



Automobili La'Bergitla

2030 - 2031 Endurance Series Technical Regulations

Article 1: Definitions	Page 2
Article 2: General Principles	Page 14
Article 3: Homologation Procedure	Page 20
Article 4: Bodywork and Dimensions	Page 29
Article 5: Mass	Page 32
Article 6: Electric Powertrains	Page 34
Article 7: Electrical Equipment and Safety Provisions	Page 38
Article 8: Transmission Systems	Page 42
Article 9: Suspension and Steering Systems	Page 44
Article 10: Brake Systems	Page 48
Article 11: Hydraulic System	Page 50
Article 12: Wheels and Tyres	Page 51
Article 13: Cockpit	Page 53
Article 14: Safety Structures	Page 56
Article 15: Safety Equipment	Page 60
Article 16: Car Construction – Permitted Materials	Page 63
Article 17: Safety Test Requirements	Page 66
Article 18: Television Cameras and Timing Transponders	Page 67

Article 1: Definitions

As issued by the Automobili La'Bergitla Squadra di Motorsport Technical Division

1.0 Preamble and Applicability

All terms and definitions contained within these Technical and Sporting Regulations of The Automobili La'Bergitla Endurance Series ("the Series")—including all appendices, bulletins, technical lists, supplementary regulations, and official communications—shall apply with binding effect to all participants, competitors, teams, manufacturers, officials, and any other persons or entities involved in the Series, except where expressly stated otherwise.

In the event of any ambiguity or dispute as to the interpretation of these Regulations, the decision of the Organiser, the Stewards, or the duly appointed Sporting or Technical Delegate shall be final and binding. Any reference to a specific regulatory provision shall be deemed to include subsequent amendments, updates, or clarifications issued by the Organiser or the FIA unless otherwise specified.

These Regulations are to be read in conjunction with the International Sporting Code, all applicable FIA Appendices, and any supplementary or event-specific regulations published for the Series. In the case of conflict, the order of precedence shall be: (1) FIA International Sporting Code, (2) Series Sporting Regulations, (3) Series Technical Regulations, (4) Supplementary Regulations and Bulletins, except where otherwise expressly provided.

All participants are deemed to have full knowledge of and shall comply with the most current version of these Regulations at all times.

1.1 Vehicle and Series Classification

1.1.1 La'Bergitla Endurance Series Car ("LES Car")

An automobile purpose-built exclusively for high-speed endurance competition on permanent circuits or approved closed courses, propelled solely by electric motors, and homologated in accordance with these Regulations for eligibility in The Automobili La'Bergitla Endurance Series ("the Series").

1.1.2 Series Classes

- **LES Hypercar:**
The premier prototype category of the Series, comprising purpose-designed race vehicles that conform to the maximum power, weight, energy, and performance limits as specified in these Regulations and associated technical bulletins. LES Hypercars are engineered without direct road-car equivalency and represent the highest tier of technological and sporting performance in the Series.
- **LES GT-E (Grand Touring Electric):**
The production-based category for electric Grand Touring vehicles homologated for the Series. GT-E cars are derived from road-legal models and modified for competition in accordance with the technical bulletins and homologation requirements issued by the Organiser. All modifications must preserve the spirit of production vehicle competition and maintain a connection to commercially available vehicles.
- **LES Experimental ("Garage 56"):**
An invitation-only class for non-conforming, innovative, or experimental vehicles, including but not limited to demonstration projects, emerging technologies, or special entries that may fall outside standard technical eligibility. Admission is at the sole and absolute discretion of the Organiser and is

intended to foster technical advancement and showcase novel concepts within a controlled racing environment.

1.1.3 Make / Manufacturer

“Make” or “Manufacturer” shall refer to the brand, corporate entity, or legal person officially recognised, approved, and authorised by the Organiser to design, supply, enter, or support vehicles, chassis, powertrain systems, or any homologated components for participation in the Series. Recognition as a Manufacturer is subject to ongoing compliance with all applicable Series regulations, homologation procedures, and commercial agreements as may be required by the Organiser.

1.2 Sporting Entities and Roles

1.2.1 Entrant

Any individual, partnership, corporation, or other legal entity that has formally submitted and had accepted an official entry for a car in the Series, and is ultimately responsible for the sporting and technical operation of that car at all events. The Entrant is the party named in the official entry documentation and is accountable for compliance with all Series regulations, including those relating to the conduct of its personnel.

1.2.2 Competitor

The person or organisation recognised by the Organiser as responsible for the entry and ongoing regulatory compliance of a car in the Series. The Competitor may be the Entrant, a Team, or a Manufacturer, as specified in official Series documentation. The Competitor is liable for all sporting, technical, and administrative obligations relating to the entered car and its participants.

1.2.3 Team

A collective entity, whether incorporated or unincorporated, responsible for the preparation, logistical support, and operational management of one or more cars entered in the Series. A Team includes, but is not limited to, personnel such as drivers, engineers, technical staff, mechanics, and other crew members assigned to the car(s).

1.2.4 Driver

Any person who is officially nominated and authorised by a Competitor or Team to operate a car in any official session of the Series, including practice, qualifying, and the race itself. All Drivers must hold the appropriate competition licence and fulfil all requirements as stipulated by the Organiser and governing sporting authority.

1.2.5 Crew Member

Any individual, other than a Driver, who is officially accredited and designated by a Competitor or Team to service, support, operate, or manage a car during any part of a Series event. Crew Members include but are not limited to engineers, mechanics, pit crew, and data or logistics personnel.

1.2.6 Official Supplier / Approved Supplier

Any commercial entity, company, or organisation that is formally appointed or authorised by the Organiser to supply standardised components, equipment, tyres, battery systems, fuel, software, or services—either to all or to a subset of participants—as defined and published in the current Series Technical List and/or supplementary regulations. All products and services supplied must meet the standards, specifications, and homologation criteria set by the Organiser and, where applicable, the FIA.

