

# Safety Equipment For Speed Events

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# Safety Equipment For Speed Events

## **Article 1**

### **1.1 Application of these Regulations**

These regulations are applicable to all vehicles participating in all JMMC sanctioned **Speed Events** with the exception of **Drag Racing** where they may generally only apply to cars running 9.99 seconds or quicker or exceeding 135 mph (217.2 km/h).

### **1.2 Log Books**

All cars entering Speed Events must present for Scrutineering with a valid JMMC Log Book. A recent good quality colour print photograph (not Polaroid) showing the car static, unoccupied and in tyre contact with the ground must be affixed.

Single seat racing cars must be shown side elevation, whilst other categories must show a side front three quarter view to show the side profile and front of the vehicle with the number plate legible for vehicles that requires it.

### **1.3 Dangerous Construction**

A car, the construction of which is deemed to be dangerous, may be excluded by the Stewards of the competition.

## **Article 2**

If a device is optional, it must be fitted in a way that complies with regulations.

## **Article 3      LINES AND PUMPS**

### **3.1 Protection**

Fuel, oil and brake lines must be protected externally against any risk of deterioration (stones, corrosion, mechanical breakage, etc.) and internally against all risks of fire and deterioration.

Application: Optional for Group N if the series production fitting is retained.

Obligatory for all the Groups if the series production fitting is not retained or if the lines pass inside the vehicle and their protective covering has been removed.

In the case of fuel lines, the metal parts which are isolated from the shell of the car by non-conducting parts must be connected to it electrically.

### **3.2 Specifications and installation**

Obligatory application if the series fitting is not retained.

Lines containing cooling water or lubricating oil must be outside the cockpit.

The fittings of fuel lines, lubricating oil lines and of those containing hydraulic fluid under pressure must be manufactured according to the specifications below:

\* When flexible, these lines must have threaded, crimped or self-sealing connectors and an outer braid resistant to abrasion and flame (do not sustain combustion) ;

\* The minimum burst pressure measured at a minimum operating temperature is of:

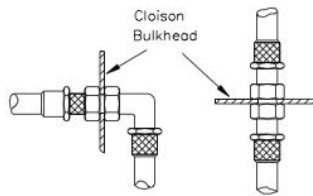
- 70 bar (1000 psi) 135°C (250°F) for the fuel lines (except the connections to the injectors and the cooling radiator on the circuit returning to the tank):

- 70 bar (1000 psi) 232°C (450°F) for the lubricating oil lines.

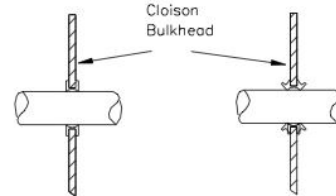
- 280 bar (4000 psi) 232°C (450°F) for the lines containing hydraulic fluid under pressure.

If the operating pressure of the hydraulic system is greater than 140 bar (2000 psi), the burst pressure must be at least double the operating pressure.

Lines containing fuel or hydraulic fluid may pass through the cockpit, but without any connectors inside except on the front and rear bulkheads according to Drawings 253-59 and 253-60, and on the braking circuit and the clutch fluid circuit.



**253-59**



**253-60**

### **3.3 Automatic fuel cut-off**

#### Recommended for all groups:

All fuel feed pipes going to the engine must be provided with automatic cut-off valves located directly on the fuel tank which automatically close all the fuel lines under pressure if one of these lines in the fuel system is fractured or leaks.

#### Compulsory:

All the fuel pumps must only operate when the engine is running, except during the starting process.

### **3.4 Fuel cell ventilation**

The ventilation line of the fuel cell as far as the valves described below must have the same specifications as those of the fuel lines (Article 3.2) and must be fitted with a system complying with the following conditions:

- Gravity activated roll-over valve
- Float chamber ventilation valve
- Blow-off valve with a maximum over pressure of 200 mbar, working when the float chamber ventilation valve is closed.

If the internal diameter of the fuel tank breather venting tube is greater than 20 mm, a non-return valve homologated by the FIA and as defined in Article 253-14.5 must be fitted.

## **Article 4 SAFETY OF BRAKING AND STEERING SYSTEMS**

### **Braking**

Double circuit operated by the same pedal: the pedal must normally control all the wheels; in case of a leakage at any point of the brake system pipes or of any kind of failure in the brake transmission system, the pedal must still control at least two wheels.

Application: If this system is fitted in series production, no modifications are necessary.

### **Steering**

The locking system of the anti-theft steering lock may be rendered inoperative.

The column adjusting system must be locked and must be operated only with tools.

## **Article 5 ADDITIONAL FASTENERS**

At least two additional safety fasteners must be fitted for each of the bonnet and boot lids.

The original locking mechanisms must be rendered inoperative or removed.

Application: Optional for Group N, obligatory for the other Groups.

Large objects carried on board the vehicle (such as the spare wheel, tool-kit, etc.) must be firmly fixed.

## **Article 6 SAFETY BELTS**

### **6.1 Belts**

The use of safety belts in compliance with 8853/98 FIA standard is compulsory.

Furthermore, the belts used in Circuit Races must be equipped with turnbuckle release systems.

For Rallies, two belt cutters must be carried on board at all times. They must be easily accessible for the driver and co-driver when seated with their harnesses fastened.

On the other hand, it is recommended that for competitions which include public road sections, the belts be equipped with push button release systems.

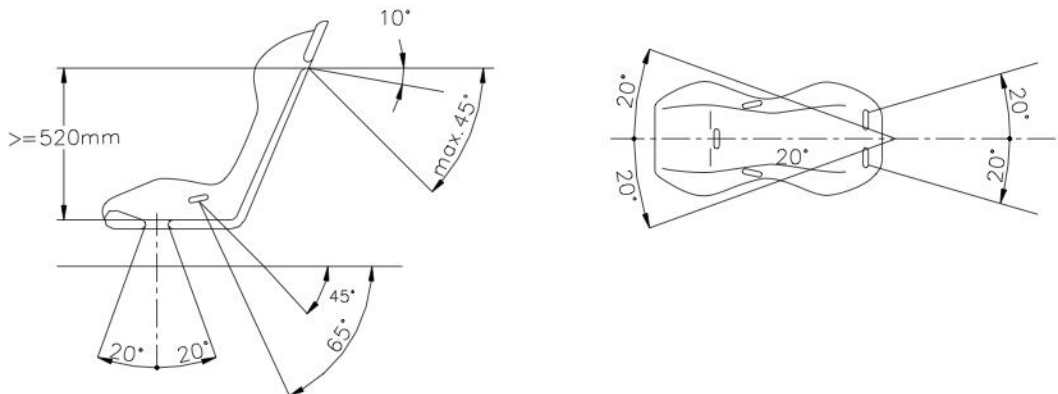
The ASNs may homologate mounting points on the safety cage when this cage is being homologated, on condition that they are tested.

### **6.2 Installation**

It is prohibited for the seat belts to be anchored to the seats or their supports.

A safety harness may be installed on the anchorage points of the series car.

The recommended geometrical locations of the anchorage points are shown in Drawing 253-61.



**253-61**

In the downwards direction, the shoulder straps must be directed towards the rear and must be installed in such a way that they do not make an angle of more than 45° to the horizontal from the upper rim of the backrest, although it is recommended that this angle should not exceed 10°.

The maximum angles in relation to the centre-line of the seat are 20° divergent or convergent (the shoulder straps may be installed crosswise symmetrically about the centre-line of the front seat).

If possible, the anchorage point originally mounted by the car manufacturer on the C-pillar must be used.

Anchorage points creating a higher angle to the horizontal must not be used.

In that case, the shoulder straps may be installed on the rear seat lap strap anchorage points originally mounted by the car manufacturer.

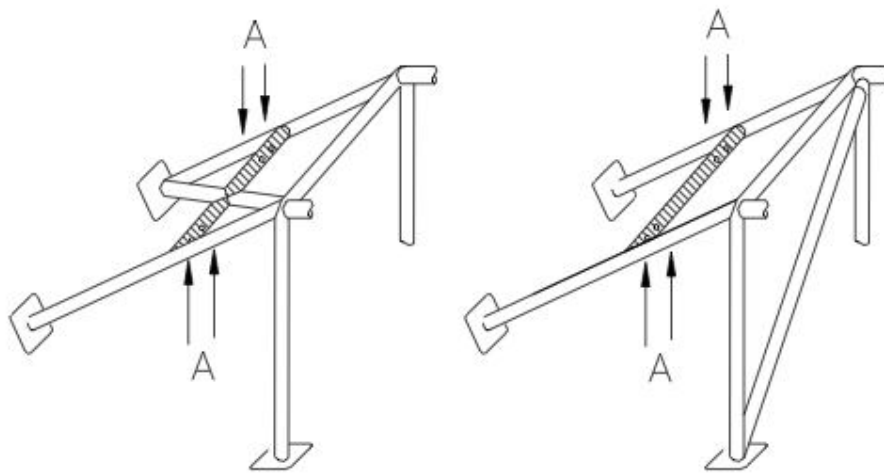
The lap and crotch straps must not pass over the sides of the seat but through the seat, in order to wrap and hold the pelvic region over the greatest possible surface.

The lap straps must fit tightly in the bend between the pelvic crest and the upper thigh. Under no conditions must they be worn over the region of the abdomen.

Care must be taken that the straps cannot be damaged through chafing against sharp edges.

If installation on the series anchorage points is impossible for the shoulder and/or crotch straps, new anchorage points must be installed on the shell or the chassis, as near as possible to the centre-line of the rear wheels for the shoulder straps.

The shoulder straps may also be fixed to the safety cage or to a reinforcement bar by means of a loop, and may also be fixed to the top anchorage points of the rear belts, or be fixed or leaning on a transverse reinforcement welded between the backstays of the cage (see Drawing 253-66) or on transverse tubular reinforcements according to Drawings 253-18, 253-26, 253-27, 253-28 or 253-30.

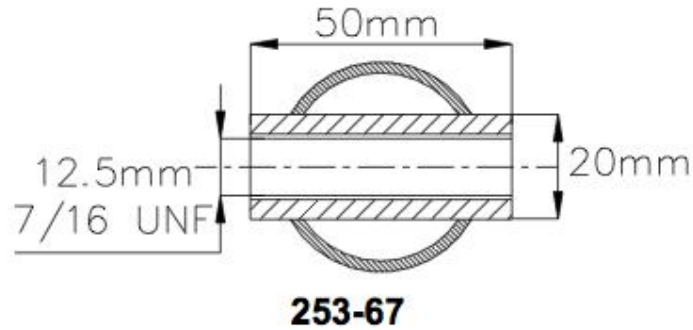


Ⓐ trous de montage pour harnais  
mounting holes for harness

### 253-66

In this case, the use of a transverse reinforcement is subject to the following conditions:

- The transverse reinforcement must be a tube measuring at least 38 mm x 2.5 mm or 40 mm x 2 mm, made from cold drawn seamless carbon steel, with a minimum tensile strength of 350 N/mm<sup>2</sup>.
- The height of this reinforcement must be such that the shoulder straps, towards the rear, are directed downward with an angle of between 10° and 45° to the horizontal from the rim of the backrest, an angle of 10° being recommended.
- The straps may be attached by looping or by screws, but in the latter case an insert must be welded for each mounting point (see Drawing 253-67 for the dimensions).



