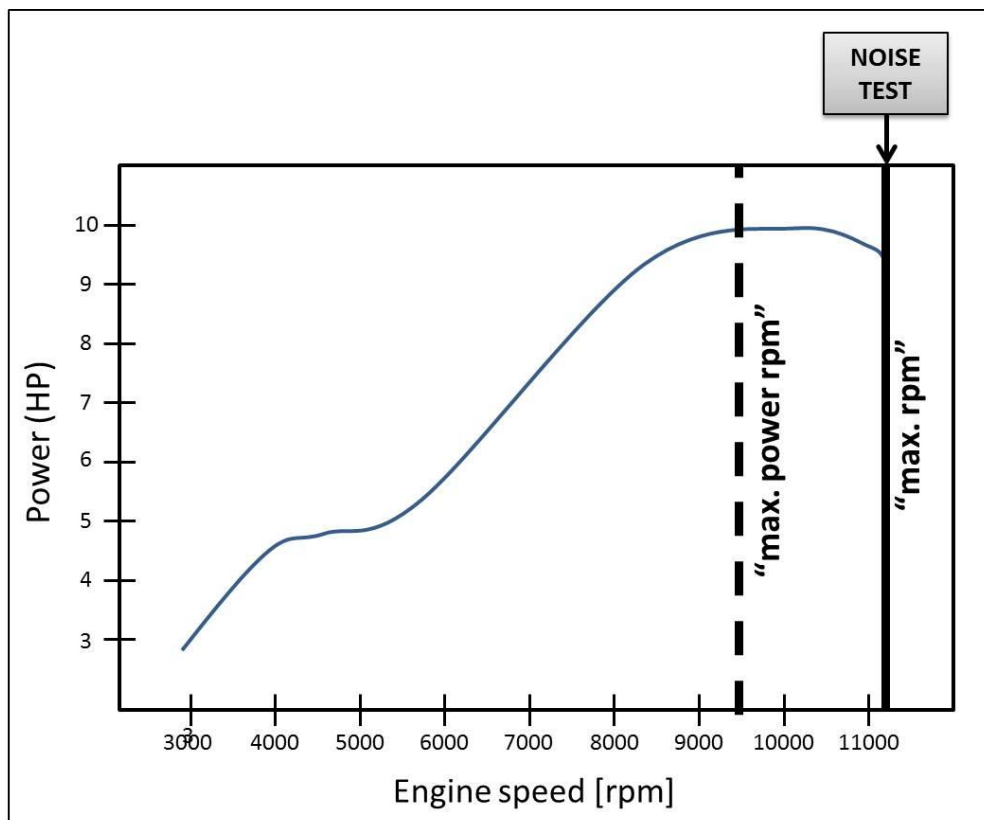
The measurements are made with motorcycle on its wheels, with a hot engine, whatever in neutral gear position or in-gear position (at the discretion of the SCO). During the sound test, only the rider may sit on the vehicle in the normal riding position (at the discretion/decision of the SCO). For safety reasons, we recommend to the SCO to always keep the rear brake pedal under pressure during the sound control procedure.

The CLUTCH: a rider, a mechanic (or a second FIM/FMNR technical steward where compulsory (example: MXGP)) identified as "CLUTCH" on the drawing here above, positioned on the left side of the vehicle, between the handlebar and the footrest, shall disengage the clutch during the whole sound control procedure.

The SCO (and not others) shall open the throttle as fast as possible (instantly, within 0.3 s) until "full open throttle", in order to reach the maximum rpm value ("max. rpm").

**For Motocross, Enduro/SuperEnduro/HardEnduro, Cross-country rallies/Bajas, Sand Races and Track Racing motorcycles with no FIM homologated silencers,** the "max rpm" is the one defined by the ECU (for 4-stroke engines), or by a natural regulation (for 2-stroke engines).

When in doubt, it can be verified that such "max. rpm" value is higher than the rpm value at which the vehicle supplies its maximum power (kW) ("max. power rpm").



**For Trial**, the "max rpm" is established at 10000 ( $\pm 200$ ) rpm and obtained thanks to a dedicated "sound test" mapping of the internal ECU or an external one, purpose-made and connected in occasion of the test.

**For Track Racing with FIM homologated silencers**, when sound tests are needed, the "max rpm" is established at 11000 ( $\pm 500$ ) rpm.

The SCO then keeps the engine at the "max. rpm" value for at least 1 s (or until there is an audible sign of over-revving the engine), during which the measurement is taken.

To conclude the test, the SCO releases the throttle quickly.

The maximum noise value (dB/A) registered during the measurement interval is then read on the sound meter and recorded. This noise value shall not be rounded down to the nearest whole number.

The noise value is then compared with the sound limits (see **Art. E**).

The noise test can be "**PASSED**" or "**NOT PASSED**":

**"PASSED"**: The sound test is considered "passed" if the recorded noise value is below or equal to the sound limits of **Art. E**. The silencer can then be marked by the SCO at the end of the test.

The silencer can be changed after verification under the conditions of technical control.

The end opening of the silencer shall remain unmodified once it has been checked and marked.

**"NOT PASSED"**: The sound test is considered "not passed" if the recorded noise value is above the sound limits of **Art. E**.

In this case, the vehicle (with the same silencer) can be presented again, but for two more tests maximum. If the third test result is negative, the rider can present a different or repaired silencer (in case the sound test was done before the race) will receive a penalty (in case the sound test was done during or after the race).