1.3 Competition, Sessions, and Procedures

1.3.1 Competition

An officially recognised event, or series of events, forming part of the Series calendar, conducted in accordance with the Sporting and Technical Regulations, including all applicable appendices, bulletins, and supplementary regulations. A Competition may comprise a single Event or multiple Events as defined by the Organiser.

1.3.2 Event

A single scheduled occurrence within the Series calendar, comprising all official sessions—including, but not limited to, Free Practice, Qualifying, and Race—conducted at a specific venue and on dates published by the Organiser. Each Event is subject to these Regulations and any supplementary bulletins issued for that Event.

1.3.3 Session

Any defined period of official on-track activity during an Event, including but not limited to Free Practice, Qualifying, and Race. Sessions are further subject to specific operational and safety requirements as outlined in the Regulations and Supplementary Regulations.

1.3.4 Stint

A continuous, uninterrupted period of driving by a single Driver in a car, commencing upon leaving the pit lane and concluding at the next pit stop, driver change, or at any mandated interval defined in the Regulations or Supplementary Regulations.

1.3.5 Out Lap / In Lap

- **Out Lap:** The lap immediately following a car's exit from the pit lane onto the circuit during any Session.
- **In Lap:** The lap immediately preceding a car's entry into the pit lane at the conclusion of a stint or for any servicing, repair, or driver change.

1.3.6 Pit Lane

The designated and controlled area adjacent to the circuit, used for pit stops, car servicing, repairs, driver changes, refuelling, battery swaps, and other operational activities as prescribed in these Regulations and the Supplementary Regulations. The Pit Lane is subject to strict safety, speed, and conduct requirements at all times.

1.3.7 Pit Stop

Any period during which a car enters the Pit Lane for the purpose of servicing, repairs, battery swap, driver change, or other operations as defined in these Regulations and the Supplementary Regulations. All pit stop activities must be conducted in accordance with the safety and procedural requirements set forth by the Organiser.

1.3.8 Minimum Pit Stop Time

The minimum mandatory interval, as specified by the Organiser for each Event or procedure, during which a car must remain stationary in the Pit Lane or designated battery swap zone while undertaking specified operations (including but not limited to battery swaps, driver changes, or mandatory technical interventions).

.

1.4 Sporting and Regulatory Terms

1.4.1 Homologation

The formal certification process by which the Organiser verifies and approves that a vehicle, system, component, or assembly conforms to the Technical and Sporting Regulations, as evidenced in the Technical

Passport or Dossier. Only homologated vehicles, systems, or components may participate in the Series unless expressly permitted by the Organiser.

1.4.2 Technical Passport / Technical Dossier

The official document, record, or digital file issued by the Organiser specifying the approved specification, configuration, and eligibility status of a car, system, or component. The Technical Passport/Dossier must be maintained and produced upon request for scrutineering or official inspection.

1.4.3 Balance of Performance (BoP)

A defined set of technical restrictions, waivers, or adjustments—such as weight, power, energy allocation, or aerodynamic parameters—applied by the Organiser for the purpose of equalising the competitive potential across different vehicles or classes and ensuring close competition.

1.4.4 Equivalence of Technology (EoT)

The technical and procedural process by which the Organiser harmonises the performance potential of fundamentally different vehicle architectures, powertrains, or technical solutions, to ensure fair and balanced competition across the Series.

1.4.5 Scrutineering

The official inspection, verification, and conformity assessment of vehicles, systems, and equipment to ensure ongoing compliance with all applicable Technical and Sporting Regulations, before, during, and after each Event or Session. Scrutineering may be conducted at any time at the discretion of the Organiser or Stewards.

1.4.6 Protest

A formal written objection or claim submitted by a Competitor or Entrant in accordance with the prescribed procedures, disputing the conduct, eligibility, or regulatory compliance of another Competitor, car, or Official during an Event or Series.

1.4.7 Appeal

The process by which a Competitor or Entrant seeks a formal review or reconsideration of a decision, penalty, or ruling imposed by the Stewards, Race Director, or Organiser, in accordance with the procedures established in these Regulations and the International Sporting Code.

1.4.8 Penalty

Any sporting, technical, or disciplinary sanction imposed by the Stewards, Race Director, or Organiser for breach of the Regulations. Penalties may include, but are not limited to: warnings, fines, grid or time penalties, stop-and-go penalties, exclusion from a session or Event, or disqualification from the Series.

1.4.9 Exclusion / Disqualification

The annulment or removal of a car, Competitor, or Entrant's result, classification, or participation from a session, Event, or the Series in its entirety, as a result of a regulatory breach or infringement. Exclusion and disqualification may be applied retroactively and are subject to official notification.

1.4.10 Incident

Any occurrence or action involving one or more cars, drivers, Competitors, Teams, or Officials, reported to or observed by the Stewards or Race Director, which may require investigation and may lead to penalties or sanctions under these Regulations.

1.4.11 Force Majeure

An unforeseeable circumstance or event, beyond the reasonable control of the parties involved (including but not limited to natural disasters, war, strikes, or government action), which prevents, delays, or materially impedes compliance with obligations under these Regulations. The recognition of Force Majeure is at the sole discretion of the Organiser and/or Stewards.

1.5 Vehicle Systems and Components

1.5.1 Bodywork

All fully sprung parts of the car exposed to the external airstream, excluding but not limited to on-board cameras, official indicator lights, secondary roll structures, and housings or covers required solely for propulsion, battery, or running gear. Bodywork shall not include unsprung or purely mechanical driveline elements.

1.5.2 Wheel / Complete Wheel

- **Wheel:** The assembly consisting of the flange and rim.
- **Complete Wheel:** A wheel fitted with an inflated tyre, constituting a functional part of the suspension assembly for regulatory purposes.

1.5.3 Car Mass

The total mass of the car, including the driver wearing full FIA-approved apparel and safety equipment, as measured at any time during Competition or scrutineering, except where otherwise specified by the Organiser.

1.5.4 Sprung Mass

All parts of the car supported exclusively by the suspension system, excluding unsprung elements such as wheels, tyres, uprights, and driveshafts.