These inserts must be positioned in the reinforcement tube and the straps must be attached to them using bolts of M12 8.8 or 7/16UNF specification.

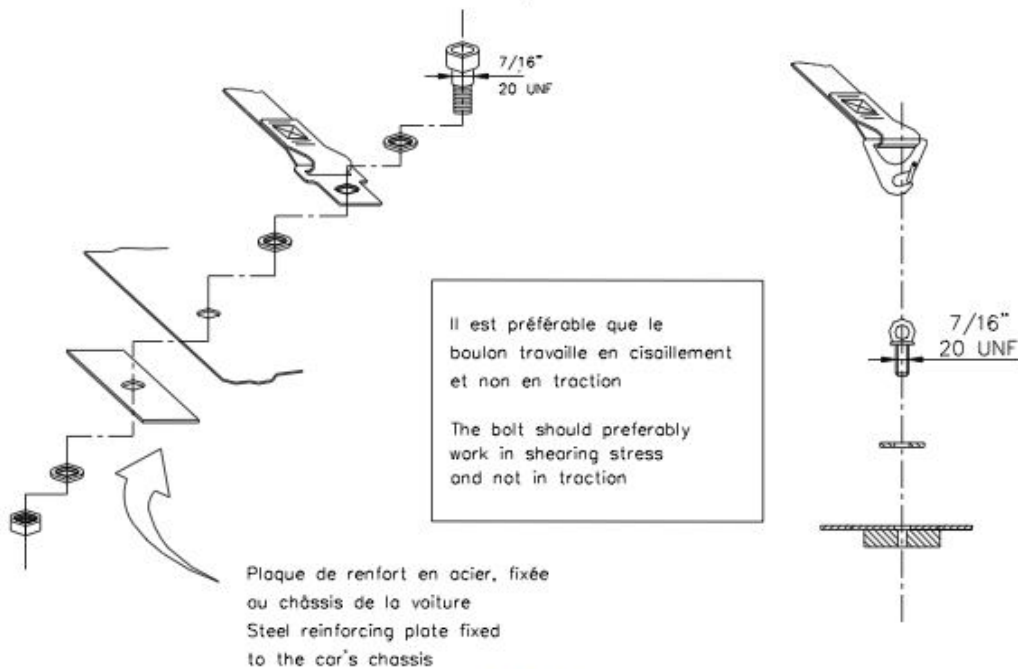
Each anchorage point must be able to withstand a load of 1470 daN, or 720 daN for the crotch straps.

In the case of one anchorage point for two straps (prohibited for shoulder straps), the load considered must be equal to the sum of the required loads.

For each new anchorage point created, a steel reinforcement plate with a surface area of at least 40 cm<sup>2</sup> and a thickness of at least 3 mm must be used.

**Principles of mounting to the chassis / monocoque:**

1) General mounting system: see Drawing 253-62.

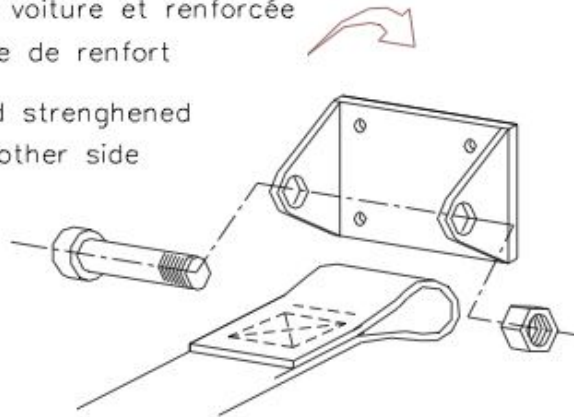


**253-62**

2) Shoulder strap mounting: see Drawing 253-63.

plaque fixée au châssis de la voiture et renforcée  
de l'autre côté par une plaque de renfort

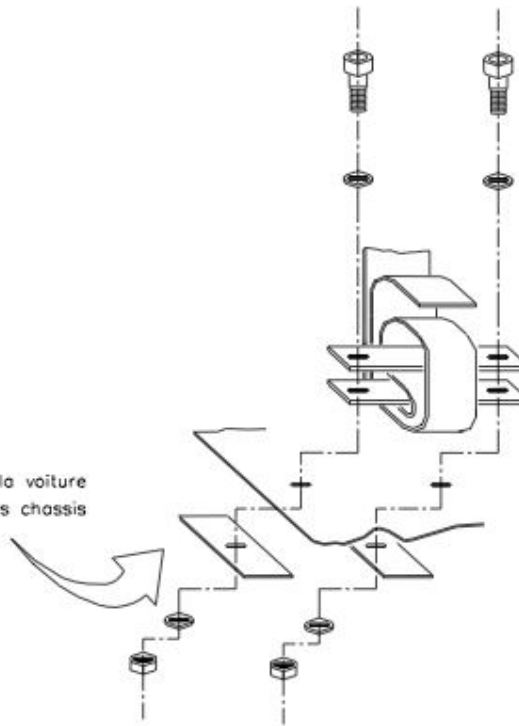
plate fixed to the chassis and strengthened  
by a reinforced plate on the other side



**253-63**

3) Crotch strap mounting: see Drawing 253-64.

plaque de renfort fixée au châssis de la voiture  
reinforcing plate fixed to the car's chassis



**253-64**

### 6.3 Use

A safety harness must be used in its homologation configuration without any modifications or removal of parts, and in conformity with the manufacturer's instructions.

The effectiveness and longevity of safety belts are directly related to the manner in which they are installed, used and maintained.

The belts must be replaced after every severe collision, and whenever the webbing is cut, frayed or weakened due to the actions of chemicals or sunlight.

They must also be replaced if metal parts or buckles are bent, deformed or rusted.  
Any harness which does not function perfectly must be replaced.

## **Article 7     **EXTINGUISHING SYSTEMS****

A fire extinguisher/extinguishing system must be carried on all vehicles, the minimum requirement being that the system be charged with one of the permitted extinguishants and be operable by the driver whilst normally seated either by manual operation or by a mechanically/electrically assisted triggering system.

It is recommended that all extinguishers are serviced in accordance with the manufacturers guidelines, or every 24 months, whichever is sooner.

### **7.1     Application**

#### In rallies:

Articles 7.2 and 7.3 apply.

Extinguishing systems and Manual extinguishers in compliance with FIA Standard 8865-2015 (Technical List n°52) are recommended.

#### In circuit competitions, slaloms, hillclimbs:

Article 7.2 or 7.3 applies.

Extinguishing systems and Manual extinguishers in compliance with FIA Standard 8865-2015 (Technical List n°52) are recommended.

#### Weight checking:

Extinguisher systems should be capable of being dismantled for the purpose of checking the weight of the extinguishant and the integrity of the cylinder, also to enable the operating system to be serviced without discharging the contents.

The tare weight of the unit must be marked on the cylinder.

### **7.2     Systems mounted**

#### **7.2.1**

Cars equipped with an extinguishing system must be in compliance with FIA Standard for plumbed-in Fire Extinguisher Systems in Competition Cars (1999) or with FIA Standard 8865-2015. The approval of the **JMMC CSC** will be required for all other systems.

The system must be used in accordance with the manufacturer's instructions.

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#### **7.2.2**

All extinguisher containers must be adequately protected and must be situated within the cockpit.

The container may also be situated in the luggage compartment on condition that it is at least 300 mm from the outer edges of the bodywork in all horizontal directions.

It must be secured by a minimum of 2 screw-locked metallic straps and the securing system must be able to withstand a deceleration of 25 g.

Anti-torpedo tabs are required.

The material of the securing system must operate within the -15°C to +80°C temperature range.

All extinguishing equipment must withstand fire.

Plastic pipes are prohibited and metal pipes are obligatory (unless specified otherwise).

#### **7.2.3**



The driver (and co-driver where applicable) must be able to trigger the extinguishing system manually when seated normally with his safety belts fastened and the steering wheel in place. Furthermore, a means of triggering from the outside must be combined with the circuit-breaker switch. It must be marked with a letter "E" in red inside a white circle of at least 10 cm diameter with a red edge.

For WRC type cars, the triggering of an external or internal extinguisher must compulsorily bring about engine and battery cut-off.

#### **7.2.4**

The system must work in all positions.

#### **7.2.5**

Extinguisher nozzles must be suitable for the extinguishant and be installed in such a way that they are not directly pointed at the occupants' heads.

#### **7.2.6**

All plumbed-in extinguisher systems must be in an 'ARMED' condition (i.e. be capable of being operated without the removal of any safety device) at all times whilst competing or practising in races or speed events (including during post-event scrutineering), and at all times that crash helmets are worn on rallies (i.e. on Stages etc.).

#### **7.2.7**

Any plumbed-in extinguisher system found to be incapable of being operated will be the subject of a report to the Clerk of the Course/Stewards for possible penalty as an offence against Safety Regulations.

### **7.3 Manual extinguishers**

#### **7.3.1**

Cars fitted with one or two fire extinguishers must be in compliance with Articles 7.3.2 to 7.3.5 hereunder or with FIA Standard 8865-2015 (Articles 7.3.2 to 7.3.5 hereunder do not apply in the latter case).

#### **7.3.2**

Permitted extinguishants: AFFF, FX G-TEC, Viro3, powder or any other extinguishant homologated by the FIA.

#### **7.3.3**

Minimum quantity of extinguishant:

AFFF:	2.4 litres
FX G-TEC:	2.0 kg
Viro3:	2.0 kg
Zero 360	2.0 kg
Powder:	2.0 kg

#### **7.3.4**

All extinguishers must be pressurised according to the contents:

AFFF: in accordance with the manufacturer's instructions

FX G-TEC  
and Viro3: in accordance with the manufacturer's instructions

Zero 360: in accordance with the manufacturer's instructions

Powder: 8 bar minimum, 13.5 bar maximum

Furthermore, each extinguisher when filled with AFFF must be equipped with a means of checking the pressure of the contents.

### 7.3.5

The following information must be visible on each extinguisher:

- capacity
- type of extinguishant
- weight or volume of the extinguishant
- date the extinguisher must be checked, which must be no more than two years after either the date of filling or the date of the last check, or corresponding expiry date.

### 7.3.6

All extinguishers must be adequately protected. Their mountings must be able to withstand a deceleration of 25 g.

Furthermore, only quick-release metal fastenings (two minimum), with metal straps, are accepted. Anti-torpedo tabs are required.

### 7.3.7

The extinguishers must be easily accessible for the driver and the co-driver.

## **Article 8 SAFETY CAGES**

### 8.1 General

The fitting of a safety cage is compulsory with exception of **Drag Racing** where it is only mandatory in the following instances:

**Roll cage is mandatory in cars running 9.99 or quicker or any car exceeding 135 mph (217.2 km/h). In convertibles running 10.99 or quicker or exceeding 135 mph (217.2 km/h), roll cage is mandatory. Cars running between 7.50 and 9.99 must have chassis inspected every three-years by the ASN and have a serialized sticker affixed to cage before participation.**

It may be either :

**a) Fabricated in compliance with the requirements of the following articles ;**

**b) Homologated or Certified by an ASN according to the homologation regulations for safety cages;**

An authentic copy of the homologation document or certificate, approved by the ASN and signed by qualified technicians representing the manufacturer, must be presented to the competition's scrutineers.

