

## TECHNICAL APPENDIX

### Definitions - Technical

#### BALLAST

Completes the weight of the *Automobile* by one or several ballasts on condition that each is a strong and unitary block, fixed by means of tools with the possibility to affix seals.

#### BODY SHELL

The main coachwork structure of an *Automobile* which, in the case of an *Automobile* not having a separate chassis, constitutes the fundamental structure of the *Automobile*. Components such as doors, bonnet, bootlid and mudguards which are readily demountable are not deemed to be part of the body shell.

#### BODYWORK/COACHWORK

- (a) Externally: all the entirely suspended part of the *Automobile* licked by the airstream;
- (b) Internally: cockpit and boot.

Bodywork is differentiated as follows:

- (a) Completely closed bodywork;
- (b) Completely open bodywork;
- (c) Convertible bodywork with the hood in either supple (drop-head) or rigid (hardtop) material.

#### CHASSIS

The structure of any *Automobile* so constructed that the coachwork is a separate entity and not a primary load carrying element of the *Automobile*. It foresees that the coachwork may contribute to the overall strength of the *Automobile*, but the word "chassis" is applicable only to an *Automobile* in which removal of the coachwork does not affect the entity of the mechanical components of engine, transmission, suspension and unsprung part as an assembly.

#### COCKPIT

Structural inner volume which accommodates the *Driver* and the passengers.

#### COMPOSITE MATERIALS

- (a) Material formed from several distinct components, the association of which provides the whole with properties which none of the components taken separately possesses. More specifically, these are materials where a matrix material is reinforced by either a continuous or discontinuous phase.
- (b) The matrix can be metallic, ceramic and polymeric or glass based.
- (c) The reinforcement can be present as long fibres (continuous reinforcement) or short fibres, whiskers and particles (discontinuous reinforcement).

#### CROSS MEMBER

A transverse member which adds support to a structure.

#### CYLINDER BLOCK

The crankcase and the cylinders.

## CYLINDER CAPACITY

Volume V generated in cylinder (or cylinders) by the upward or downward movement of the piston(s).

$$V = 0.7854 \times b^2 \times s \times n$$

where: b = bore

s = stroke

n = number of cylinders

## DRY-BREAK COUPLINGS

Dry-break couplings (may also be referred to as fittings) comprise two separate components to permit the transfer of fluids once connected. Each component is itself sealed and when connected together form a seal of the two components and re-seal independently once disconnected. Dry-break couplings are designed to minimise fluid spills during connection and disconnection of components used to transfer fluids.

Quick refuel - Dry-break couplings: couplings are known as Siamese type or other motorsport recognised (i.e. FIA) couplings for use only in the refuelling of an automobile in Pit Lane during a *Circuit Race*.

Other - Dry-break couplings: couplings that are used for other forms of fluid transfer, which may include fuel, and generally used in conjunction with flexible hose.

## ELASTOMER

An elastic solid composed primarily of hydrocarbon material with widely-spaced cross-linking bonds. Such material shall have a maximum Shore (A) Hardness of 100, and a maximum tensile strength of 60MPa.

## ELASTOMERIC BUSHING

A flexible coupling between two rigid structures that provides limited radial and axial freedom of movement. Bushings with less than 4.0mm of elastomer between the rigid structures shall not be regarded as elastomeric.

## EXHAUST MANIFOLD

Part collecting together at any time the gases from at least two cylinders from the cylinder head and extending to the first gasket separating it from the rest of the exhaust system.

For cars with a turbocharger, the exhaust begins after the turbocharger.

## ELECTRIC VEHICLE (EV)

An EV uses one or more electric motors or traction motors for propulsion. An EV may also utilise forms of regenerative charging to recharge and propel or retard (brake) the *Automobile*. They are defined for motorsport as one of the following:

### Series Production EV:

An EV produced by a manufacturer, approved for and able to be registered for general road use which is used in a *Competition*.

### Competition EV:

An EV produced solely for the purpose of *Competition* or a Series Production EV in which the EV components, equipment and/or systems have been modified outside of the standard manufacturer specification/s.

### An EV may be further defined as:

**Hybrid EV:** the electric motor provides tractive force to move the *Automobile* in conjunction with or independent of an internal combustion (IC) engine. The IC engine, in conjunction with a generator, provides the charging for the battery pack.

**Plug-In Hybrid EV:** the battery pack is rechargeable by being plugged into an external power source. The tractive force to move the *Automobile* may then be provided by the electric motor or supplemented by an IC engine, which may also provide charging through a generator.

**Battery EV:** the battery pack is rechargeable by being plugged into an external power source. The tractive force to move the *Automobile* is provided only by an electric motor.