1.5.5 Front Powertrain (FPK)

The assembly comprising the front Motor Generator Unit (MGU), front Motor Control Unit (MCU), and all associated transmission elements (gearbox, differential, joints, and linkages) up to but not including the outboard driveshafts.

1.5.6 Rear Powertrain

The assembly comprising the rear MGU, rear MCU, and all associated transmission elements, up to but not including the outboard driveshafts.

1.5.7 Electric Motor-Generator Unit (MGU)

A rotating electromechanical machine, comprising a stationary stator and rotating rotor, that converts electrical energy into mechanical energy and vice versa. The MGU functions solely as a power converter and shall not have any capacity to store electrical energy.

1.5.8 Motor Control Unit (MCU)

An electronic control device responsible exclusively for managing current conversion from a DC energy source and for issuing demand signals to the MGU. The MCU may not provide any energy storage or supply unrelated to MGU operation.

1.5.9 DC-DC Converter

An electronic or electromechanical device that converts one direct current (DC) voltage level to another, for the sole purpose of powering vehicle systems, and which is incapable of storing energy.

1.5.10 Gearbox

All components transmitting torque from the output shaft of the MGU to the driveshafts, including but not limited to: gears, selectors, clutches, bearings, and housings. The gearbox does not include inboard driveshaft joints (except where integral to the output shaft), lubricants and their circuits, purely electrical sensors, or non-transmission rear case elements.

1.5.11 Differential (Torque Transfer System)

- **Limited Slip Differential (LSD):** A mechanical device restricting torque disparity between left and right driven wheels by means of an internal gear mechanism.
- **Active LSD:** As above, with the addition of electronic or hydraulic actuation for controlled torque bias across the axle.

1.5.12 Driveshafts

Mechanical components transmitting rotational drive torque from the sprung mass to the unsprung elements (wheels/uprights), including all articulating joints and couplings.

1.5.13 Rechargeable Energy Storage System (RESS)

As defined by FIA Appendix J, Article 251-3.1.7. RESS are devices or assemblies capable of storing only electrical energy (including but not limited to batteries, supercapacitors, or ultracapacitors) for the propulsion of the car, or for recovery of energy from permitted external sources. No RESS may be recharged by fuel-based or combustion-driven converters.

1.5.14 Traction Battery, Capacitors, Battery Pack, Battery Module, Battery Cell, Battery Management System (BMS)

Each term is as defined in the latest applicable FIA Appendix J or International Sporting Code, with all cross-references and definitions deemed incorporated herein by reference.

1.5.15 Battery Swap / Swap Mechanism

- **Battery Swap:** The operation of replacing a depleted RESS or battery pack with a fully charged homologated unit during Competition or pit stop.
- **Swap Mechanism:** All mechanical, electrical, and alignment hardware, locking devices, and power connectors enabling safe and efficient battery exchange, as described in the car's homologation dossier.

1.5.16 Energy Recovery System (ERS)

A system or assembly, as permitted under these Regulations, designed to recover, store, and redeploy energy—such as through regenerative braking, heat harvesting, or other approved means—for propulsion or auxiliary use.

1.6 Chassis, Suspension, and Aerodynamics

1.6.1 Reference Plane

The geometrically-defined horizontal plane corresponding to the lowest part of the car's sprung mass, with the skid block removed. All height and Z-axis references in these Regulations are measured from this plane, unless stated otherwise.

1.6.2 Cartesian Coordinate System

A right-handed (X, Y, Z) coordinate system defined as follows:

- **X-axis:** Runs longitudinally along the car, positive rearwards, parallel to the reference plane and car centre line.
- **Y-axis:** Normal (perpendicular) to the X-axis, positive to the right (driver's right), with Y=0 on the geometric centre plane of the car.
- **Z-axis:** Normal (perpendicular) to the reference plane, positive vertically upwards, with Z=0 at the reference plane.
All local coordinate origins, axes, suffixes, and unit conventions shall follow these definitions unless otherwise specified in these Regulations or technical documentation.

1.6.3 Cockpit

The internal protected volume within the main structure of the car, intended solely for accommodating the driver in their normal seated position and any mandated safety equipment.

1.6.4 Cockpit Padding

Non-structural, rapidly removable elements within the cockpit, designed to enhance driver comfort and provide supplementary protection as specified by these Regulations.

1.6.5 Main Structure

The primary sprung load-bearing structure of the car, transmitting suspension and spring loads between the front and rear suspension mounting points. The main structure must comply with all relevant structural and crashworthiness standards set by the Series.

1.6.6 Survival Cell

A continuous, enclosed protective structure integrating the cockpit, RESS (Rechargeable Energy Storage System), and any associated safety-critical components. The survival cell is the principal safety cell for the driver and must meet all homologation and crashworthiness standards specified herein.

1.6.7 Rear Casing Structure

The structural assembly located between the rear face of the survival cell and the front face of the rear impact-absorbing structure, serving to transmit loads and maintain crash protection.

1.6.8 Sprung Suspension

A system in which all wheels are suspended from the body or chassis by means of a spring medium (e.g., coil spring, torsion bar), isolating unsprung mass from the main structure and enabling controlled wheel movement.

1.6.9 Active Suspension

Any system, whether mechanical, hydraulic, electrical, or otherwise, that enables real-time control, adjustment, or modulation of suspension characteristics or ride height while the car is in motion.

1.6.10 Structural Suspension Members

Suspension components designed to transmit structural loads, including (but not limited to): wishbones, pushrods, track rods, rockers, uprights, bearings, and anti-roll bars. Non-load-bearing elements such as bearing cages, bump rubbers, and packers are excluded from this definition.

1.6.11 Composite Structure

Any structural element or assembly constructed from non-homogeneous materials, including (but not limited to):

- Laminates composed of two or more bonded skins,
- Sandwich panels with core materials,
- Multi-ply layups using advanced fibres, resins, or foams.

1.6.12 Steering System

The assembly of mechanical components, forming part of the sprung mass, which converts steering column input into the precise realignment of outboard suspension elements for steering the wheels.