The sound meter is then reset by pushing on the side-line and armed by pushing on the side-line again.

Sound controls during the event or after the race:

- the motorcycle must be tested in the exact conditions at any time of the event when the FIM Technical Director requests the team/rider for a sound control.
- the motorcycle must be tested in the conditions it has finished the race and has rejoined the parc fermé.

**Notes:**

If the engine starts to misfire, close the throttle slightly and re-open the throttle.  
If detonations appear, the measurement must be started again.

For vehicles without an engine rev. limiter, the throttle will have to be opened not more than 2 s or until there is an audible sign of over-revving the engine.

Even in case a vehicle has not exceeded the respective sound limit, if there is any doubt, the vehicle may be checked again.

If the vehicle is unable to reach the "max. power rpm" value, the vehicle shall be refused. Any attempt by a participant to prevent his engine from reaching the "max. power rpm" will be considered a breach of the rules.

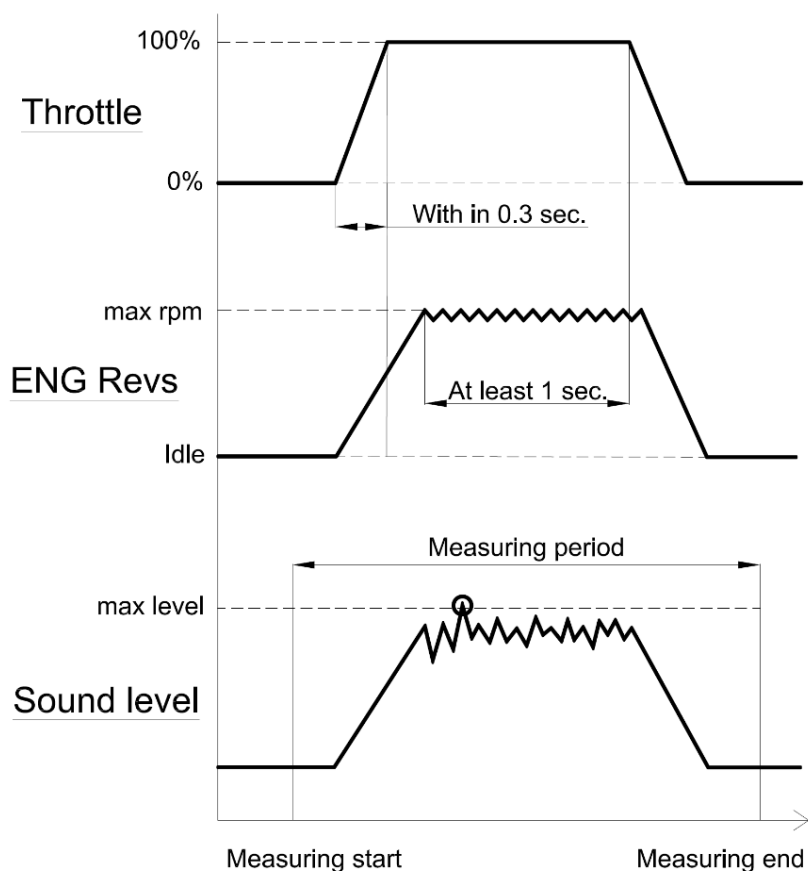
In case the SCO doubts that the "max. power rpm" value (as declared by the manufacturers or previously obtained with the dyno test), he/she shall measure the engine speed with a tachometer connected to the spark.

The motorcycle must maintain at least the minimum RPM during the sound controls. Any motorcycle that is unable to reach and maintain the minimum RPM stated will be refused (applicable with the Race Patrol (/Lite) sound meter from EA LAB (or any other RPM readers)). In case of dispute, the decision of the FIM Technical Director will be final:

Minimum RPM thresholds		
Motocross, Supermoto, RallyGP & Sand Races		
50 cc 65 cc	2T	11500 rpm
65 cc to 85 cc		11500 rpm
100 cc to 125 cc		11000 rpm
175 cc to 300 cc		9000 rpm
85 cc to 150 cc	4T	13500 rpm
175 cc to 250 cc		13500 rpm
290 cc to 350 cc		12000 rpm
450 cc		10800 rpm
Sidecarcross		
	2T	8000 rpm
	4T	9000 rpm
Snowcross		
	2T	8000 rpm
	4T	TBC rpm
Quadcross		
up to 500 cc	2T	9000 rpm
up to 450 cc	4T	10400 rpm
451 - 500 cc	4T	9000 rpm

Enduro. Rally 2, Rally 3		
up to 125 cc	2T	11000 rpm
Over 125 cc		9000 rpm
up to 250 cc	4T	12000 rpm
250 - 350 cc		11000 rpm
350 - 450 cc		10000 rpm
Over 450 cc		9000 rpm
Quads		
TBC		TBC rpm
Trail		
Over 600 cc		TBC rpm
Flat Track		
250 - 500 cc	2T	9000 rpm
250 - 450 cc	4T	10800 rpm

Rain and wet conditions significantly alter the laws under which sound propagates. For the risk of misleading results and unrepeatable conditions, sound testing should not be performed when it is raining or conditions are wet. The decision of the Sound Control Officer and/or FIM technical Director to continue, suspend or stop the sound controls in rainy/wet conditions is final.