Any new cage which is homologated by an ASN and is on sale, as from 01.01.2003, must be identified by means of an identification plate affixed to it by the manufacturer; this identification plate must be neither copied nor moved (i.e. embedded, engraved or self-destroying sticker).

The identification plate must bear the name of the manufacturer, the homologation or certification number of the ASN homologation form or certificate and the individual series number of the manufacturer.

A certificate bearing the same numbers must be carried on board and be presented to the competition's scrutineers.

**c) Homologated by the FIA according to the homologation regulations for safety cages.**

It must be the subject of an extension (VO) to the homologation form of the vehicle homologated by the FIA.

The manufacturer's identification and a series number must be clearly visible on all cages homologated and sold after 01.01.1997.

The homologation form of the cage must specify how and where this information is indicated, and the purchasers must receive a numbered certificate corresponding to this.

For the following cars, the cage must compulsorily be homologated by the FIA :

Super 1600 Kit Variant, Super 2000 Kit Variant, Super 2000, Rally Kit Variant, World Rally Car Variant.

Any modification to a homologated or certified safety cage is forbidden.

To be considered as a modification, any process made to the cage by machining, welding, that involves a permanent modification of the material or the safety cage.

All repairs to a homologated or certified safety cage, damaged after an accident must be carried out by the manufacturer of the rollcage or with his approval.

The chromium plating of all or part of the cage is forbidden.

Tubes of the safety cages must not carry fluids or any other item.

The safety cages must not unduly impede the entry or exit of the driver and co-driver.

Inside the cockpit, the passage of the following elements between the side members of the bodyshell and the safety cage is forbidden :

\* Electric cables

\* Lines carrying fluids (except windscreen washer fluid)

\* Lines of the extinguishing system

Members may intrude into the occupant's space in passing through the dashboard and trim, as well as through the rear seats.

The rear seat may be folded down.

## **8.2 Definitions**

### **8.2.1 Safety cage**

Multi-tubular structure installed in the cockpit and fitted close to the bodyshell, the function of which is to reduce the deformation of the bodyshell (chassis) in case of an impact.

### **8.2.2 Rollbar**

Tubular frame forming a hoop with two mounting feet.

### **8.2.3 Main rollbar (Drawing 253-1)**

Transverse and near-vertical (maximum angle +/-10° to the vertical) single piece tubular hoop located across the vehicle just behind the front seats.

The tube axis must be within one single plane.

### **8.2.4 Front rollbar (Drawing 253-1)**

Similar to main rollbar but its shape follows the windscreen pillars and top screen edge.

### **8.2.5 Lateral rollbar (Drawing 253-2)**

Near-longitudinal and near-vertical single piece tubular hoop located along the right or left side of the vehicle, the front pillar of which follows the windscreen pillar and the rear pillar of which is near-vertical and located just behind the front seats.

The rear pillar must be straight in side view.

### **8.2.6 Lateral half-rollbar (Drawing 253-3)**

Identical to the lateral rollbar but without the rear pillar.

### **8.2.7 Longitudinal member**

Near-longitudinal single piece tube joining the upper parts of the front and main rollbars.

### **8.2. Transverse member**

Near-transverse single piece tube joining the upper parts of the lateral half-rollbars or of the lateral rollbars.

### **8.2.9 Diagonal member**

Transverse tube between :

One of the top corners of the main rollbar, or one of the ends of the transverse member in the case of a lateral rollbar, and a the lower mounting point on the opposite side of the rollbar.

or

The upper end of a backstay and the lower mounting point of the other backstay.

### **8.2.10 Removable members**

Members of a safety cage which must be able to be removed.

### **8.2.11 Cage reinforcement**

Member added to the safety cage to improve its strength.

### **8.2.12 Mounting foot**

Plate welded to the end of a rollbar tube to permit its bolting to the bodyshell/chassis, usually onto a reinforcement plate.

This plate may be welded to the bodyshell/chassis in addition to the bolts.

### **8.2.13 Reinforcement plate**

Metal plate fixed to the bodyshell/chassis under a rollbar mounting foot to better spread the load onto the bodyshell/chassis.

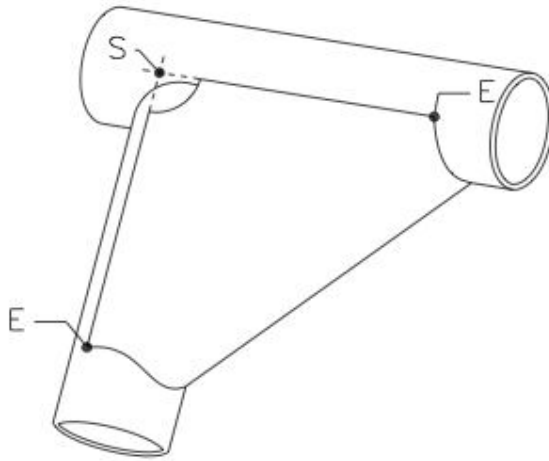
### **8.2.14 Gusset (Drawing 253-34)**

Reinforcement for a bend or junction made from bent sheet metal with a U shape the thickness of which must not be less than 1.0 mm.

The ends of this gusset (point E) must be situated at a distance from the top of the angle (point S) of between 2 to 4 times the outer diameter of the biggest of the tubes joined.

A cut-out is permitted at the top of the angle but its radius (R) must be no greater than 1.5 times the outer diameter of the biggest of the tubes joined.

The flat sides of the gusset may have a hole the diameter of which must not be greater than the outer diameter of the biggest of the tubes joined.



**253-34**

### **8.3 Specifications**

#### **8.3.1 Basic structure**

The basic structure must be made according to one of the following designs:

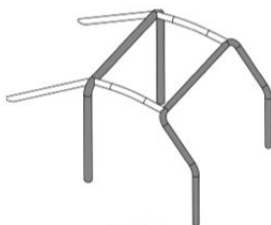
- 1 main rollbar + 1 front rollbar + 2 longitudinal members + 2 backstays + 6 mounting feet (Drawing 253-1)

Or

- 2 lateral rollbars + 2 transverse members + 2 backstays + 6 mounting feet (Drawing 253-2)

Or

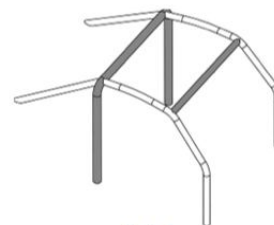
- 1 main rollbar + 2 lateral half-rollbars + 1 transverse member + 2 backstays + 6 mounting feet (Drawing 253-3)



**253-1**



**253-2**



**253-3**

The vertical part of the main rollbar must be as close as possible to the interior contour of the bodyshell and must have only one bend with its lower vertical part.

The front pillar of a front rollbar or of a lateral rollbar must follow the windscreen pillars as closely as possible and have only one bend with its lower vertical part.

In order to build the safety cage, the connections of the transverse members to the lateral rollbars, the connections of the longitudinal members to the front and main rollbars, as well as the connection of a semi-lateral rollbar to the main rollbar must be situated at the roof level.

In all cases, there must not be more than 4 removable connections at the roof level.

The backstays must be attached near the roofline and near the top outer bends of the main rollbar, on both sides of the car, possibly by means of removable connections. They must form an angle of at least 30° with the vertical, must run rearwards and be straight and as close as possible to the interior side panels of the bodyshell.

### 8.3.2 Design

Once the basic structure is defined, it must be completed with compulsory members and reinforcements (see Article 253-8.3.2.1), to which optional members and reinforcements may be added (see Article 253-8.3.2.2).

Unless explicitly permitted and unless dismantlable joints are used in compliance with Article 253-8.3.2.4, all members and tubular reinforcements must be single pieces.

#### 8.3.2.1 Compulsory members and reinforcements

##### 8.3.2.1.1 Diagonal member

Cars homologated before 01.01.2002 :

The cage must have one of the diagonal members defined by Drawings 253-4, 253-5, 253-6. The orientation of the diagonal may be reversed.

In the case of Drawing 253-6, the distance between the two mountings on the bodyshell/chassis must not be greater than 300mm.

Members must be straight and may be removable.

The upper end of the diagonal must join the main rollbar no further than 100 mm from its junction with the backstay, or the backstay no more than 100 mm from its junction with the main rollbar (see Drawing 253-52 for the measurement).

The lower end of the diagonal must join the main rollbar or the backstay no further than 100 mm from the mounting foot (except for the case of Drawing 253-6).

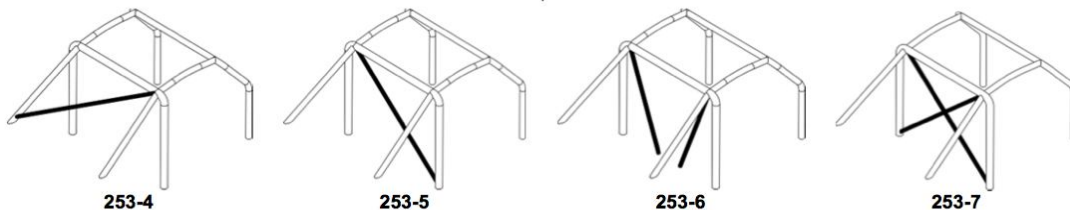
Cars homologated as from 01.01.2002 :

The cage must have two diagonal members on the main rollbar according to Drawing 253-7.

Members must be straight and may be removable.

The lower end of the diagonal must join the main rollbar no further than 100 mm from the mounting foot (see Drawing 253-52 for the measurement).

The upper end of the diagonal must join the main rollbar no further than 100 mm from its junction with the backstay.



##### 8.3.2.1.2 Doorbars

One or more longitudinal members must be fitted at each side of the vehicle according to Drawings 253-8, 253-9, 253-10 and 253-11 (Drawings 253-9, 253-10 and 253-11 for cars homologated as from 01.01.2007).

Drawings may be combined.

The design must be identical on both sides.

They may be removable.

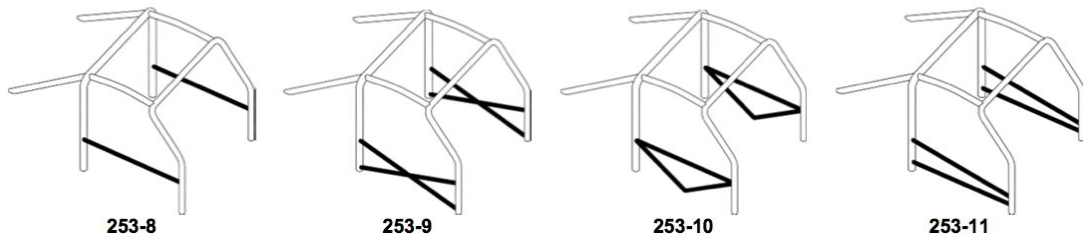
The side protection must be as high as possible, but its upper attachment point must not be higher than half the height of the door opening measured from its base.