1.6.13 Brake System

A mechanical, hydraulic, or electromechanical device designed to inhibit or retard motion by converting kinetic energy into heat or another energy form, for the purpose of slowing or stopping the car or one of its components.

1.6.14 Hydraulic System

An electromechanical system designed exclusively to generate, transmit, and control hydraulic pressure for a defined function on the car (e.g., brakes, steering, or suspension). All components must comply with relevant Series safety requirements.

1.6.15 Solenoid Valve

A valve actuated by an electromagnet, used to control fluid flow. Operates in a binary mode (fully open or fully closed) and is typically used for rapid switching applications.

1.6.16 Proportional Valve

A fluid control valve that regulates flow or pressure proportionally to an electronic or mechanical input signal, enabling variable and precise intermediate positions between fully open and fully closed.

1.6.17 Inerter

A device which uses inertial mass (such as a rotating mass or fluid column) to influence and tune the dynamic behaviour of the suspension, particularly affecting vertical wheel acceleration.

1.6.18 Inter-linked Damper

Any system where dampers are interconnected, either hydraulically or pneumatically, to transfer fluid or pressure between corners of the suspension for the purpose of tuning ride or handling response.

1.7 Electronics, Data, and Safety

1.7.1 Electronic Box

A sealed or enclosed unit, containing at least one microcontroller, microprocessor, or programmable logic device, intended for car control, data acquisition, processing, or actuation functions.

1.7.2 Vehicle Control Unit (VCU)

A homologated Electronic Box whose principal function is to interpret and execute driver commands, arbitrate torque requests, and coordinate the operation of MCUs, BMS, ERS, and other vehicle subsystems. The VCU must operate with Organiser-approved Series control software and remain accessible for inspection at all times.

1.7.3 Telemetry

The bi-directional or uni-directional transmission and/or reception of car and/or driver data between a moving vehicle and any fixed or mobile infrastructure (e.g., pit wall, race control), for the purposes of real-time monitoring, regulatory compliance, performance analysis, and/or safety management.

1.7.4 Telematics

The integration and use of telecommunications, informatics, and location-based technologies for the remote exchange, storage, management, or processing of vehicle, driver, or event data as required for Series operations, logistics, or regulatory compliance.

1.7.5 Control Electronics

All systems, modules, and assemblies responsible for the safety-critical or operational functions of the car,

including but not limited to: VCU, MCU, BMS, ERS, official data recorders, and Series-mandated data acquisition, sensor, or control modules.

1.7.6 Official Data Recording System (DRS)

The encrypted, homologated electronic data recording and logging system, as supplied or approved by the Organiser, and required to be fitted to all cars for the purposes of technical and sporting monitoring, compliance auditing, event adjudication, and regulatory reporting.

1.7.7 Safety Indications

All visual, audible, or electronic warning signals, indicators, or displays, whether physical or digital, that are required by these Regulations, any FIA Appendix, or Supplementary Bulletins, for the purposes of safety, compliance, incident notification, or operational control.

1.8 Camera, Visual, and Communication Equipment

1.8.1 Onboard Cameras (OBC)

A television or video camera, supplied or approved by the Organiser or Promoter, officially installed on the car for the purposes of live broadcast, video recording, performance monitoring, compliance review, or regulatory enforcement. Only OBC equipment provided or authorised by the Promoter may be fitted.

1.8.2 Camera Housing and Mounting

All brackets, enclosures, fixtures, fasteners, or supports specifically designed to secure, protect, and position OBC equipment on the car, in accordance with the mounting requirements set out in the Homologation Form and the official installation guidelines issued by the Organiser and/or Promoter.

1.8.3 OBC Dummy Weight (Camera Ballast)

A solid device, supplied or specified by the Organiser or Promoter, constructed to be visually and dimensionally identical to the official OBC, and possessing a mass within $\pm 2\%$ of the homologated camera unit. The OBC Dummy Weight must be installed in any car not fitted with a functional OBC, and in the exact position and orientation as the camera it replaces, to ensure parity of weight distribution and compliance with the Series minimum mass requirements.

1.9 Powertrain and Driveline Systems

1.9.1 4-Wheel Drive (4WD)

A configuration or operational mode in which the car's powertrain is capable of applying positive drive torque to the front axle (front wheels), and simultaneously applying either positive or zero torque to the rear axle (rear wheels), in accordance with Series regulations and homologated system logic. For the avoidance of doubt, "positive torque" refers to torque which propels the wheels in the forward direction of travel. Any use of 4WD, its control logic, and operational modes must be declared in the car's technical passport and subject to scrutineering.

1.9.2 Torque Vectoring System

Any mechanical, hydraulic, electrical, or software-controlled system, mechanism, or algorithm which enables the independent distribution or apportionment of drive torque between the left and right wheels of a single axle (either front or rear), whether for the purposes of traction, stability, yaw control, or performance optimisation. Unless expressly permitted elsewhere in these Regulations, the use of any torque vectoring system is prohibited. For the avoidance of doubt, this includes systems operating via differentials, brakes, power electronics, or hybrid energy recovery.

1.10 Sporting Operations and Governance

1.10.1 Race Director

The appointed official, acting with absolute authority over all on-track activities, safety measures, and procedural compliance during each Event. The Race Director is empowered to issue binding instructions, manage session timing, interpret regulations, and coordinate with other officials as necessary to ensure the orderly conduct and safety of the Competition.

1.10.2 Clerk of the Course

The official responsible for the safe, efficient, and proper operation of the circuit and its facilities during an Event. The Clerk of the Course executes the instructions of the Race Director, oversees marshal deployment, incident management, and enforces circuit-specific procedures, reporting directly to the Stewards and the Organiser.

1.10.3 Session Types

- **Free Practice:** Non-competitive sessions held for the purpose of car setup, acclimatisation, and performance evaluation; no impact on race classification or grid position.
- **Qualifying:** Officially timed sessions determining the starting grid for the Race. The procedure, duration, and format will be specified in the Supplementary Regulations.
- **Race:** The principal competitive session awarding points, determining final classification, and subject to the full application of the Sporting and Technical Regulations.