1. The Inspector shall open the throttle until full open throttle within 0.3 seconds.
2. And keep at the max rpm (at rpm limiter) at least 1 second. Then, release the throttle quickly.
3. The sound level is measured in the all period and the maximum level shall be recorded in any case. (automatically by the sound meter).

## E. SOUND LIMITS

Below are listed the maximal sound limits by category and by type of engine.

- The values that have to be respected after the race take into account the degradation of the silencer (i.e. the limit is raised of 1 dB/A).
- The values already take into account the accuracy of the method.
- No deductions for ambient temperature, wind, pressure or altitude are allowed.
- The measured noise value shall not be rounded down to the nearest whole number.

### 1. TRIAL World Championships, Cups and Prizes

	Maximum Sound limit in [dB/A]	
Type of engine	Before the race	During or after the race
2-stroke	103.0	104.0
4-stroke	105.0	106.0

Table 1 : Sound limit for Trial

### 2. TRACK RACING World Championships, Cups and Prizes

	Maximum Sound limit in [dB/A]	
Type of engine	Before the race	During or after the race
All	115.0	116.0
2-stroke	(Target 113.0 + 2.0 for the precision of the method)	(Target 115.0 + 1.0 for the degradation of the silencer)
4-stroke		
SGP4	111.0	112.0
4-stroke	(Target 109.0 + 2.0 for the precision of the method)	(Target 111.0 + 1.0 for the degradation of the silencer)

Table 2: Sound limit for Track Racing

### 3. FLAT TRACK World Championships, Cups and Prizes

	Maximum Sound limit in [dB/A]	
Type of engine	Before the race	During or after the race
All	<b>113.0</b>	<b>114.0</b>
2-stroke	(Target <b>111.0</b> + 2.0 for the precision of the method)	(Target <b>113.0</b> + 1.0 for the degradation of the silencer)
4-stroke		

Table 3: Sound limit for Flat Track

### 4. ENDURO, SUPERENDURO, HARDENDURO World Championships, Cups and Prizes

	Maximum Sound limit in [dB/A]	
Type of engine	Before the race	During or after the race
All	111.0	112.0
2-stroke	(Target 109.0 + 2.0 for the precision of the method)	(Target 111.0 + 1.0 for the degradation of the silencer)
4-stroke		

Table 4: Sound limit for Enduro, SuperEnduro, HardEnduro

## 5. SAND RACES World Championships, Cups and Prizes

Type of engine	Maximum Sound limit in [dB/A]	
	Before the race	During or after the race
All 2-stroke 4-stroke	<b>112.0</b> (Target <b>110.0</b> + 2.0 for the precision of the method)	<b>113.0</b> (Target <b>112.0</b> + 1.0 for the degradation of the silencer)
Quads: 2-stroke 4-stroke	<b>112.0</b> (Target <b>110.0</b> + 2.0 for the precision of the method)	<b>113.0</b> (Target <b>112.0</b> + 1.0 for the degradation of the silencer)

Table 5: Sound limit for Sand Races (from 16/02/2026)

### As of 01/01/2027:

Discipline/Class	Maximum Sound limit in [dB/A]	
	Before the race	During or after the race
Quads: 2-stroke 4-stroke	111.0 (Target 109.0 + 2.0 for the precision of the method)	112.0 (Target 111.0 + 1.0 for the degradation of the silencer)

Table 6: Sound limit for Sand Races Quads as from 01/01/2027

## 6. CROSS-COUNTRY RALLIES & BAJAS World Championships and Cups

Type of engine	Maximum Sound limit in [dB/A]	
	Before the race	During or after the race
All 2-stroke 4-stroke	117.0 (Target 115.0 + 2.0 for the precision of the method)	118.0 (Target 117.0 + 1.0 for the degradation of the silencer)

Table 7: Sound limit for Cross-Country Rallies & Bajas

## 7. MOTOCROSS World Championships, Cups and Prizes

Discipline/Class	Maximum Sound limit in [dB/A]	
	Before the race	During or after the race
MXGP, MX2, Women MX: 2-stroke 4-stroke	111.0 (Target 109.0 + 2.0 for the precision of the method)	112.0 (Target 111.0 + 1.0 for the degradation of the silencer)
Supercross (SX): 2-stroke 4-stroke	114.0 (Target 112.0 + 2.0 for the precision of the method)	115.0 (Target 114.0 + 1.0 for the degradation of the silencer)
Sidecarcross: 2-stroke 4-stroke	111.0 (Target 109.0 + 2.0 for the precision of the method)	112.0 (Target 111.0 + 1.0 for the degradation of the silencer)
Junior MX: 2-stroke (65/85) 2-stroke (125) 4-stroke	111.0 (Target 109.0 + 2.0 for the precision of the method)	112.0 (Target 111.0 + 1.0 for the degradation of the silencer)
Supermoto: 2-stroke 4-stroke	111.0 (Target 109.0 + 2.0 for the precision of the method)	112.0 (Target 111.0 + 1.0 for the degradation of the silencer)

Snowcross: 2-stroke 4-stroke	111.0 (Target 109.0 + 2.0 for the precision of the method)	112.0 (Target 111.0 + 1.0 for the degradation of the silencer)
Quadcross: 2-stroke 4-stroke	114.0 (Target 112.0 + 2.0 for the precision of the method)	115.0 (Target 114.0 + 1.0 for the degradation of the silencer)

Table 8: Sound limit for Motocross

**As of 01/01/2027:**

Discipline/Class	Maximum Sound limit in [dB/A]	
	Before the race	During or after the race
Quadcross: 2-stroke 4-stroke	111.0 (Target 109.0 + 2.0 for the precision of the method)	112.0 (Target 111.0 + 1.0 for the degradation of the silencer)

Table 9: Sound limit for Quadcross as from 01/01/2027

- The values that have to be respected after the race take into account the degradation of the silencer (i.e. the limit is raised of 1 dB/A).
- The values already take into account the accuracy of the method.
- No deductions for ambient temperature, wind, pressure or altitude are allowed.
- The measured noise value shall not be rounded down to the nearest whole number.