If these upper attachment points are located in front of or behind the door opening, this height limitation is also valid for the corresponding intersection of the strut and the door opening.

In the case of doorbars in the form of an "X" (Drawing 253-9), it is recommended that the lower attachment points of the cross-struts be fixed directly onto the longitudinal member of the bodyshell/chassis and that at least one part of the "X" be a single-piece bar.

The connection of the doorbars to the windscreen pillar reinforcement (Drawing 253-15) is authorised.

For competitions without co-driver, members may be fitted on the driver's side only and it is not compulsory for the design to be identical on both sides.



### 8.3.2.1.3 Roof reinforcement

Cars homologated as from 01.01.2005 only :

The upper part of the safety cage must comply with one of Drawings 253-12, 253-13 and 253-14.

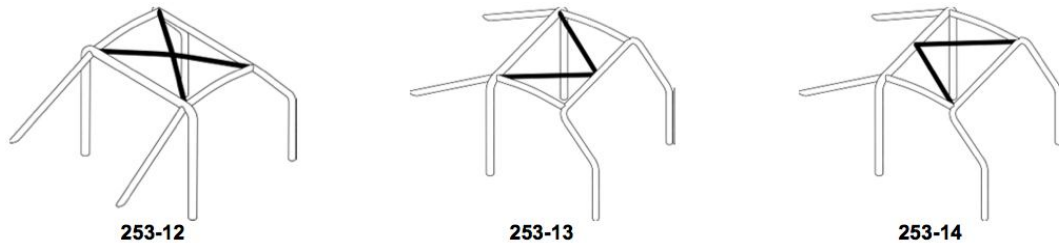
The reinforcements may follow the curve of the roof.

For competitions without co-drivers, in the case of Drawing 253-12 only, only one diagonal member may be fitted but its front connection must be on the driver's side.

The ends of the reinforcements must be less than 100 mm from the junction between rollbars and members (not applicable to the top of the V formed by reinforcements in Drawings 253-13 and 253-14).

Junction of tubes at the top of the V:

If the tubes do not join each other, the distance between them must not be more than 100 mm at their connection with the rollbar or the transverse member.



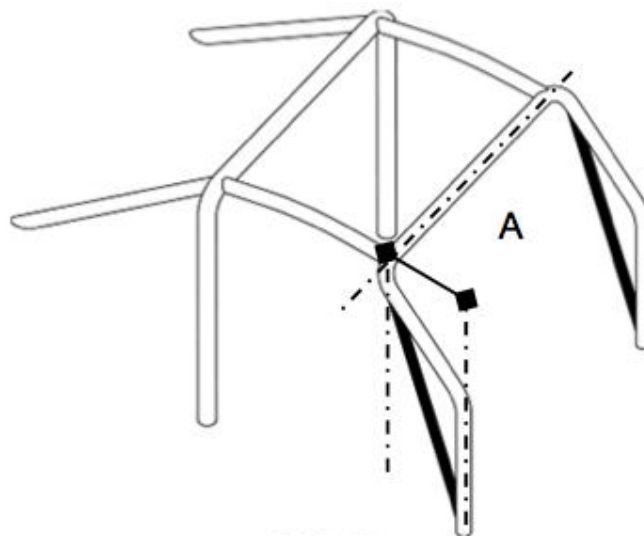
### 8.3.2.1.4 Windscreen pillar reinforcement

Cars homologated as from 01.01.2006 only :

It must be fitted on each side of the front rollbar if dimension "A" is greater than 200 mm (Drawing 253-15).

It may be bent on condition that it is straight in side view and that the angle of the bend does not exceed 20°.

Its upper end must be less than 100 mm from the junction between the front (lateral) rollbar and the longitudinal (transverse) member (see Drawing 253-52 for the measurement).  
Its lower end must be less than 100 mm from the (front) mounting foot of front (lateral) rollbar.



**253-15**

#### **8.3.2.1.5 Reinforcement of bends and junctions**

The junctions between:

- the diagonal members of the main rollbar,
  - the roof reinforcements (configuration of Drawing 253-12 and only for cars homologated as from 01.01.2007),
  - the doorbars (configuration of Drawing 253-9),
  - the doorbars and the windscreen pillar reinforcement (Drawing 253-15),
- must be reinforced by a minimum of 2 gussets complying with Article 253-8.2.14.

If the doorbars and the windscreen pillar reinforcement are not situated in the same plane, the reinforcement may be made of fabricated sheet metal, provided it complies with dimensions in Article 253-8.2.14.

#### **8.3.2.2 Optional members and reinforcements**

Except other indications given in Article 253-8.3.2.1, members and reinforcements shown in Drawings 253-12 to 253-21 and 253-23 to 253-33 are optional and may be installed as desired by the constructor.

They must be either welded or installed by means of dismantable joints.

All members and reinforcements mentioned above may be used separately or combined with one another.

#### **8.3.2.2.1 Roof reinforcement (Drawings 253-12 to 253-14)**

Optional only for cars homologated before 01.01.2005.

For competitions without co-drivers, in the case of Drawing 253-12 only, one diagonal member only may be fitted but its front connection must be on the driver's side.

#### **8.3.2.2.2 Windscreen pillar reinforcement (Drawing 253-15)**

Optional only for cars homologated before 01.01.2006.



It may be bent on condition that it is straight in side view and that the angle of the bend does not exceed 20°.

#### **8.3.2.2.3 Backstay diagonals (Drawing 253-21)**

The configuration of Drawing 253-21 may be replaced with that of Drawing 253-22 if a roof reinforcement complying with Drawing 253-14 is used.

For cars homologated as from 01.01.2014 :

The configuration of Drawing 253-22 is compulsory if a roof reinforcement complying with Drawing 253-14 is used.

#### **8.3.2.2.4 Front suspension mounting points (Drawing 253-25)**

The extensions must be connected to the front suspension top mounting points.

#### **8.3.2.2.5 Transverse members (Drawings 253-26 to 253-30)**

Transverse members fitted on the main rollbar or between the backstays may be used for the safety harness mountings in accordance with Article 253-6.2 (use of dismountable joints prohibited).

For members shown on Drawings 253-26 and 253-27, the angle between the central leg and the vertical must be at least 30°.

The transverse member fixed to the front rollbar must not encroach upon the space reserved for the occupants. It may be placed as high as possible but its lower edge must not be higher than the uppermost point of the dashboard.

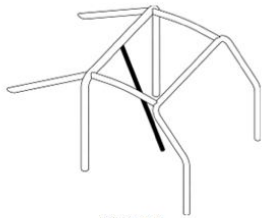
For cars homologated as from 01.01.2007, it must not be positioned below the steering column.

#### **8.3.2.2.6 Reinforcement of bends or junctions (Drawings 253-31 to 253-34)**

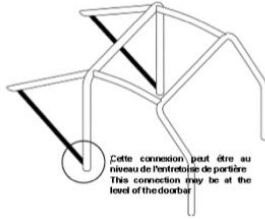
Reinforcements must be made of tubes or bent-sheet metal with U shape complying with Article 253-8.2.14.

The thickness of the components forming a reinforcement must not be less than 1.0 mm.

The ends of the tubular reinforcements must not be more than half way down or along the members to which they are attached, except for those of the junction of the front rollbar, which may join the junction of the door strut/front rollbar.



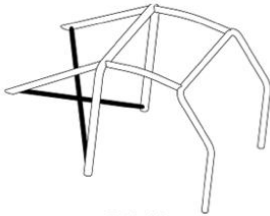
253-16



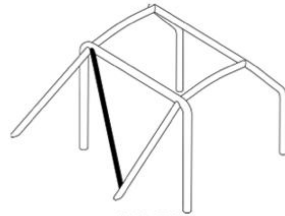
253-17



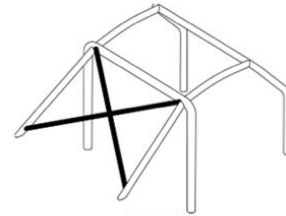
253-18



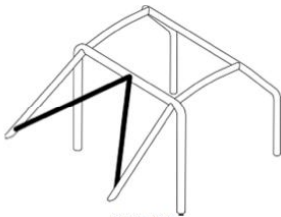
253-19



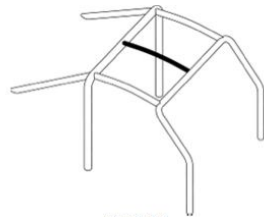
253-20



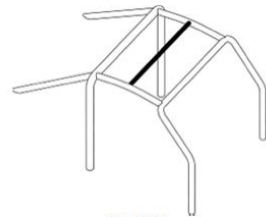
253-21



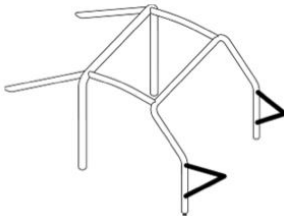
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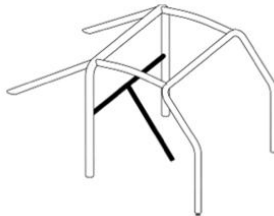
253-23



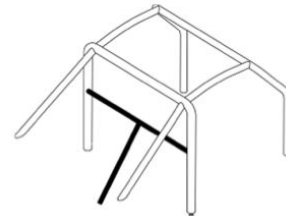
253-24



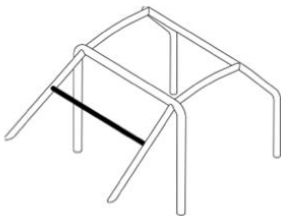
253-25



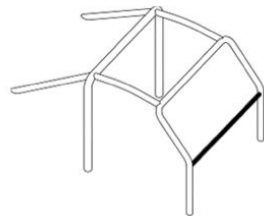
253-26



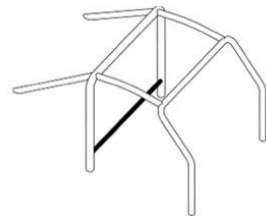
253-27



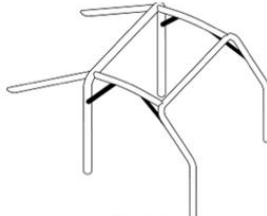
253-28



253-29



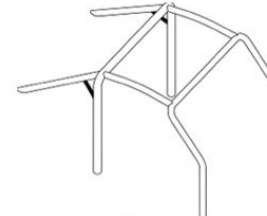
253-30



253-31



253-32



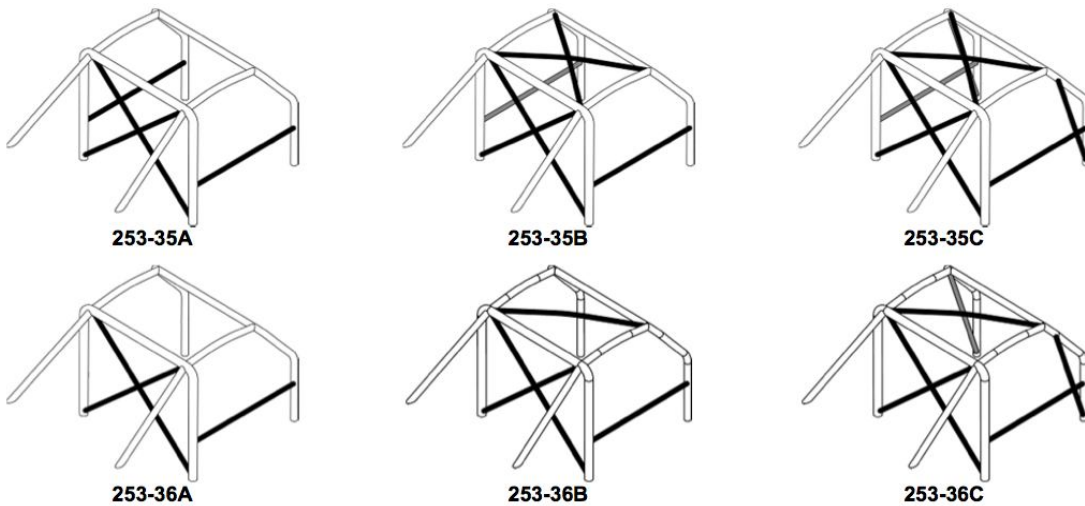
253-33

**8.3.2.3 Minimum configuration of the safety cage**

The minimum configuration of a safety cage is defined as follows :