1.10.4 Garage, Parc Fermé, Formation Lap

- **Garage:** The designated paddock area assigned to each Team for the maintenance, repair, and preparation of cars during the Event.
- **Parc Fermé:** A secured, access-controlled area to which cars are directed post-session for scrutineering, where all modifications, adjustments, or work are strictly prohibited unless expressly authorised by the Organiser or Stewards.
- **Formation Lap:** The lap immediately prior to the race start, used for tyre and system warm-up and grid assembly. All drivers must follow prescribed procedures; overtaking is only permitted in case of incapacitation as specified in the Regulations.

1.10.5 Safety Car and Virtual Safety Car (VSC)

- **Safety Car:** An official vehicle deployed on-track to control the speed and order of the field under hazardous or incident conditions. All cars must reduce speed, maintain position, and follow the Safety Car unless otherwise directed.
- **Virtual Safety Car (VSC):** An electronic control mode requiring all competitors to maintain a prescribed reduced speed, as measured by the Organiser's timing system, replacing the need for a physical Safety Car where appropriate.

1.10.6 Track Limits

The outer boundary of the circuit as defined by the white lines and kerbs (unless otherwise specified in the Supplementary Regulations). Persistent, repeated, or egregious breaches of track limits—where a car leaves the circuit with all four wheels—may result in warnings, penalties, or exclusion at the discretion of the Stewards.

1.10.7 Force Majeure

Circumstances or events beyond the reasonable control of the parties, including but not limited to natural disasters, war, riot, or government intervention, which excuse non-compliance with the Regulations, subject to

the Stewards' determination. Any claim of Force Majeure must be promptly reported to the Organiser in writing, with supporting evidence.

1.11 Technical List, Homologation, and Abbreviations

1.11.1 Components Classification

A component is recognised as classified in the Series Technical List if, and only if, both its supplier and model or part number have been formally homologated, published, and approved by the Organiser. The Technical List is definitive and binding for all standardised, mandatory, or optionally permitted parts, as referenced throughout these Regulations.

1.11.2 Open and Closed Sections

A section or system is considered "closed" if it is fully contained within the boundary or physical envelope defined by the Regulations, homologation drawings, or Technical Passport, with no external access, venting, or linkage except as specifically allowed. All other configurations are considered "open." The distinction between open and closed sections shall be interpreted by the Organiser and/or Technical Delegate in case of dispute.

1.11.3 Mass Damper

A mass damper is any device or system that possesses at least one degree of freedom relative to the car's sprung mass, is designed or utilised for the sole or primary purpose of absorbing or dissipating oscillatory energy (e.g., from vertical or lateral wheel movement), and does not contribute to structural or load-bearing requirements. Devices with compliance or movement in excess of what is required for operational necessity may be classified as mass dampers at the discretion of the Technical Delegate.

1.11.4 Abbreviations and Acronyms

For ease of reference and regulatory certainty, the following abbreviations and acronyms are used throughout these Regulations (the list below is non-exhaustive; additional terms may be included in the official Series Glossary or Technical Bulletins):

Abbreviation	Definition
LES	La'Bergitla Endurance Series
MGU	Motor Generator Unit
MCU	Motor Control Unit
RESS	Rechargeable Energy Storage System
DRS	Data Recording System
BoP	Balance of Performance
EoT	Equivalence of Technology
ERS	Energy Recovery System
BMS	Battery Management System
VCU	Vehicle Control Unit
OBC	Onboard Camera
VSC	Virtual Safety Car

Note: The Organiser may publish and maintain an updated Abbreviations Table and Definitions List as a supplementary reference. Where ambiguity arises, the official Series Glossary shall prevail.

1.12 Cross-Reference Clause

Unless expressly modified, redefined, or superseded within a specific section, appendix, technical bulletin, or supplementary regulation, all definitions and interpretations set out in this Article shall apply *mutatis mutandis* throughout the entirety of the Series Technical and Sporting Regulations and any documents issued under their authority.

Where a conflict or ambiguity arises, the most specific and/or most recently issued provision, as determined by the Organiser or appointed Stewards, shall prevail.

For the avoidance of doubt, in any dispute regarding the meaning or applicability of a definition, the interpretation of the Organiser, the Technical Delegate, or the Stewards shall be final and binding, subject only to the appeals procedures set out in these Regulations.

End of Article 1

Article 2: General Principles

As issued by the Automobili La'Bergitla Squadra di Motorsport Technical Division

2.1 Regulatory Framework and Hierarchy

2.1.1 General Authority and Precedence

The Automobili La'Bergitla Endurance Series ("the Series") shall be governed solely and exclusively by the regulatory framework promulgated, issued, and maintained by the Series Organiser. For all purposes of administration, sporting, technical, and financial governance, the following documents—collectively referred to as the "Regulations"—shall apply in the strict order of precedence set out below:

- a. The Technical Regulations of The Automobili La'Bergitla Endurance Series ("Technical Regulations");
- b. The Sporting Regulations of The Automobili La'Bergitla Endurance Series ("Sporting Regulations");
- c. The Financial Regulations of The Automobili La'Bergitla Endurance Series ("Financial Regulations");
- d. Any official bulletins, directives, clarifications, supplementary regulations, and instructions formally issued by the Organiser, the appointed Stewards, or the Technical Delegate.

2.1.2 External References and Benchmarking

Where these Regulations reference FIA standards, FIA Appendix J, or any external technical or sporting standards, such references are provided strictly for harmonisation, benchmarking, or guidance purposes. They shall not confer any authority, governance, or jurisdiction to the FIA or any other third-party body. The final and exclusive authority in all matters pertaining to interpretation, application, and enforcement of these Regulations rests solely with the Series Organiser and its appointed officials.

2.1.3 Language and Interpretation

In the event of any inconsistency, ambiguity, or dispute regarding the interpretation of the Regulations, the English-language version shall prevail and take precedence over any translations or interpretations. Any doubt as to interpretation shall be resolved exclusively by the Organiser or its appointed Stewards, whose decision shall be final and binding, subject only to the appeals procedures set forth herein.