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*FEDERATION INTERNATIONALE  
DE MOTOCYCLISME*

FIM FUELS  
REGULATIONS

2025



# FIM Fuels Regulations

## *Règlement FIM pour les essences*

Modifications log		
Version	Applicable as from	Modified articles
0	01.01.2025	

Articles amended for the season 2025 are in bold type  
Articles amended since 01.01.2025 are in red and bold type



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## A. INTRODUCTION

### **PLEASE ALWAYS REFER TO THE LATEST FIM REGULATIONS CODE IN FORCE FOR THE DISCIPLINE / COMPETITION (INCLUDING THE SUPPLEMENTARY REGULATIONS)**

All machine(s) must be fuelled with a fuel specification compliant with one of the following FIM Fuel specifications:

- Regular Fuels
- Race Fuels - Category 1
- Race Fuels - Category 2
- Race Fuels - Category 3
- Race Fuels - Category 4

For your reference and complete information, please refer to the last update of the reference documents hereunder:

- FIM FUELS REGULATIONS:

[https://www.fim-moto.com/fr/documents?tx\\_solr%5Bq%5D=fuels+regulations](https://www.fim-moto.com/fr/documents?tx_solr%5Bq%5D=fuels+regulations)

- FIM CERTIFIED FUELS LIST:

[https://www.fim-moto.com/fr/documents?tx\\_solr%5Bq%5D=certified+fuels](https://www.fim-moto.com/fr/documents?tx_solr%5Bq%5D=certified+fuels)

Every team has to declare the fuel specification they will use for the entire official event before the technical verifications (on the FIM Technical Control form). If the team use a race fuel, the team must provide the fuel certificate from the FIM appointed testing laboratory to the FIM Technical Directors.

## **B. REGULAR FUEL**

If not specified in the Technical Rules of the Championships, Cup or Prize or in the Supplementary regulation of the event, regular fuel coming from Public Fuel station can be used.

By regular fuel. It is to be understood fuel available at the fuel station with a fuel gun and with an Octane not more than 98. Local official fuel specification will be taken into account depending on the conformity of a pump station fuel.

## C. RACE FUELS

Fuel companies which supply “race” fuels (fuels other than those obtained at public pump stations) to participating teams/riders must test their fuel at against all the FIM specifications set out in Art. **E, F, G, H** of this regulation.

### **Certified fuels**

If the specifications of the fuel are in conformity to Art. **E, F, G, H** of this regulation, a certificate containing a test report and batch number will be issued to the fuel company.

The fuel company shall be able to provide a copy of such certificate to their client rider/teams before they take part in a race.

If a team and/or rider uses a Race fuel in their vehicle, it is their full responsibility and obligation to inform the FIM Technical Director (or FMN Chief Technical Steward) during the technical verifications and to present the fuel certificate provided from the FIM appointed Laboratory of that racing fuel.

Please refer to the latest list of the FIM certified fuels on the following link:

[https://www.fim-moto.com/en/documents?tx\\_solr%5Bq%5D=certified+fuels](https://www.fim-moto.com/en/documents?tx_solr%5Bq%5D=certified+fuels)

### **Appointed supplier(s) to event(s)**

In the cases in which only fuel from the appointed supplier is permitted (for a specific event or the entire World Championship, Prize or Cup), the aforementioned fuel shall have been previously tested in a FIM appointed laboratory in order to test its conformity with the FIM specifications as set out in Art. **E, F, G, H** of this regulation:

- in case of conformity, a certificate of conformity (including test report and tested batch number) shall be available and Art. **C, K** of this regulation applies in case of controls for the riders/teams;
- in case the conformity is not achieved, the FMN of the organising country/the Organiser/the Promoter shall ask the FIM for a waiver in order to enable the use of fuel not corresponding to FIM specifications. If the waiver is granted, the riders/teams will be responsible for using the fuel provided without changing its composition. Controls may be carried out by FIM.

## **D. TESTING LABORATORY**

For question regarding the “race” fuels and/or the testing of the fuels please contact the aforementioned testing laboratory:

**Intertek (Schweiz) AG**

Analytical Testing - Fuel, Lubricants & Combustible  
Wagistraße 2  
8952 Schlieren  
Switzerland

Telephone: +41 43 433 78 10  
Fax: +41 43 433 78 19  
Email contact: [fimfuels@intertek.com](mailto:fimfuels@intertek.com).

## E. FIM SPECIFICATIONS FOR UNLEADED PETROL, CATEGORY 1

The following fuels specifications are valid for these FIM Competitions (please always refer to the latest regulations code in force for the discipline):

### FIM Circuit Racing Competitions:

- MotoGP™
- Moto2™
- Moto3™
- WorldSBK
- WorldSSP NG
- MiniGP
- Redbull Rookies Cup
- Endurance World Championship and Cup
- Women's World Championship

The following properties shall be within the following thresholds (for each property, the relative test methods to be used for the measurement are indicated):

For MotoGP/Moto2/Moto3: this fuel must be a minimum of 40% of non-fossil origin, increasing to 100% of non-fossil origin from 2027.