## FAMILY OF AN AUTOMOBILE

Different series models belonging to one and the same production series of the same manufacturer. Not fewer than the number of *Automobiles* specified in the relevant Technical Regulations for the category of *Automobile* with the same external general lines of the bodywork, material of the bodywork and wheelbase must have been produced in 12 consecutive months. All models must be available through the normal commercial channels of the manufacturer.

Variations in the following details are acceptable:

- (a) Shape and material of front and rear bumper bars
- (b) Removable aerodynamic devices (e.g. spoilers, wings, sill mouldings)
- (c) Control and comfort equipment (e.g. sun roof, auxiliary lamps, door handles, exterior mirrors)
- (d) Decorative strips and mouldings
- (e) Left and right hand drive versions
- (f) Versions which differ in the number of doors provided that these differ only with regard to the doors, door openings and pillars
- (g) Versions with different engine and drivetrain configuration.

## FRICTION SURFACE OF THE BRAKES

Surface swept by the linings on the drum, or the pads on both sides of the disc, when the wheel achieves a complete revolution.

## FUEL TANK

Any container holding fuel likely to flow by any means whatsoever towards the main tank or the engine. In any application where a bladder style FIA FT3-1999 fuel cell is used in an *Automobile* and such bladder is enclosed in a receptacle, the receptacle constitutes part of the fuel tank.

## HOT LIQUID

Any liquid being of a temperature likely to cause burns on contact with the skin, which is generally considered as greater than 60° C for a duration of 5 s.

## ID

Inside diameter.

## IDENTICAL AUTOMOBILES

An *Automobile* belonging to the same production series and which have the same bodywork (outside and inside), same mechanical components and same chassis (even though this chassis may be an integral part of the bodywork in case of a monocoque construction).

## INTAKE MANIFOLD

- (a) Carburettor System: the components collecting the air-fuel mixture from the carburettor/s and extending to the inlet ports.
- (b) Injection System: the components collecting the air from the air intake control device and extending to the inlet ports.
- (c) Diesel Engine: the components collecting the air at the air filter and extending to inlet ports.

## LUGGAGE COMPARTMENT

Any volume distinct from the cockpit and the engine compartment inside the *Automobile*. This volume is limited in length by the fixed structures provided for by the manufacturer and/or by the rear of the seats.

This volume is limited in height by the fixed structures and/or by the detachable partitions provided for by the manufacturer, or in the absence of these, by the horizontal plane passing through the lowest point of the windscreen.

## MAIN STRUCTURE

The fully sprung structure of the *Automobile* to which the suspension and/or spring loads are transmitted, extending longitudinally from the foremost front suspension mount to the rearmost mount of the rear suspension.

## MANUFACTURING STANDARDS

Unless specifically authorised in the relevant technical regulations for the group or category, it is not permitted to modify any component, even though the end result may fall within a permitted range.

## MAXIMUM VALUE

Where a quantity is specified as having a maximum value that value shall be absolute, and no tolerance shall apply.

## MEASURING INSTRUMENT

An instrument, device or piece of equipment which serves the purpose of providing a measurement of dimensions, angles, mass, temperature, pressure, volume or other quantity as related to an automobile or its components. A measuring instrument may be a mechanical (i.e. linear scale) or a digital version of the same instrument type.

A measuring instrument may be specific to a single purpose and applied as an instrument for a Motorsport Australia Group, Classification or Category i.e. track width gauge, ride height gauge, Category scales and as such may not require any specific calibration certification provided that the Motorsport Australia Group, Classification or Category has access to, or the opportunity of, checking their *Automobile* for compliance with such measuring instrument.

The tolerance of a measuring instrument will be as stated on the instrument itself or as per the marked scale of that instrument. Where an instrument is required to carry any specific calibration then that must be taken into consideration in determining its use.

Common Measuring Instruments – this is not an exhaustive list and other instruments may be used:

Instrument	Use
Vernier Caliper	dimensions
Caliper	dimensions
Micrometer	dimensions
Angle gauge	angles
Dial indicator	dimensions
Ruler, tape measure	dimensions
Scale	mass
Thermometer	temperature
Durometer	hardness

## MEASURING TOLERANCES

Where a tolerance is expressed in a recognition document, it shall apply, otherwise the following is applicable:

Item	Tolerance
Bore and stroke	$\pm 0.1\text{mm}$
All machining (except bore and stroke) including fan, crankshaft bearings, connecting rod bearings, valves, ports, carburettor, venturi, manifolds and clutch:	$\pm 0.2\%$
Distance from gudgeon pin centre line to highest point of piston crown:	$\pm 0.5\%$
Unfinished castings:	+4% - 2%

Cam lift:	+ 1%
Weight of flywheel, clutch, crankshaft, connecting rods and pistons:	+7% - 0.3%
Width of car at front and rear axles:	+1% - 0.3%
Wheelbase:	± 1%
Track:	± 25mm

### MECHANICAL COMPONENT

Any component of an *Automobile* whether moving or not, which is necessary for the propulsion, suspension, steering and braking as well as any accessory which may be used in its operation.