2.1.4 Scope and Binding Nature

The Regulations are binding upon all Entrants, Competitors, Teams, Manufacturers, and all affiliated or associated personnel, agents, or contractors from the moment of entry, registration, or participation in any aspect of the Series.

2.2 Amendments, Evolution, and Supremacy

2.2.1 Right of Amendment

The Regulations may be amended, supplemented, or revised at any time and from time to time by the Organiser, acting in its sole discretion. Amendments shall take effect upon publication or notification by means of official bulletins, circulars, or formal revisions, in accordance with Series procedures.

2.2.2 Immediate Measures and Extraordinary Powers

The Organiser expressly reserves the right to introduce immediate amendments, suspensions, waivers, or additional requirements at any time, including during an Event or Season, where such measures are deemed necessary or expedient in the interests of:

- (a) safety of participants or spectators,
- (b) fair competition,

- (c) preservation of the integrity and reputation of the Series,
 - (d) force majeure or other unforeseeable circumstances, or
 - (e) compliance with applicable law, regulation, or order of any competent authority.
- Such measures shall have immediate and binding effect upon notification.

2.2.3 Binding Nature and Duty of Awareness

All Entrants, Competitors, Teams, Manufacturers, and associated personnel are deemed to have full knowledge of, and are strictly bound by, the most current and up-to-date version of the Regulations as published or notified by the Organiser, including all amendments, addenda, and official communications, regardless of individual receipt or acknowledgement.

2.2.4 Written Supremacy and Exclusion of Custom

No oral statement, informal communication, prior course of dealing, or established custom shall prevail over, modify, or supersede the explicit written requirements of the Regulations. Only official written communications from the Organiser shall have binding effect.

2.3 Safety, Integrity, and Risk Management

2.3.1 Paramountcy of Safety and Integrity

The foremost and overriding objective of these Regulations is the safety and welfare of all participants, officials, and spectators, as well as the preservation of sporting integrity, fair play, and the orderly conduct of the Series.

2.3.2 Absolute Responsibility of the Competitor

Each Competitor is solely, comprehensively, and unconditionally responsible for ensuring that their car, all components, and associated systems—including design, manufacture, assembly, software, operation, and maintenance—are safe under all foreseeable and reasonably foreseeable conditions, including (but not limited to) accident, malfunction, misuse, or component/system failure scenarios.

2.3.3 Priority of Safety-Critical Controls and Logic

Any technical system, control logic, or software with the potential for conflicting driver inputs (including, but not limited to, simultaneous accelerator and brake commands) must be engineered such that braking demand always takes absolute and uninterruptible priority. In the pit lane, any braking command must immediately and unequivocally override any propulsion or torque command; any instance of positive torque being delivered in contravention of a braking command in the pit lane shall be deemed a hazardous and unacceptable condition.

2.3.4 Prohibition on Safety Circumvention

No car, system, feature, or component may be designed, engineered, programmed, or implemented with the purpose or effect of circumventing, disabling, or otherwise bypassing any safety requirement, intent, or control stipulated in these Regulations, or issued by the Organiser or the Stewards.

2.3.5 Unfettered Authority of the Series Officials

The Organiser, the Stewards, and the Technical Delegate retain the unfettered and absolute right, at their sole discretion, to exclude, disqualify, or impose any sanction upon any vehicle, Competitor, Entrant, Team, or individual whose car, conduct, or behaviour is considered unsafe, unsporting, detrimental to safety, contrary to the letter or spirit of the Series, or otherwise prejudicial to the interests of fair competition or the reputation of the Series.

2.4 Compliance, Inspection, and Enforcement

2.4.1 Continuous Regulatory Compliance

All cars, systems, components, and software submitted for competition must remain in full, uninterrupted

compliance with these Regulations at all times during an Event—including, but not limited to, free practice, qualifying, warm-up, race, and post-race scrutineering—unless explicitly exempted by an official bulletin or written waiver from the Organiser.

2.4.2 Burden of Proof and Active Demonstration

The burden of proof for regulatory compliance rests unequivocally with each Competitor at all times. Competitors must proactively demonstrate compliance to the complete satisfaction of the Technical Delegate, Stewards, and Organiser, including (but not limited to):

- Unrestricted cooperation with all physical and digital inspections;
- Prompt and complete provision of all technical documentation, homologation data, and supporting materials;
- Unimpeded access for examination of hardware, software, and data, as well as access to relevant personnel.

2.4.3 Verifiability of Compliance

All cars and components must be designed, manufactured, and assembled such that compliance can be directly, transparently, and non-destructively verified through physical inspection of hardware, materials, and associated equipment. Compliance may not be established solely by inspection of software, data, or simulation models.

2.4.4 Digital and Software Compliance Assessment

For any system, device, or function incorporating electronic, digital, or programmable control, compliance may be assessed by direct inspection of hardware, embedded firmware, application software, and all associated data. Upon demand, the Competitor shall provide all relevant information—including, but not limited to, source code, binaries, logs, calibration files, configuration settings, and architecture documentation—in the original, native formats required by the Organiser.

2.4.5 Advanced Inspection Methods and Data Requirements

The Organiser reserves the right to employ advanced verification methods—such as 3D scanning, laser metrology, digital twin analysis, and direct comparison to homologated CAD models—to confirm that the physical car and all components correspond exactly to their approved design. Competitors are required to supply original-format CAD files, drawings, and all requested supporting documents immediately upon request.

2.4.6 Measurement Protocols

All measurements, checks, and technical verifications will be performed with the car stationary on a certified flat reference surface, using methods and equipment approved or provided by the Organiser, unless otherwise specified in these Regulations or by official communication.

2.4.7 Consequences of Obstruction or Non-Cooperation

Any failure or refusal to provide full access, required data, or meaningful cooperation as set out above shall constitute a material breach of these Regulations, and may result in immediate exclusion, disqualification, or any other sanction deemed appropriate by the Organiser, Stewards, or Technical Delegate.