<b>Property</b>	<b>Units</b>	<b>Test method</b>	<b>Min.</b>	<b>Max.</b>
<b>Non-fossil components</b>	% (14C/C)	ASTM D6866-22 - Method B - AMS	40.0*	
<b>RON</b>		ISO 5164	95.0	102.0
<b>MON</b>		ISO 5163	85.0	90.0
<b>Oxygen</b>	% (m/m)	ISO 22854		3.7
<b>Benzene</b>	% (v/v)	ISO 22854		1.0
<b>Vapour pressure (DVPE)</b>	kPa	EN 13016-1		90.0
<b>Density at 15°C</b>	kg/m <sup>3</sup>	ASTM D 4052/ EN 12185	720.0	775.0
<b>Oxidation stability</b>	minutes	ASTM D 525/ EN ISO 7536	360	
<b>Existent gum</b>	mg/100ml	EN ISO 6246		5.0
<b>S</b>	mg/kg	ASTM D 5453/ EN ISO 20846		10.0
<b>N</b>	% (m/m)	ASTM D 4629		0.2
<b>Cu corrosion</b>	Rating	ISO 2160		Class1
<b>Distillation at 70°C</b>	% (v/v)	ISO 3405	22.0	50.0
<b>Distillation at 100°C</b>	% (v/v)	ISO 3405	46.0	72.0
<b>Distillation at 150°C</b>	% (v/v)	ISO 3405	75.0	
<b>Final boiling point</b>	°C	ISO 3405		210.0
<b>Residue</b>	% (v/v)	ISO 3405		2.0
<b>Olefins</b>	% (v/v)	ISO 22854		18.0
<b>Bi/Polycyclic olefins</b>	% (m/m)	GCMS		0.01
<b>Total di-olefins</b>	% (m/m)	GCMS/HPLC		1.0
<b>Aromatics</b>	% (v/v)	ISO 22854		35.0
<b>Total HC's containing only H and C and present &lt;5% each</b>	% (m/m)	Gas chromatography	30.0	
<b>Substances capable of exothermic reaction in absence of external O</b>		GCMS		Not permitted**
<b>Oxygenates other than below list</b>	% (m/m)	EN ISO 22854		0.1

<b>Methanol</b>	% (v/v)	ISO 22854	3.0
<b>Mn content</b>	mg/l	ICPOES or ASTM D3831	1.0
<b>Pb content</b>	mg/l	ICPOES or ASTM D3237	5.0
<b>Fe content</b>	mg/l	EN 16136 :2015 or ASTM D5059 – 20	5.0
<b>Ni content</b>	mg/l	EN 16136 :2015 or ASTM D5059 – 20	5.0
<b>Appearance</b>		Visual inspection	Clear and bright

All reported min. and max. thresholds (except for the non-fossil components determination) do not include the tolerance, which needs to be calculated in accordance with ISO 4259 and taken into account to correct the min. and max. thresholds.

#### List of permitted oxygenates:

Methanol, Ethanol, Iso-propyl alcohol, Iso-butyl alcohol, Methyl tertiary butyl ether, Ethyl tertiary butyl ether, Tertiary amyl methyl ether, Di-isopropyl ether, n-Propyl alcohol, Tertiary butyl alcohol, n-Butyl alcohol, Secondary butyl alcohol.

\*As it is guaranteed that all the samples will be analysed by the same laboratory, an absolute measure uncertainty of +/- 0.5% will be taken in account, as per ASTM D6866- 22 - Method B - AMS.

\*\*A limit of detection of 0.01% m/m will be applied.

#### Fuel definitions:

- Paraffins Straight chain and branched alkanes.
- Olefins Straight chain and branched monoolefins and diolefins.
- Monocyclic monoolefins (with five or more carbon atoms in the ring) with or without paraffinic side chains.
- Diolefins Straight chain or branched or monocyclic hydrocarbons (with five or more carbon atoms in any ring) with or without paraffinic side chains, containing two double bonds per molecule.
- Naphthenes Monocyclic alkanes (with five or more carbon atoms in the ring) with or without paraffinic side chains.
- Aromatics Monocyclic and bicyclic aromatic rings with or without paraffinic side chains.
- Oxygenates Organic compounds containing oxygen.
- Additive An additive is a component added to the fuel at low concentration to improve a particular property of the fuel. These include (but are not limited to) antioxidants, antiknock agents, antistatic additives and deposit control additives.
- Metals are defined as alkali metals, alkaline earth metals, transition metals, actinides, lanthanides, post-transition metals and metalloids.

## F.FIM SPECIFICATIONS FOR UNLEADED PETROL OR MIXTURES OF UNLEADED FUELS, CATEGORY 2

The following fuels specifications are valid all FIM Competitions not included in Category 1, Category 3 and Category 4.