<b>Cars homologated</b>	<b>With co-driver</b>	<b>Without co-driver</b>
between 01.01.2002 and 31.12.2004	Drawing 253-35A	Drawing 253-36A or symmetrical
between 01.01.2005 and 31.12.2005	Drawing 253-35B	Drawing 253-36B or symmetrical
as from 01.01.2006	Drawing 253-35C	Drawing 253-36C or symmetrical

Doorbars and roof reinforcement may vary according to Articles 253-8.3.2.1.2 and 253-8.3.2.1.3.



**8.3.2.4 Removable members**

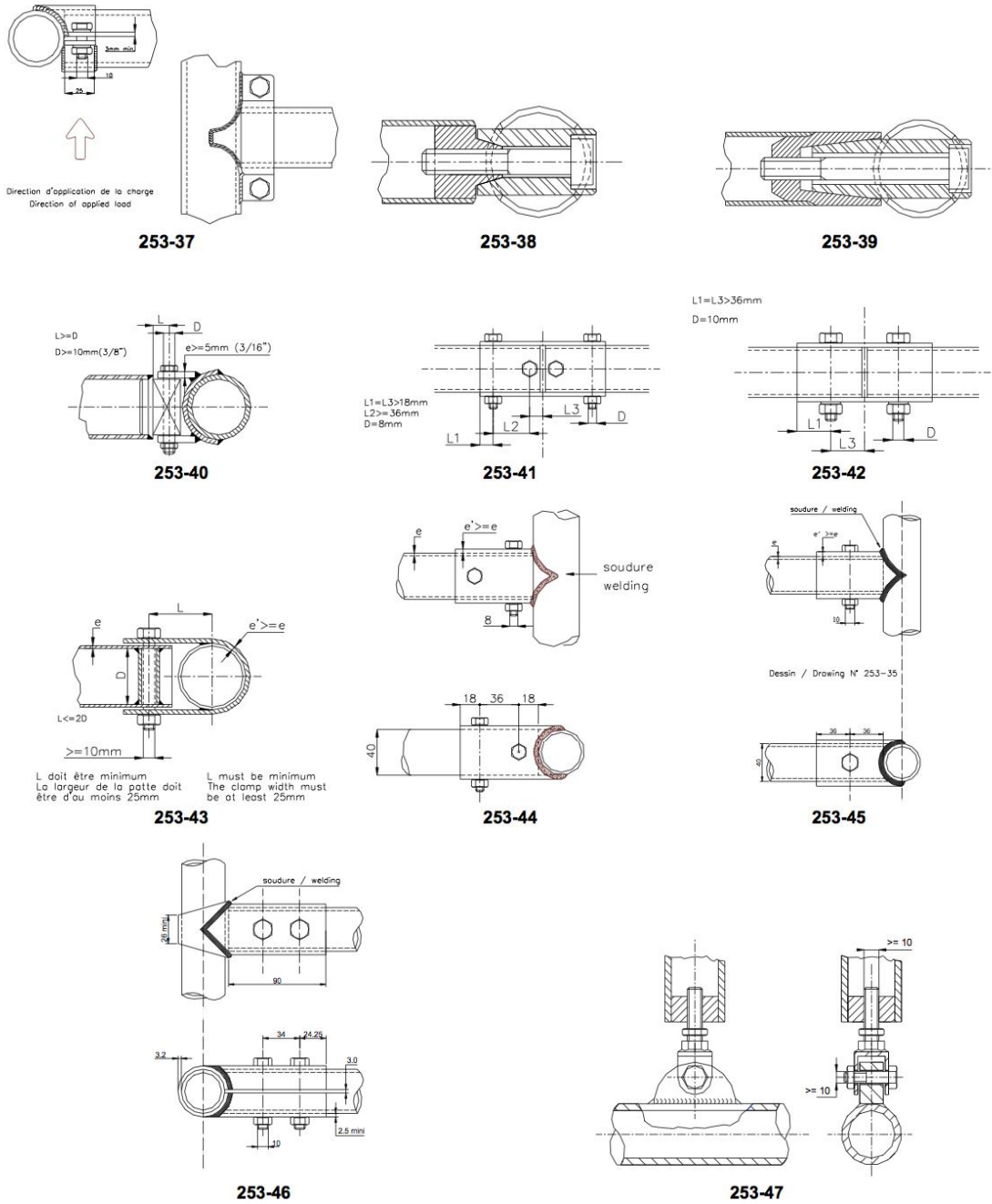
Should removable members be used in the construction of a safety cage, the dismantlable joints used must comply with a type approved by the FIA (Drawings 253-37 to 253-47).

They must not be welded once assembled.

The screws and bolts must have a minimum quality of 8.8 (ISO standard).

Dismantlable joints complying with Drawings 253-37, 253-40, 253-43, 253-46 and 253-47 are solely for attaching optional members and reinforcements described by Article 253-8.3.2.2, and are

forbidden for joining the upper parts of the main roll bar, of the front roll bar, of the lateral half-roll bars and of the lateral roll bars.



### 8.3.2.5 Additional constraints

Longitudinally, the safety cage must be entirely contained between the mounting points of the front and rear suspension elements carrying the vertical loads (springs and shock absorbers).

Supplementary reinforcements exceeding these limits are authorised between the safety cage and the anchorage points of the rear anti-roll bars on the body shell/chassis.

Each of these anchorage points may be connected to the safety cage by a single tube with dimensions of 30 x 1.5mm.

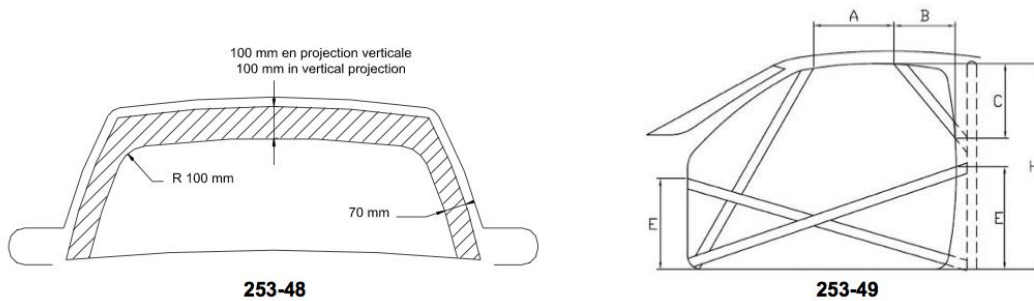
For cars homologated as from 01.01.2002:

In frontal projection, reinforcements of bends and junctions of the upper corners of the front roll-cage must be only visible through the area of the windscreen described by Drawing 253-48.

For all the safety cages for "Super 2000" cars homologated as from 01.01.2000 and for all the safety cages for rally cars homologated as from 01.01.2001:

The presence of the cage reinforcements in the door aperture must comply with the following criteria (Drawing 253-49):

- Dimension A must be a minimum of 300 mm
- Dimension B must be a maximum of 250 mm
- Dimension C must be a maximum of 300 mm
- Dimension E must not be more than half the height of the door aperture (H).



### 8.3.2.6 Mounting of roll cages to the body shell/chassis

Minimum mounting points are:

- 1 for each pillar of the front roll bar;
- 1 for each pillar of the lateral roll bars or lateral half roll bars;
- 1 for each pillar of the main roll bar;
- 1 for each backstay.

To achieve an efficient mounting to the body shell, the original interior trim may be modified around the safety cages and their mountings by cutting it away or by distorting it.

However, this modification does not permit the removal of complete parts of upholstery or trim.

Where necessary, the fuse box may be moved to enable a roll cage to be fitted.

Mounting points of the front, main, lateral roll bars or lateral half-roll bars:

Each mounting point must include a reinforcement plate at least 3 mm thick.

Each mounting foot must be attached by at least three bolts on a steel reinforcement plate at least 3 mm thick and of at least 120 cm<sup>2</sup> area which is welded to the body shell.

For cars homologated as from 01.01.2007, the area of 120 cm<sup>2</sup> must be the contact surface between the reinforcement plate and the body shell.

Examples according to Drawings 253-50 to 253-56.

For Drawing 253-52, the reinforcement plate need not necessarily be welded to the body shell.

In the case of Drawing 253-54, the sides of the mounting point may be closed with a welded plate.

Fixing bolts must have a minimum diameter of M8 and a minimum quality of 8.8 (ISO standard).

Fasteners must be self-locking or fitted with lock washers.

The angle between 2 bolts (measured from the tube axis at the level of the mounting foot cf. Drawing 253-50) must not be less than 60 degrees.

Mounting points of the backstays:

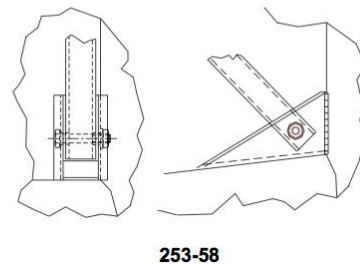
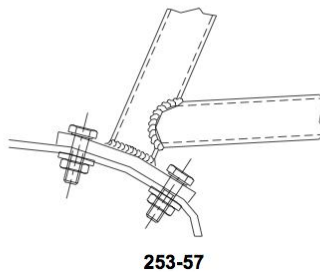
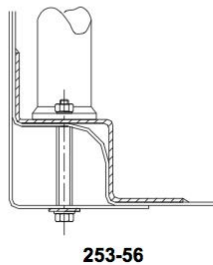
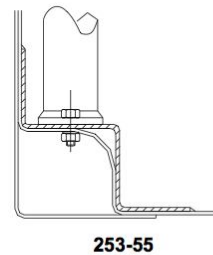
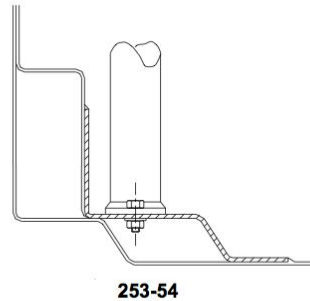
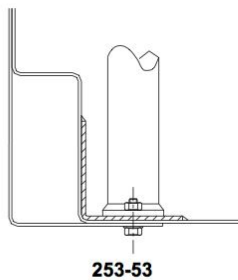
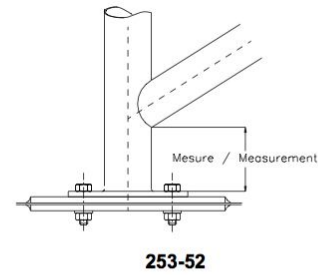
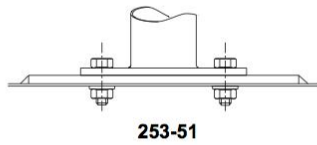
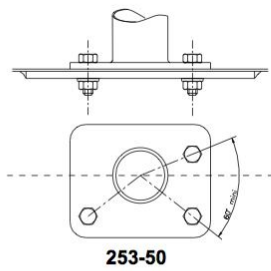
Each backstay must be secured by a minimum of 2 M8 bolts with mounting feet of at least 60 cm<sup>2</sup> area (Drawing 253-57), or secured by a single bolt in double shear (Drawing 253-58), provided it is of adequate section and strength and provided that a bush is welded into the backstay.