2.5 Innovation and New Technologies

2.5.1 Prior Authorisation Required

No new system, device, software, or technology—mechanical, electrical, electronic, digital, or procedural—may be introduced, installed, or utilised on any car or within any Team operation unless:

- (a) its use is **explicitly permitted** by these Regulations, or
- (b) **prior written approval** has been granted by the Organiser.

This requirement extends without limitation to systems involving propulsion, energy storage or management, communications, control logic, driver aids, software algorithms, data acquisition or transmission, active or passive safety, and any system or feature that may affect technical compliance or sporting outcome.

2.5.2 Submission and Review Process

All proposals for new technologies, systems, or methodologies must be submitted to the Organiser in writing and must include:

- Full technical documentation and schematics;
- Comprehensive safety and reliability assessments;
- A detailed statement of purpose, function, and intended competitive impact;
- Any relevant simulation, test, or validation data as requested by the Organiser.

The Organiser reserves the right to require additional information, practical demonstration, simulation, or supervised physical testing prior to authorisation and may impose specific conditions or limitations on any approved innovation.

2.5.3 Organiser's Right to Regulate

The Organiser may, at its sole and absolute discretion, restrict, condition, suspend, or withdraw approval for any new technology, system, or process at any time and without liability, where deemed necessary for safety, fair competition, technical integrity, or compliance with the spirit and intent of the Series. No Competitor, Manufacturer, or other party shall have recourse or claim for any loss, damage, or cost arising from such action.

2.6 Responsibilities of Competitors and Teams

2.6.1 Universal Compliance Obligation

Each Competitor and Team bears the absolute and non-delegable responsibility to ensure that their car(s), all associated personnel, and all related activities strictly comply with these Regulations at all times, including during preparation, transport, participation, and post-event procedures. This obligation extends to ensuring that every employee, contractor, consultant, and any other person acting on their behalf is fully and demonstrably informed of their duties, obligations, and the requirements of the Series.

2.6.2 Culture of Integrity and Reporting

Competitors and Teams must ensure that all staff, agents, and affiliates are informed of, and have unimpeded access to, any official ethics and compliance hotline, whistleblowing or incident reporting mechanism established or approved by the Organiser. Teams shall actively promote a culture of compliance, integrity, transparency, and safety awareness at all levels, and must not impede, discourage, or retaliate against any person reporting a genuine concern or suspected breach.

2.6.3 No Excuse for Ignorance

Ignorance of the Regulations, including any amendments, clarifications, or official bulletins issued by the Organiser, shall not constitute a defence or excuse for non-compliance or breach. All participants are expected to maintain up-to-date knowledge of all regulatory requirements as a continuing condition of entry and participation.

2.7 Data, Design Files, and Information Exchange

2.7.1 Mandatory Data and Information Provision

Upon written or verbal request by the Organiser, Stewards, or Technical Delegate, all Competitors shall provide unrestricted, timely access to all design data, digital files, technical drawings, embedded system software, source code, calibration files, simulation data, and all associated documentation or records. Such information

must be provided in the format, medium, and within the time period specified by the Organiser or its appointees. This obligation applies whether the information is stored locally or on remote servers/cloud platforms, and extends to all versions, iterations, and supporting materials necessary for compliance verification.

2.7.2 Enforcement and Sanctions for Non-Compliance

Any refusal, obstruction, or unreasonable delay in providing the required information shall be considered a material breach of these Regulations and may result in immediate sanctions at the sole discretion of the Organiser or Stewards. Such sanctions may include, but are not limited to: exclusion from the current Event, suspension or revocation of homologation, loss or forfeiture of points and results, financial penalties, or further disciplinary measures as deemed appropriate for the severity of the non-compliance.

2.7.3 Confidentiality, Intellectual Property, and Permitted Use

All data and information provided by Competitors shall be treated in accordance with the confidentiality, intellectual property, and data protection provisions set forth in these Regulations and in any applicable data-sharing or homologation agreement between the Competitor and the Organiser. However, the Organiser reserves the right to disclose or use any such information strictly as necessary to enforce the Series rules, resolve disputes, ensure safety, investigate incidents, or comply with legal and regulatory obligations. Disclosure to third parties, if required, shall be limited to what is necessary for compliance, safety, or technical evaluation and shall be subject to equivalent confidentiality undertakings wherever practicable.

2.8 Measurement, Scrutineering, and Technical Control

2.8.1 Methods and Procedures

All regulatory measurements, inspections, and compliance checks shall be performed in accordance with the methods, procedures, and specifications determined solely by the Organiser. Such methods may be communicated in the Technical Regulations, Supplementary Regulations, Technical Directives, or other official communications. The Organiser reserves the right to update or clarify procedures at any time and to mandate the use of specific measurement tools, protocols, and calibration standards.

2.8.2 Inspection Rights and Timing

The Organiser, Stewards, and Technical Delegates reserve the right to conduct physical inspections, data audits, non-destructive and destructive testing, and software and firmware verifications on any car, component, or system at any time during an Event. Such checks may occur during, before, or after official sessions, including outside normal scrutineering hours and without prior notice to the Competitor. This authority extends to random spot-checks and targeted investigations.

2.8.3 Competitor Obligations During Inspection

All Competitors must make their cars, all relevant systems, components, documentation, and supporting data fully available for inspection immediately upon request, and must provide all necessary tools, access, passwords, technical assistance, and competent personnel as required by the Technical Delegate or appointed Scrutineers. Any delay, obstruction, or lack of cooperation may be deemed a breach of these Regulations and subject to sanction.

2.8.4 Tampering and Modification Prohibition

No modification, removal, tampering, or adjustment to any car, system, or component is permitted once a scrutineering seal, marking, or other official identifier has been applied, except with the express written permission of the Organiser or Technical Delegate. Any breach or attempted circumvention of this provision may result in immediate exclusion from the Event, further disciplinary measures, or referral for investigation of intent to defraud.

2.9 Overarching Principle and Burden of Proof

2.9.1 Burden of Proof on Competitors

It is a core tenet of these Regulations that the burden of proof regarding compliance rests solely and continuously with the Competitor and Team, irrespective of the means or method of inspection, enforcement, or review adopted by the Organiser.