The following properties shall be within the following thresholds (for each property, the relative test methods to be used for the measurement are indicated):

Property	Units	Min. <sup>1</sup>	Max.	Test Methods <sup>2</sup>	
Density at 15°C	[kg/m <sup>3</sup> ]	720.0	785.0	EN ISO 12185	ASTM D4052
RON	-	95.0	102.0	EN ISO 5164	ASTM D2699
MON	-	85.0	90.0	EN ISO 5163	ASTM D2700
Oxidation stability	[min]	360		EN ISO 7536	ASTM D525
Vapour pressure (DVPE)	[kPa]		100.0	EN 13016-1	ASTM D5191
Aromatics	% (V/V)		35.0	EN ISO 22854	ASTM D6839
Benzene	% (V/V)		1.0	EN ISO 22854	ASTM D6839 or D5580
Diolefins total	% (m/m)		1.0	GC-MS	HPLC
Lead	[mg/L]		5.0	ICP-OES or-EN 237	AAS
Manganese	[mg/L]		2.0	ICP-OES	AAS
Nitrogen	% (m/m)		0.2	ASTM D 4629	ASTM 5762
Olefins	% (V/V)		18.0	EN ISO 22854	ASTM D6839
Bi/Polycyclic olefins	% (m/m)		0.01	GC-MS	
Oxygen (includes 10% ethanol allowance)	% (m/m)		3.7	EN ISO 22854	EN 13132 or elemental analysis
Sulphur	[mg/kg]		10.0	EN ISO 20846	ASTM D5453
Distillation:				EN ISO 3405	ASTM D86
E at 70°C	% (V/V)	20.0	52.0		
E at 100°C	% (V/V)	46.0	72.0		
E at 150°C	% (V/V)	75.0			
Final Boiling Point	[°C]		210		
Residue	% (V/V)		2.0		
Methanol	% (V/V)		3.0		
Ethanol	% (V/V)		10.0	The only oxygenates permitted are paraffinic mono-alcohols and paraffinic mono-ethers (of 5 or more carbon atoms per molecule) with a final boiling point below 210°C.	
Isopropanol	% (V/V)		12.0		
Isobutanol	% (V/V)		15.0		
tert-Butanol	% (V/V)		15.0		
Ethers (C5 or higher)	% (V/V)		22.0		
Others	% (V/V)		15.0		

Table 1 : Specifications and test methods (does not include the visual inspection)

In addition to these specifications, the appearance of the fuel, controlled by visual inspection must be clear, bright and free from solid matter and undissolved water.

The total of individual hydrocarbon components present at concentrations of less than 5% (m/m) must constitute at least 30% (m/m) of the fuel. The test method will be GC-FID (gas chromatography-flame ionisation detector) and/or GC-MS (gas chromatography-mass spectrometry).

The total concentration of naphthenes, olefins and aromatics classified by carbon number must not exceed the values given in the following table:

<sup>1</sup> All reported min. and max. thresholds do not include the tolerance, which needs to be calculated in accordance with ISO 4259 and taken into account to correct the min. and max. thresholds

<sup>2</sup> In case of dispute the test method listed in **bold** will be the reference



% (m/m)	C4	C5	C6	C7	C8	C9+
Naphthenes	0.1	5.0	10.0	10.0	10.0	10.0
Olefins	5.0	20.0	20.0	15.0	10.0	10.0
Aromatics			1.2	35.0	35.0	30.0

Table 2 : Naphtenes, Olefins and aromatics contents

Bicyclic and polycyclic olefins are not permitted (0.01%(m/m) max). The fuel must contain no substances which are capable of exothermic reaction in absence of external oxygen.



**G. FIM SPECIFICATIONS FOR FULLY ADVANCED SUSTAINABLE FUEL, CATEGORY 3**

In construction through the FIM Eco-Fuels Technical Working Group 2.  
To be announced at a later stage when finalised.



**H.FIM SPECIFICATIONS FOR PARTIALLY ADVANCED SUSTAINABLE FUEL, CATEGORY 4**

In construction through the FIM Eco-Fuels Technical Working Group 2.  
To be announced at a later stage when finalised.



I. FIM SPECIFICATIONS FOR MIXTURES OF UNLEADED FUEL(S) AND LUBRICANT

The lubricant must not:

- 1. change the composition of the fuel fraction when added to the fuel
- 2. contain any nitro-compounds, peroxides or any other engine power boosting additives
- 3. contribute to an improvement in overall performance in any way
- 4. show a reduction in mass by evaporation of more than 10% (m/m) during the distillation up to 250°C (test method: simulated distillation GC)
- 5. contain more than 10% of anti-knock agents (lead, manganese, iron) (test method: ICP-OES).

Moreover, the following specifications are set for the mixture of unleaded fuel(s) and lubricant:

The following properties shall be within the following thresholds (for each property, the relative test methods to be used for the measurement are indicated):

Property	Units	Min.	Max.	Test Methods	
Density at 15°C <sup>3</sup>	[kg/m³]	690	815	EN ISO 12185	ASTM D4052
RON	-		102	EN ISO 5164	ASTM D2699
MON	-		90	EN ISO 5163	ASTM D2700

<sup>3</sup> For the density measurement, the min. and max. thresholds do include the tolerance



**J. OXIDANT - AIR**

Only ambient air may be mixed with the fuel as an oxidant.

## K.FUELS CONTROLS

**Please always refer to the latest regulations code in force for the discipline.**

The FIM may require fuel controls, i.e. controls of the unleaded fuel, mixture of unleaded fuels or mixture of unleaded fuel and lubricant, used by riders/teams at events. These controls involve an initial sampling at the event and further testing.

### 1. Sampling and testing

Samples will be taken at the event either during Parc Fermé procedures, or during the session in the pitlane. The samples will be tested either:

- a) (Only in the case of a single fuel supplier) tested at the event using the GC test method.
- b) Delivered by a FIM courier to the FIM appointed laboratory for post event tests.