These are minimum requirements.

In addition, more fasteners may be used, the support plates of the mounting feet may be welded to reinforcement plates, the safety cage (as defined by Article 253-8.3.1) may be welded to the body shell/chassis.

Special case:

For non steel body shell/chassis, any weld between the cage and the body shell/chassis is prohibited, only the bonding of the reinforcement plate on the body shell/chassis is permitted.



### 8.3.3 Tube specifications

Only tubes with a circular section are authorised.  
Specifications of the tubes used:

Material	Minimum tensile strength	Minimum dimensions (mm)	Use
Cold drawn seamless unalloyed carbon steel (see below) containing a maximum of 0.3 % of carbon	350 N/mm <sup>2</sup>	45 x 2.5 (1.75"x0.095") or 50 x 2.0 (2.0"x0.083")	Main rollbar (Drawings 253-1 and 253-3) or Lateral rollbars and Rear transverse member (Drawing 253-2)
		38 x 2.5 (1.5"x0.095") or 40 x 2.0 (1.6"x0.083")	Lateral half-rollbars and other parts of the safety cage (unless otherwise indicated in the articles above)

**Note:**

For unalloyed steel, the maximum content of additives is 1.7 % for manganese and 0.6 % for other elements.

In selecting the steel, attention must be paid to obtaining good elongation properties and adequate weldability.

The tubing must be bent by a cold working process and the centreline bend radius must be at least 3 times the tube diameter.

If the tubing is ovalised during bending, the ratio of minor to major diameter must be 0.9 or greater.

The surface at the level of the bends must be smooth and even, without ripples or cracks.

### **8.3.4 Guidance on welding**

These must be carried out along the whole perimeter of the tube.

All welds must be of the highest possible quality with full penetration and preferably using a gas-shielded arc.

Although good external appearance of a weld does not necessarily guarantee its quality, poor looking welds are never a sign of good workmanship.

When using heat-treated steel the special instructions of the manufacturers must be followed (special electrodes, gas protected welding).

### **8.3.5 Protective padding**

Where the occupants' bodies could come into contact with the safety cage, flame retardant padding must be provided for protection.

Where the occupants' crash helmets could come into contact with the safety cage, the padding must comply with FIA standard 8857-2001, type A (see technical list n°23 "Roll Cage Padding Homologated by the FIA") and must be permanently fixed to the cage.

Application: For all categories.

## **Article 9 REAR VIEW**

Rearward visibility must be ensured by two external rear-view mirrors (one on the right and one on the left). These rear-view mirrors may be as standard.

Each rear-view mirror must have a reflecting surface of at least 90 cm<sup>2</sup>.

An inside rear-view mirror is optional.

Application: Groups N, A, R, Super 2000 Rallies and WRC.

A cut-out (maximum surface 25 cm<sup>2</sup> per mirror) is authorised in the rear view mirror housing for cockpit ventilation.

The door may be modified at the mounting of the rear view mirror to make an equivalent cut-out of 25 cm<sup>2</sup> maximum.

Application: only in rallies, Groups N, A, R, Super 2000, Rallies and WRC.

## **Article 10 TOWING-EYE**

All cars must be equipped with a rear and front towing-eye for all competitions.

This towing-eye will only be used if the car can move freely.

It must be clearly visible and painted in yellow, red or orange.

## **Article 11 WINDOWS / NETS**

### **Windows:**

The windows must be certified for road use, their marking standing as proof.

For cars with 4 or 5 doors, an intermediate part may be fitted between the upper part of the window and the upper part of the rear door window opening, provided that it has no function other than to ventilate the cockpit and that it does not protrude beyond the exterior surface of the window.

The windscreen must be made of laminated glass.

It may be fitted with one or several transparent and colourless films (maximum total thickness of 400 microns) on its outer surface, unless this is forbidden by the traffic regulations of the country (i.e.) through which the competition is run.

A sun strip for the windscreen is authorised, on condition that it allows the occupants to see the road signs (traffic lights, traffic signs...).



The use of tinted glass and/or safety film is permitted in side and rear windows. In such cases it must be possible for a person situated 5 m from the car to see the driver as well as the contents of the car.

In rallies only:

If silvered or tinted films are not used or if the side windows and the glass sunroof are not made from laminated glass, the use of transparent and colourless anti-shatter films on the side windows and the glass sunroof is mandatory.

The thickness of these films must not be greater than 100microns.

The use of silvered or tinted films is authorised, on the side and rear windows and on the glass sunroof, and on the following conditions:

- Silvered or tinted films fitted on front side windows and rear side windows must have an opening equivalent to the surface of a circle of 70 mm in diameter so that the driver as well as the contents of the car may be seen from the outside.

- This authorisation must be mentioned in the Supplementary Regulations of the competition.

**Nets:**

For competitions on circuits, the use of nets affixed to the safety roll-cage is mandatory.

These nets must have the following characteristics:

- Minimum width of the strips: 19 mm
- Minimum size of the meshes: 25 x 25 mm.
- Maximum size of the meshes: 60 x 60 mm.

and must close up the window opening to the centre of the steering wheel.

**Article 12 SAFETY FIXING DEVICES FOR WINDSCREEN**

Such devices may be used freely.

Application: Groups N, A.

**Article 13 GENERAL CIRCUIT BREAKER**

The general circuit breaker must cut all electrical circuits, (battery, alternator or dynamo, lights, hooters, ignition, electrical controls, etc.) and must also stop the engine.

For Diesel engines having no electronically controlled injectors, the circuit breaker must be coupled with a device cutting off the intake into the engine.

It must be a spark-proof model, and must be accessible from inside and outside the car.

As for the outside, the triggering system of the circuit breaker must compulsorily be situated at the lower part of the windscreen mountings for closed cars. It must be marked by a red spark in a white-edged blue triangle with a base of at least 12 cm.

This outside triggering system only concerns closed cars.

Application: Compulsory fitting for all cars taking part in speed races on Circuits, Rallies or Hill-Climbs. The fitting is recommended for other competitions.

## **Article 14 FIA APPROVED SAFETY FUEL TANKS**

Whenever a competitor uses a safety fuel tank, it must come from a manufacturer approved by the FIA.

However, the use of Safety Fuel Tanks not approved by the FIA can be approved by the JMMC CSC after careful review and verification of its equivalent standard to that of the FIA.

In order to obtain the FIA's agreement, a manufacturer must have proved the constant quality of its product and its compliance with the specifications approved by the FIA.

Safety tank manufacturers recognised by the FIA must undertake to deliver to their customers exclusively tanks complying with the norms approved.

To this end, on each tank delivered must be marked; the name of the manufacturer, the exact specifications according to which this tank has been manufactured, the homologation date the date of the end of validity, and the series number.

The marking process must be indelible and must have been approved beforehand by the FIA according to the prevailing standard.

### **14.1 Technical specifications**

The FIA reserves the right to approve any other set of technical specifications after study of the dossier submitted by the manufacturers concerned.

### **14.2 Specifications FT3 1999, FT3.5 or FT5**

The technical specifications for these tanks are available, on request, from the FIA Secretariat.

### **14.3 Ageing of tanks**

The ageing of safety tanks entails a considerable reduction in the strength characteristics after approximately five years.

No bladder may be used more than 5 years after the date of manufacture, unless inspected and recertified by the manufacturer for a period of up to another two years.

A leak-proof cover, made from non-flammable material, easily accessible and removable only with the use of tools, must be installed in the protection for FT3 1999, FT3.5 or FT5 tanks, in order to allow the checking of the validity expiry date.

### **14.4 Applications of these specifications**

Group N and Group A cars may be equipped with an FT3 1999, FT3.5 or FT5 safety fuel tank if the modifications necessary do not exceed those allowed by the regulations.

The use of safety foam in FT3 1999, FT3.5 or FT5 tanks is recommended.

### **14.5 Fuel tanks with filler necks, Groups A and N**

All cars fitted with a fuel tank with filler neck passing through the cockpit must be equipped with a non-return valve homologated by the FIA.

This valve, of the type "with one or two flaps", must be installed in the filler neck on the tank side."

The filler neck is defined as the means used to connect the fuel filler hole of the vehicle to the fuel tank itself.

## **Article 15 PROTECTION AGAINST FIRE**

An efficient protective screen must be placed between the engine and the occupant's seat, in order to prevent the direct passage of flames in case of fire.

Should this screen be formed by the rear seats, it is advisable to cover them with a flameproof coating.

## Article 16 SEATS, ANCHORAGE POINTS AND SUPPORTS

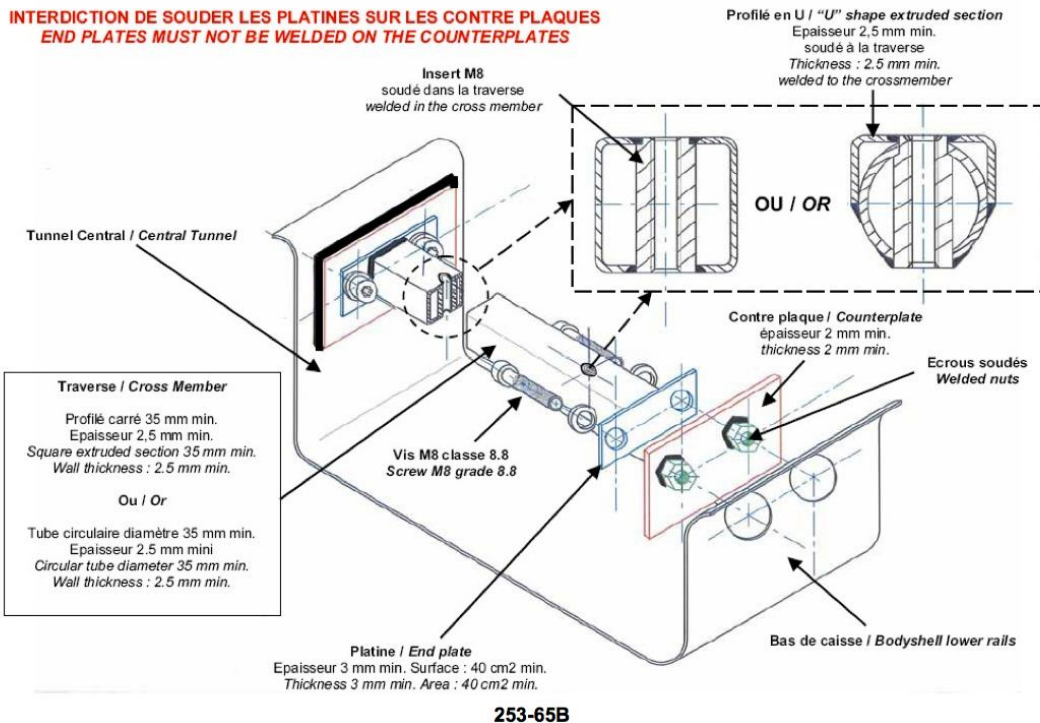
If the original seat attachments or supports are changed, the new parts must either be approved for that application by the seat manufacturer or must comply with the specifications mentioned below:

### 1) Anchorage points for fixing the seat supports

The seat supports must be fixed either:

- on the anchorage points for fixing seats used on the original car
- on the anchorage points for fixing seats homologated by the manufacturer as an Option Variant (in which case the original anchorage points may be removed)
- on anchorage points for fixing seats in conformity with Drawing 253-65B.