### MECHANICALLY IDENTICAL COMPONENT

A component which performs exclusively the original function/s in the same manner as foreseen by the manufacturer and which permits the attachment of any secondary components in the original manner and without modification of that component.

### MINIMUM VALUE

Where a quantity is specified as having a minimum value that value shall be absolute, and no tolerance shall apply.

### MINIMUM WEIGHT

The weight of the empty *Automobile* (without persons, luggage, tools or jack aboard). Any reservoir containing a liquid (e.g. lubrication, cooling, brake fluid and heating if necessary) shall be filled to the level laid down by the manufacturer, with the exception of the windscreen or headlight washer, brake cooling system, fuel and water injection/intercooler spray system, which shall be empty.

### MODEL OF AUTOMOBILE

An identical *Automobile* belonging to a family (see Family of an *Automobile*) and a production series distinguishable by an identical conception and identical external general lines of the coachwork, and by an identical mechanical conception of the engine and the transmission to the wheels.

### MONOCOQUE

A form of *Automobile* body construction in which all or most of the stresses are carried by the skin.

### OD

Outside diameter.

### OPEN AUTOMOBILE

An *Automobile* without a supporting structure between the tops of the windscreen pillars and those of the rear window (if fitted).

### PERIMETER OF AN AUTOMOBILE

The location delineating the horizontal extremities of an *Automobile*.

### PRODUCTION CAR

An *Automobile* of which the production of a certain number of identical examples within a specified period of time has been verified and which are destined for normal sale to the public. In competition, such an *Automobile* shall retain the basic bodyshell, suspension and driveline components.

## RACING WEIGHT

The weight of the *Automobile* during or immediately after a competition including the driver wearing all normal racing apparel including helmet. No materials, liquid or otherwise, may be added prior to weighing.

## ROCKER PANELS

The external body panel extending horizontally from front to rear mudguard panels, and from sill to the lower extremity of the coachwork, when the *Automobile* is viewed in side elevation.

## ROTARY (WANKEL-TYPE) ENGINE

Spark ignition engine based on the Wankel principle.

## RUNNING GEAR

The running gear includes all parts totally or partially unsuspended.

## SEAL

Element used for identifying components of an *Automobile* for either of the following purposes:

- (a) control of the use or replacement of a component;
- (b) control of the number of components used or registered as required by the applicable regulations;
- (c) registration of a component seized for carrying out immediate or differed technical checks;
- (d) prevent the dismantling and/or the modification of a component or part of an assembly; or
- (e) any other need for the application of technical and/or sporting regulations.

## SEAT

The two surfaces making up the seat cushion and seatback (squab) or backrest.

## SILL

The component of the body shell, generally in a horizontal plane, which constitutes the lower extent of a door opening.

## SPACE FRAME CHASSIS

An *Automobile* chassis so constituted that all loads are borne by a matrix of structural sections of metal.

## SPLITTER

An aerodynamic device generally mounted horizontally to the front lower bodywork of an *Automobile* and which is contiguous therewith.

## SPOILER

An aerodynamic device attached to an *Automobile* which is contiguous with the bodywork and which is licked on only one surface by the airflow.

## SPORTS CAR

An *Automobile* designed primarily for road use with at least two (2) seats equally disposed about the centreline of the *Automobile* capable of seating two adults.

## STATIC GASKET

The only function of a gasket is to ensure the sealing of at least two parts, fixed in relation to each other.

The distance between the faces of the parts separated by the gasket must be less than or equal to 5 mm.

## STRESSED SKIN SPACE FRAME CHASSIS

A space frame chassis to which stress bearing panels are attached.

## SUB-FRAME

A supporting frame that uses a discrete, separate structure within a chassis or monocoque to carry certain components, such as the engine, drivetrain, or suspension. A sub-frame may be bolted and/or welded to the other structure/s of an *Automobile*. When bolted, it may be equipped with elastomer bushings.

## SUPERCHARGING

A mechanical device capable of producing positive (above atmospheric) pressure in the induction system, i.e. any device which effects a measurable increase in the Brake Mean Effective Pressure (BMEP).

An air duct which delivers air to the engine intake is not considered to be a supercharger.

## TRACK

The distance between the centres of the contact patches of the tyres on the same axle as presented for competition.

## WHEEL ANGLES - LIVE REAR AXLES

Unless established otherwise by the manufacturer or included in the relevant regulations, all production-based *Automobiles* utilising a live rear axle are deemed to be configured with parallel wheel planes.

## WHEEL

Wheel: flange and rim.

Complete Wheel: flange, rim and tyre. For measurement the tyre shall be inflated to the tyre manufacturer's recommended pressure.

## WING

An aerodynamic device attached to an *Automobile* which is lifted on both upper and lower surfaces by the airflow.