### 2. Sampling

#### Procedure A:

FIM fuel sampling for Gas Chromatography (GC) testing method at the event (when available, if not, procedure B applies).

1. The FIM Technical Director (or the FMNR Chief Technical Steward when there is no FIM Technical Director appointed) is the sole official responsible for the sampling management and supervision.
2. Riders/teams selected for fuel controls are directed to proceed with their vehicles to the area that has been designated for this purpose.
3. The FIM Technical Director/FMNR Chief Technical Steward collects the fuel from the motorcycle by using only new sample containers and pipettes/hand pumps.
4. The fuel is transferred through the use of the pipette/hand pump directly from the fuel tank into the vial A (designed for direct use in the GC machine).

During the total duration of this procedure, the motorcycle must remain in the appointed test area.

#### Procedure B:

FIM fuel sampling for the test in a FIM appointed laboratory (if Procedure A is not applicable).

1. The FIM Technical Director (or the FMNR Chief Technical Steward when there is no FIM Technical Director appointed) is the sole official responsible for the sampling management and supervision.
2. Riders/teams selected for fuel controls are directed to proceed with their vehicles to the area that has been designated for this purpose.
3. The FIM Technical Director/FMNR Chief Technical Steward collects the fuel from the motorcycle by using only new sample containers and pipettes/hand pumps.
4. The fuel is transferred through the use of the pipette/hand pump directly from the fuel tank into three containers, denominated A, B and C. The containers are closed and sealed by the FIM Technical Director/FMNR Chief Technical Steward.



5. The FIM Technical Director/FMNR Chief Technical Steward fills in (in all its parts) and signs the Fuel Sample Declaration Form (see forms). The rider or a team representative also signs this Form, after verifying that all the information is correct.
6. The FIM Technical Director/FMNR Chief Technical Steward prepares an appropriate shipping box containing the collected A, B and C samples and a copy of the respective, signed, Fuel Sample Declaration Form. The box is then shipped to the FIM appointed laboratory by courier.

### 3. Testing

#### Procedure A:

FIM fuel testing via Gas Chromatography (GC) testing method on, during, or at the event (when available, if not, Procedure B applies).

1. One or more properties to be checked (following the relevant testing method as per Art. D, E, F, G or H) are set by the FIM for each selected rider/team.
2. The vial A must be put directly in the GC machine for GC test/analysis.
3. The threshold of result to pass the GC test is fixed at 97% of match (compared with the same batch of fuel, provided by the contracted single fuel supplier for the related discipline/championship/Cup).
4. Under 97% of match, the GC test result is failed (meaning the fuel tested is not in conformity with the fuel, provided by the contracted single fuel supplier for the related discipline/championship/Cup).
5. The full Procedure A can be made a second time upon request of the team manager (of the team which fuel is tested). The team manager can attend the full procedure.
6. There will be no protest available, only the option to immediately make a second test.
7. This result will be reported by the FIM Technical Director to the FIM nominated authorities/Officials for the related discipline/championship/Cup (e.g. FIM Stewards Panel, FIM International Jury) which will take appropriate actions.

### Procedure B:

FIM fuel testing via FIM appointed laboratory (if Procedure A not available).

1. One or more properties to be checked (following the relevant testing method as per Art. D, E, F, G or H) are set by the FIM for each selected rider/team.
2. Sample A is the first sample to be tested by the FIM appointed laboratory.
3. Sample B can be used for a second analysis if required by the FIM. The test result of the A or B sample more favourable to the rider/team is taken into account. Costs for the shipping and testing of sample A and B are paid by FIM.
4. As soon as possible after completing the testing, the FIM appointed laboratory reports the test results directly to the responsible CTI Coordinator.
5. For negative cases (i.e. conformity of the tested property(ies) with the specification), the riders/teams concerned will be individually informed by the FIM in due course, copying the rider/team's FMN, the FIM Technical Director/FMNR Chief Technical Steward, the competent authority (e.g. FIM Stewards Panel, FIM International Jury), the CTI Director, the Director and Coordinator(s) of the Sporting Commission concerned.
6. Only for positive cases following testing of sample A or B or A and B (i.e. non-conformity of one or more properties\*), the responsible CTI Coordinator notifies by electronic mail\* the rider/team concerned (including the testing results) and, 24 hours after, forwards the relevant information to the rider/team's FMN, the FIM Technical Director/ FMNR Chief Technical Steward, the competent authority (e.g. FIM Stewards Panel, FIM International Jury), the CTI Director, the Director and Coordinator(s) of the sporting Commission concerned.

\* Note: The non-conformity of one property (except the appearance) is sufficient for declaring non-conformity of the fuel or the mixture.

7. If the rider/team wishes to request a counter-expertise, he must notify the responsible CTI Coordinator by electronic mail\* accordingly, within 72 hours of receipt by the FIM of the delivery status notification pertaining to the notification of the test results to the rider/team.

- If a counter-expertise is requested, the sample dedicated to the counter-expertise is sample C and the test shall aim at checking the same property(ies) previously checked on sample A/B. The rider/team can request that sample C be tested at one of the available FIM appointed laboratories. Costs for shipping and testing of sample C are paid by the rider/team concerned.