The seat supports must be fixed to the anchorage points for fixing seats via at least 4 mounting points per seat, using bolts measuring at least 8mm in diameter.



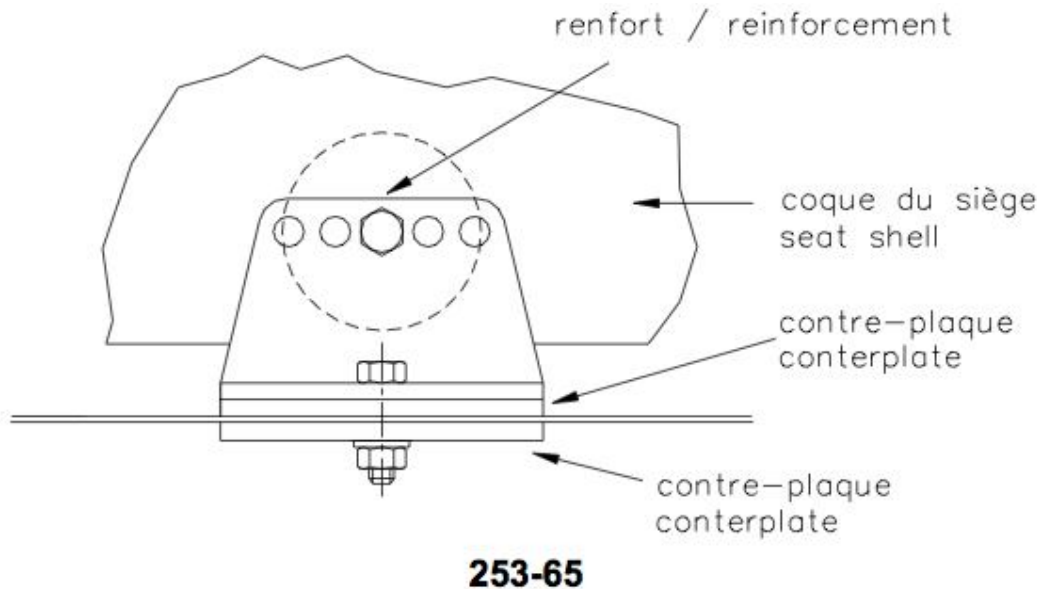
### FITTING INSTRUCTIONS

- 1- Drill holes (larger than nut outer diameter) in the body shell lower rail and in central tunnel wall.
- 2- Weld the nuts on the counter plates, and then weld these on the body shell lower rail on the central tunnel wall.
- 3- Weld the 2 threaded inserts in the cross member, then weld the endplates at each end of the cross member.
- 4- Fix the assembly through 4 M8screws of 8.8 grade which will be screwed in the welded nuts.

2) **Fixing of the seat supports directly onto the shell/chassis**

Supports must be attached to the shell/chassis via at least 4 mounting points per seat using bolts with a minimum diameter of 8 mm and counter plates, according to the Drawing 253-65.

The minimum area of contact between support, shell/chassis and counter plate is 40 cm<sup>2</sup> for each mounting point.



- 3) If quick release systems are used, they must be capable of withstanding vertical and horizontal forces of 18000 N, applied non-simultaneously.  
If rails for adjusting the seat are used, they must be those originally supplied with the homologated car or with the seat.
- 4) The seat must be attached to the supports via 4 mounting points, 2 at the front and 2 at the rear of the seat, using bolts with a minimum diameter of 8 mm and reinforcements integrated into the seat.  
Each mounting point must be capable of withstanding a force of 15000 N applied in any direction.
- 5) The minimum thickness of the supports and counter plates is 3 mm for steel and 5 mm for light alloy materials.  
The minimum longitudinal dimension of each support is 6 cm.
- 6) If there is a cushion between the homologated seat and the occupant, the maximum thickness of this cushion is 50 mm.  
All the occupants' seats must be homologated by the FIA (8855/1999 or 8862/2009 standards), and not modified.

Seats in compliance with 8855/1999 FIA standard:

The seat must be used in accordance with the seat manufacturer's instructions and with Technical List n°12.

The limit for use is 5 years from the date of manufacture indicated on the mandatory label.

An extension of 2 further years may be authorised by the manufacturer and must be indicated by an additional label.

Seats in compliance with 8862/2009 FIA standard:

The seat must be used in accordance with the seat manufacturer's instructions and with Technical List n°40.

The limit for use is 10 years from the year of manufacture.

The use of supports homologated with the seat is compulsory.

For Rallies only, seats may be used with supports homologated by the car manufacturers in option variant.

## **Article 17 PRESSURE CONTROL VALVES**

Pressure control valves on the wheels are forbidden.

## **Article 18 COMPETITOR EQUIPMENT**

### **18.1 Crash Helmets**

Crash helmets bearing must be worn at all times during training, practice and competition. The user must ensure that the helmet is to a standard currently specified (18.3.1), that it fits properly, is secured properly and that it is in a serviceable condition. It is strongly recommended that a flame resistant balaclava, helmet bib or face mask also be worn.

### **18.2.**

Total protection can never be given by any headgear, and the best of crash helmets may not entirely prevent head injury or death in a severe accident. Helmet users must understand that helmets are deliberately constructed so that the energy of a severe blow will be absorbed by the helmet and thereby partially destroy it. The damage may not be readily apparent; it is essential therefore that any helmet receiving a blow in an accident is either replaced or returned to the manufacturer for competent inspection – this of necessity must be the responsibility of the helmet user, who will have been aware of the circumstances under which the helmet was struck. It is not possible or indeed reasonable to expect the Scrutineers, in every case, to observe significant damage. Where there is any doubt about the helmet's fitness for its intended purpose then the Chief Scrutineer is empowered to impound the helmet for the duration of the meeting. This should be a rare occurrence since competitors must appreciate that, once a helmet has served its purpose, it is not only sensible but necessary to replace it. It is the competitor himself who must ensure that the helmet which he uses is fully fit for its purpose; it is clear that this is a small insurance to pay for one's life. The competitor also might consider that, should he survive an accident, but receive head injuries having knowingly used a previously damaged helmet, he could be placing an enormous burden of care upon his family.

#### **18.2.1. Impounding of helmets**

##### Case 1: Pre-Event.

If the helmet does not conform with the required Standards or is in a poor or dangerous condition, the Chief Scrutineer will impound the helmet for the duration of the Meeting. At the close of the Meeting the helmet will be returned to the competitor concerned.

Case 2: Accident during the Event.

If the competitor is injured and the helmet is damaged, the Chief Scrutineer will impound the helmet then seek the advice of the Steward as to further action.

Case 3: Accident during Event and competitor evacuated to hospital with head injuries.

The Chief Scrutineer will make sure that the helmet has been seen by the Chief Medical Officer, he will then impound the helmet unless the Chief Medical Officer wishes to retain the helmet.

Unless specifically called for by the competitor it will be disposed of after six weeks.

**18.3 The competitor is reminded of the following essential criteria when buying or using his helmet:**

- (a) Correct Standard.
- (b) Correct Fit.
- (c) Security.
- (d) Condition.

**18.3.1 Standards.**

Helmets bearing one of the under mentioned 'standards' may be approved by the JMMC subject to other criteria being met.

- (a) ALL JMMC NATIONAL EVENTS AND INTERNATIONAL EVENTS

FIA 8860-2004

FIA 8860-2010

SNELL SA2010

SNELL SA2005. (Not valid after 31/12/2018 for international FIA)

SNELL SA2010

SNELL SAH2010

SFI Foundation 31.1A, 31.2A. (Not valid after 31.12.2018 for international FIA)

BS6658 Type A/FR (Not valid after 31/12/2015)

- (b) In addition the following are acceptable for:

International and National Kart Racing Events (with exception of Kart Drivers under 15 years of age, Cadet and Bambino Drivers):

- SNELL K98 and K2005
- SNELL K2010
- SNELL – FIA CMR2007
- SNELL – FIA CMS2007

Kart Drivers under 15 years of age, Cadet and Bambino Drivers. The weight of the helmet may be checked at any time during an event and must not weigh more than 1,550g:

- SNELL – FIA CMR2007
- SNELL – FIA CMS2007

Note that helmet standards are regularly reviewed and updated, and superseded. Standards will periodically cease to be acceptable; hence an element of 'lifing' will always remain.

**18.3.2. Fit and Security.**

To ensure satisfactory fit and security of your helmet, proceed as follows:

- (a) Obtain correct size by measuring the crown of your head.
- (b) Check that there is no side-to-side movement; a helmet should be as closely fitting as possible consistent with comfort.
- (c) Tighten straps securely – the chin strap must be under tension at all times; ensure therefore that

the strap cannot slip. Chin cups are prohibited.

(d) With head leaning forward, attempt to pull up the back of the helmet, to ensure the helmet cannot be removed in this way.

(e) Ensure you can see clearly over each shoulder.

(f) Make sure nothing impedes your breathing in the helmet and never cover your nose or mouth other than with a flame resistant balaclava or face mask. Helmets with life-support attachments must only be worn if they are connected to a life-support system.

(g) Never wear a scarf, tie or other loose clothing which could come loose and possibly cause an accident.

(h) Ensure that the visor can be opened with one gloved hand.

(i) Satisfy yourself that the back of the helmet provides protection for your neck.

(j) Do not buy from mail order unless you can satisfactorily carry out the above checks; return a Helmet unused if it does not fit.

### **18.3.3 Condition and Care of Helmet**

(a) The user himself must bear the prime responsibility for ensuring that his helmet is fit for the purpose intended, since significant damage to the helmet may have been sustained without this being apparent to the Scrutineer.

(b) Anything other than minor superficial damage is likely to result in the Scrutineer impounding the helmet for the event.