Upon notification of the sample C results, the responsible CTI Coordinator notifies by electronic mail\* the rider/team concerned (including the testing results) and forwards the relevant information to the rider/team's FMN, the FIM Technical Director/ FMNR Chief Technical Steward, the competent authority (e.g. FIM Stewards Panel, FIM International Jury), the CTI Director, the Director and Coordinator(s) of the Sporting Commission concerned.

- If no counter-expertise is requested within the time limit, the responsible CTI Coordinator forwards the relevant information by electronic mail\* the rider/team's FMN, the FIM Technical Director/ FMNR Chief Technical Steward, the competent authority (e.g. FIM Stewards Panel, FIM International Jury), the CTI Director, Director and Coordinator(s) of the Sporting Commission concerned.

8. The competent authority of the event concerned (e.g. FIM Stewards Panel, FIM International Jury) makes a decision based on the information received. The Coordinator of the Sporting Commission concerned notifies the rider/team concerned regarding the decision by electronic mail\*.


The non-conformity of :


- A sample (in the cases B sample was not used) or
- B sample (in the cases A sample result was not conclusive) or
- A and B samples or
- A and B and C samples (in the cases B sample was used and a counter- expertise was requested) or

- A and C samples (in the cases B sample was not used and a counter- expertise was requested) automatically results in the disqualification of the rider/team from the entire event.
  - No disqualification will be applied in case of conformity of sample C.
  - Furthermore, in any case, other penalties may be applied.
- 9.** The rider/team has the right to appeal against the decision of competent authority of the event concerned (e.g. FIM Stewards Panel, FIM International Jury) in accordance with FIM Disciplinary and Arbitration Code applicable to the relevant discipline.

\* The receipt of a delivery status notification will be deemed as proof of delivery.

L. FUEL SAMPLE DECLARATION FORM

		<b>FIM Fuel Sample Declaration Form</b>														
Discipline																
IMN (xxx/xx)																
Rider/team's name																
Rider/team's number																
Rider/team's email or telephone number																
Team																
Vehicle's make																
Fuel's make and type																
Fuel origin (public station or race supplier)																
Fuel samples taken on date (dd/mm/yy)																
Fuel samples taken at (right before or after):																
<b>MOTOCROSS</b>	<b>TRIAL</b>	<b>TRACK RACING</b>	<b>ENDURO /ISDE</b>	<b>RALLIES /BAJAS</b>												
Practice <input type="checkbox"/>	Day 1 <input type="checkbox"/>	Heat n°__ <input type="text"/>	Day 1 <input type="checkbox"/>	Day 1 <input type="checkbox"/>												
Qualifying race <input type="checkbox"/>	Day 2 <input type="checkbox"/>		Day 2 <input type="checkbox"/>	Day 2 <input type="checkbox"/>												
Race 1 <input type="checkbox"/>			Day n°__ <input type="checkbox"/>	Day n°__ <input type="checkbox"/>												
Race 2 <input type="checkbox"/>																
<table><tr><td></td><td></td><td><b>Container seal n°</b></td></tr><tr><td><b>Sample A</b></td><td></td><td></td></tr><tr><td><b>Sample B</b></td><td></td><td></td></tr><tr><td><b>Sample C</b></td><td></td><td></td></tr></table>							<b>Container seal n°</b>	<b>Sample A</b>			<b>Sample B</b>			<b>Sample C</b>		
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<b>Sample B</b>																
<b>Sample C</b>																
<p>The above listed details refer to fuel samples taken from the fuel tank of the motorcycle specified.</p> <p><b>Sample A</b> is the first testing sample to be used by the FIM appointed laboratory</p> <p><b>Sample B</b> can be used for a second analysis if required by the FIM</p> <p><b>Sample C</b> is used if a counter-expertise is required by the rider/team.</p> <p>The serial numbers of the vial seals and the accuracy of the listed information have been verified.</p>																
Rider or team responsible name																
Rider or team responsible signature																
FIM Technical Director/ FMNR Chief Technical Steward name																
FIM Technical Director/ FMNR Chief Technical Steward signature																

		<b>FIM Fuel Sample Declaration Form</b>													
Discipline															
IMN (xxx/xx)															
Rider/team's name															
Rider/team's number															
Rider/team's email or telephone number															
Team															
Vehicle's make															
Fuel's make and type															
Fuel origin (public station or race supplier)															
Fuel samples taken on date (dd/mm/yy)															
Fuel samples taken at (right before or after):															
CIRCUIT RACING DISCIPLINES															
Free practice	<input type="checkbox"/>														
Qualifying race	<input type="checkbox"/>														
Warm up	<input type="checkbox"/>														
Race 1	<input type="checkbox"/>														
Race 2	<input type="checkbox"/>														
<table><tr><td></td><td></td><td>Container seal n°</td></tr><tr><td>Sample A</td><td></td><td></td></tr><tr><td>Sample B</td><td></td><td></td></tr><tr><td>Sample C</td><td></td><td></td></tr></table>						Container seal n°	Sample A			Sample B			Sample C		
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Rider or team responsible name															
Rider or team responsible signature															
FIM Technical Director/ FMNR Chief Technical Steward name															
FIM Technical Director/ FMNR Chief Technical Steward signature															



**M. LIST OF FIM CERTIFIED FUELS**

Please refer to the latest list of the FIM certified fuels on the following link:

[https://www.fim-moto.com/en/documents?tx\\_solr%5Bq%5D=certified+fuels](https://www.fim-moto.com/en/documents?tx_solr%5Bq%5D=certified+fuels)



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