(c) It is in everyone's interest for the competitor to buy the best helmet he can and to look after it (the best is not necessarily the most expensive). A helmet bag should always be used.

(d) There must be no alteration to the structure of a helmet. Where a radio intercom is fitted this should only be done in accordance with the helmet manufacturer's instructions. Fitting of cameras to helmets by whatever means is not permitted unless an integral camera is provided by the helmet manufacturer and that model of helmet is approved fewer than one of the accepted standards.

(e) Use only a weak solution of soft soap and water to clean the interior and exterior of the helmet; do not get the interior too wet.

(f) Some moulded plastic helmets although they meet approved standards can be seriously damaged by substances such as petrol, paint, adhesives, cleaning agents and stickers – such damage may not always be apparent; however, crazing or obvious dulling of the surface finish could indicate serious structural weakening of the helmet and is likely to result in the Scrutineer impounding the helmet for the event.

(g) The helmet should be stored, preferably in a helmet bag, in a cool dry place away from sunlight when not in use. Do not strap the helmet to the roll cage or allow other unrestrained movement which could cause the helmet to be damaged.

(h) A good helmet, properly cared for, is one very important link in a long chain of safety measures. Do not allow it to become the weak link. Do not rely on others. You are responsible for your own safety. Do not, through your own fault, become a grave burden to others.

### **18.4 FHR (Front Head Restraint) Device**

It is permitted to incorporate the use of an FIA approved FHR Device fitted in accordance with FIA Regulations.

### **18.5 Goggles and Visors**

Either goggles or a visor must be worn at all times during training, practice and competing, unless in a closed vehicle.

### **18.6**

Recommended visor and goggles standard (minimum) BS4110, BS4110:1999, BS EN 1938, European Standard 89/686/EEC.

### **18.7**

Goggles or visors must be clear or neutral density filters.

### **18.8 Head Restraints**

Head restraints when required to be fitted, must be capable of restraining a 17kg mass decelerating at 5g.

Dimensions to be 10cms x 10cms and located such that the driver's/passenger's head/helmet is restrained and cannot move past it under rearward forces, or be trapped between the rollbar and the head restraint. It is recommended that it be within 5cm of the driver's/passenger's helmet when they are normally seated.

### **18.9 Overalls**

Clean Flame-Resistant overalls, must be worn to cover from ankle to wrist to neck.

#### **18.9.1 Acceptable standards:**

Racing:

FIA 8856-2000

Special Stage Rallies, Sprints and Hill Climbs:

FIA 8856-2000

FIA 1986 Standard

All Other Events (including overalls in accordance with refuelling for circuit racing):

BS6249 part 1 Index A or B (but not part C).

BSEN533

EN533:1995 Index 3

ISO 14116

FIA 8856-2000

FIA 1986 Standard.

#### **18.9.2**

For FIA Standard Overalls the homologation label will be stitched into the fabric of the garment or on a sewn in label. For International use overalls must comply with: FIA 8856-2000

#### **18.9.3**

As with any item of safety equipment, evidence of damage or excessive wear can render it unsuitable for use. In the case of overalls this could include over frequent or incorrect washing, broken seams or stitching and worn patches. Two piece overalls should be avoided, but if worn must overlap and provide flame resistant coverage.



**18.9.4**

Due to the complex nature of test standards and variations of detailed testing, it is not possible to quote 'equivalents' from foreign national standards unless they are FIA approved as detailed above.

**18.9.5**

Individual competitors are responsible for ensuring their own safety and that appropriate flame resistant overalls are worn when mandatory.

**18.9.6**

Competitors are also strongly advised to wear Flame Resistant gloves, socks, balaclavas and underwear.

Plastic shoes (such as trainers) should be avoided.

**18.9.7**

Specific regulations concerning Flame Resistant gloves, socks, balaclavas and underwear are published by the FIA and applicable to International events.

**18.9.8**

When a name appears on a driver's helmet or overalls, this must be the name of the person wearing them.

# CODE OF DRIVING CONDUCT ON CIRCUITS & FLAG SIGNALS

## Section 1: CODE OF DRIVING CONDUCT

### 1.1 Observance of signals

The instructions detailed below in **Section 2: FLAG SIGNALS** are deemed to be part of this code of driving conduct. All drivers must abide by them.

### 1.2 Overtaking, car control and track limits

**a)** A car alone on the track may use the full width of the said track, however, as soon as it is caught by a car which is about to lap it the driver must allow the faster driver past at the first possible opportunity.

If the driver who has been caught does not seem to make full use of the rear-view mirrors, flag marshals will display the waved blue flag to indicate that the faster driver wants to overtake.

Any driver who appears to ignore the blue flags will be reported to the Stewards.

**b)** Overtaking, according to the circumstances, may be carried out on either the right or the left.

A driver may not deliberately leave the track without justifiable reason.

More than one change of direction to defend a position is not permitted.

Any driver moving back towards the racing line, having earlier defended his position off-line, should leave at least one car width between his own car and the edge of the track on the approach to the corner.

However, manoeuvres liable to hinder other drivers, such as deliberate crowding of a car beyond the edge of the track or any other abnormal change of direction, are strictly prohibited. Any driver who appears guilty of any of the above offences will be reported to the Stewards.

**c)** Drivers must use the track at all times. For the avoidance of doubt, the white lines defining the track edges are considered to be part of the track but the kerbs are not.

Should a car leave the track for any reason, and without prejudice to **1.2 (d)** below, the driver may rejoin. However, this may only be done when it is safe to do so and without gaining any advantage. A driver will be judged to have left the track if no part of the car remains in contact with the track.

**d)** Repetition of serious mistakes or the appearance of a lack of control over the car (such as leaving the track) will be reported to the Stewards and may entail the imposition of penalties up to and including the exclusion of any driver concerned.

**e)** It is not permitted to drive any car unnecessarily slowly, erratically or in a manner deemed potentially dangerous to other drivers at any time.

### 1.3 Cars stopping during a race

**a)** The driver of any car leaving the track because of being unable to maintain racing speed should signal the intention to do so in good time and is responsible for ensuring that the manoeuvre is carried out safely and as near as possible to a point of exit.

**b)** Should a car stop outside the pit lane, it must be moved as soon as possible so that its presence does not constitute a danger or hinder other drivers.

If the driver is unable to move the car, it shall be the duty of the Marshals to assist. If such assistance results in the driver rejoining the race, this must be done without committing any breach of the Regulations and without gaining any advantage.

- c) Repairs carried out on the track may only be made by the driver using tools and spare parts carried aboard the car.
- d) Replenishment of any kind is prohibited save when the concerned is stopped at its pit.
- e) Apart from the driver and duly appointed officials, nobody is allowed to touch a car except in the pit lane.
- f) Pushing a car on the track is prohibited.
- g) Except during a race suspension, any car abandoned on the circuit by its driver, even temporarily, shall be considered as withdrawn from the race.

#### **1.4 Entrance to the pit lane**

- a) The section of track leading to the pit lane shall be referred to as the "pit entry".
- b) During competition, access to the pit lane is allowed only through the pit entry.
- c) Any driver intending to leave the track or to enter the pit lane should make sure that it is safe to do so.
- d) Except in cases of force majeure (accepted as such by the Stewards), the crossing, in any direction, of the line separating the pit entry and the track is prohibited.

#### **1.5 Exit from the pit lane**

Except in cases of force majeure (accepted as such by the Stewards), any line painted on the track at the pit exit for the purpose of separating cars leaving the pits from those on the track must not be crossed by any part of a car leaving the pits.

### **Section 2: FLAG SIGNALS**

#### **a) National flag**

This flag may be used to start the race. The starting signal should be given by lowering the flag which, for Standing Start Competitions, should not be raised above the head until all cars are stationary and in no case for more than 10 seconds.

Should the national flag not be used for any reason, the colour of the flag (which should not cause confusion with any other flag described in this Section) should be specified in the Supplementary Regulations.

#### **b) Red flag**

This flag should be waved at the start line when it has been decided to stop a practice session or the race. Simultaneously, each Marshal posted around the circuit should also wave a red flag. When the signal to stop is given cease racing, come to an immediate and controlled stop at the side of the Track.

**c) Black and white chequered flag**

This flag should be waved and signifies the end of a practice session or the race.

**d) Black flag**

This flag should be used to inform the driver concerned that he must stop at his pit or at the place designated in the Supplementary or Championship Regulations on the next approach to the pit entry. If a driver fails to comply for any reason, this flag should not be shown for more than four consecutive laps.

The decision to show this flag rests solely with the Stewards, and the team concerned will immediately be informed of the decision.

**e) Black flag with an orange disc 40 cm in diameter**

This flag should be used to inform the driver concerned that his car has mechanical problems likely to endanger himself or others and means that he must stop at his pit on the next lap. When the mechanical problems have been rectified to the satisfaction of the chief scrutineer, the car may rejoin the race.

**f) Black and white flag divided diagonally**

This flag should be shown once only and is a warning to the driver concerned that he has been reported for unsportsmanlike behaviour.

These last three flags (in d, e and f) should be shown motionless and accompanied by a black board with a white number which should be shown to the driver whose car's number is displayed. The flag and number may be combined on a single board.

These flags may also be displayed at places other than the start line should the Clerk of the Course deem this necessary.

**g) Yellow flag**

This is a signal of danger and should be shown to drivers in two ways with the following meanings:

- Single waved: Reduce your speed, do not overtake, and be prepared to change direction. There is a hazard beside or partly on the track.

- Double waved: Reduce your speed significantly, do not overtake, and be prepared to change direction or stop. There is a hazard wholly or partly blocking the track and/or Marshals working on or beside the track.

Yellow flags should normally be shown only at the Marshals post immediately preceding the hazard.

In some cases, however, the Clerk of the Course may order them to be shown at more than one marshal post preceding an incident.

Overtaking is not permitted between the first yellow flag and the green flag displayed after the incident. Yellow flags should not be shown in the pit lane unless there is an incident of which the driver should be made aware.

**h) Yellow flag with red stripes**

This should be shown motionless to inform drivers that there is a deterioration of grip due to oil or water on the track in the area beyond the flag.

This flag should be displayed, for at least (depending on the circumstances) 4 laps unless the surface returns to normal beforehand. It is not, however, necessary for the sector beyond where this flag is being shown to show a green flag.

**i) Light blue flag**

This should normally be waved, as an indication to a driver that he is about to be overtaken. It has different meanings during practice and the race.

At all times:

- A stationary flag should be displayed to a driver leaving the pits if traffic is approaching on the track.

During practice:

- A faster car is close behind you and is about to overtake you.

During the race:

The flag should normally be shown to a car about to be lapped, if the driver does not seem to be making full use of his rear-view mirrors. When shown, the driver concerned must allow the following car to pass at the earliest opportunity.

**j) White flag**

This flag should be waved and is used to indicate to the driver that there is a much slower vehicle on the sector of track controlled by that flag point.

**k) Green flag**

This should be used to indicate that the track is clear: it should be waved at the Marshal's post immediately after the incident that necessitated the use of one or more yellow flags.

It may also be used, if deemed necessary by the Clerk of the Course, to signal the start of a warm-up lap or the start of a practice session or the start of a race.