2.9.2 Right to Request Additional Evidence

The Organiser reserves the right to require additional evidence, declarations, or demonstrations of compliance at any time.

2.9.3 Consequences of Non-Compliance or Obstruction

Non-compliance, failure to cooperate, or attempts to mislead or obstruct the inspection or enforcement process may result in immediate exclusion, loss of points, suspension, or further disciplinary action at the discretion of the Organiser.

2.10 Scope and Supremacy

2.10.1 Supremacy of the Regulations

The provisions of this Article, and of the Regulations in their entirety, are binding and supreme over all other agreements, arrangements, or understandings between any party and the Organiser, except where expressly stated otherwise in writing by the Organiser.

2.10.2 Final Authority of the Organiser

The Organiser shall have the final and unappealable authority in all matters of regulatory interpretation, enforcement, and adjudication arising under these Regulations.

End of Article 2

Article 3: Homologation Procedure

As issued by the Automobili La'Bergitla Squadra di Motorsport Technical Division

3.1 Homologation Form and Scope

3.1.1 Designated and Controlled Components

In The Automobili La'Bergitla Endurance Series (the "Series"), all components classified by the Organiser as "**Designated**" or "**Controlled Parts**" are subject to strict homologation requirements and, where applicable, must be sourced exclusively from Organiser-Approved or Official Suppliers.

These components are fundamental to the performance, safety, technical equity, and integrity of the Series. Their design, materials, and manufacturing processes must be declared in full within the official Homologation Form prior to their use in competition.

Controlled Parts subject to homologation and/or exclusive supply include, but are not limited to:

A. Primary Safety and Structural Systems

- **Survival Cell:** The central integrated safety cell housing the driver and, where applicable, the energy storage system (RESS). Must meet Series crash, fire, and extraction standards, including modular mounting for RESS and driver protection in all axis impacts.
- **Impact Absorbing Structures:**
 - **Front Impact Absorbing Structure (FIAS):** Designed to absorb frontal collision energy.
 - **Side Impact Absorbing Structures:** Integrated or modular, designed for lateral crash scenarios.
 - **Rear Impact Absorbing Structure (RIAS):** To protect against rearward impacts.
 - **Secondary Rollover/Crash Structure:** Additional upper safety structure for protection during rollovers or multi-axis incidents.

B. Suspension and Kinematic Assemblies

- **Front & Rear Uprights:** All wheel carrier assemblies, including bearing housings, sensor integration, and load transfer points.
- **Front Suspension System:** All assemblies and linkages (wishbones, rockers, dampers, springs, anti-roll bars) connecting the survival cell/chassis to the wheel carriers.
- **Rear Suspension System:** (if supplied under "Controlled Part" status)
- **Power Steering Assembly:** Including all mechanical, hydraulic, and electronic assist systems (steering box, column, actuators, sensors, ECU).

C. Powertrain, Driveline & Energy Storage

- **Steering Wheel Interface Unit (SIU):** Including all embedded control hardware, displays, and communication links.
- **Front Driveshafts and Rear Common Driveshafts:** Including CV joints, torsional dampers, and mounting hardware, designed for compatibility with both front and rear powertrains.
- **Front Powertrain Kit (FPK):** All front axle power modules, including Motor Generator Unit (MGU), Motor Control Unit (MCU), integrated gearbox/transmission, and relevant electronics.

Automobili La'Bergitla - 2030 - 2031 Endurance Series Technical Regulations
Confidential & Proprietary | © 2025 Automobili La'Bergitla. All Rights Reserved.

Unauthorised distribution, reproduction, or disclosure of this document is strictly prohibited. For official use only.

- **Rear Powertrain Kit:** (if a single-supplier system)
- **Rechargeable Energy Storage System (RESS):** The full battery pack, super/ultracapacitors, module housings, safety cut-off, and HV/thermal interfaces.
- **RESS/FPK Cooling System:** Radiators, heat exchangers, fluid pumps, piping (liquid or phase-change), DC charging inlets and interfaces, temperature sensors, and insulation.

D. Chassis & Vehicle Control Systems

- **Chassis Sensors:** All sensors critical to vehicle state (IMU, accelerometers, steering angle, ride height, temperature, pressure, current/voltage, wheel speed, load cells, crash sensors), including Series-mandated CAN/communications protocols.
- **Electronic Components:**
 - **High-Voltage (HV):** Contactors, safety interlocks, isolation monitoring, HV fuses.
 - **Low-Voltage (LV):** Control units, data loggers, BMS interface, marshals' panels, driver controls.
 - **Lights & Switches:** Safety light, rain light, neutral and marshal switches, driver switch panel, display units.
 - **Official Data Logger Hardware:** As mandated by the Organiser for performance and compliance monitoring.

E. Braking, Wheel, and Aero Assemblies

- **Brake Assemblies:** Calipers, discs, pads, brake-by-wire (BBW) actuators for both front and rear. Includes pressure and temperature sensors.
- **Pedal Box:** Master cylinders, throttle position and force sensors, brake balance adjusters, integrated electronics, physical stops.
- **Front & Rear Rims:** Construction, finish, design, and mounting must meet Series technical and safety standards.
- **Aerodynamic Devices:**
 - **Front and Rear Wings:** All main planes, flaps, and endplates.
 - **Additional Devices:** Dive planes, air deflectors, ground effect shields, drag reduction systems (if specified in Series Regulations).
- **Bodywork:** All aerodynamic and non-aero body panels (including modular quick-change panels for pit interventions), energy-absorbing crash structures, and mandated livery zones.

F. Cockpit and Human Safety Equipment

- **Cockpit Components:**
 - **Extractable Seat:** Must allow for rapid driver removal.
 - **Headrest, Leg Padding:** Conforming to Series impact and fire standards.
 - **Fire Suppression System:** Fully integrated with rapid activation and Series-approved suppressant.
- **Emergency Systems:** Circuit breakers, emergency cut-off switches, rescue markings, and all required cockpit signage.

G. Advanced Systems (Where Applicable)

- **Battery Swap Modules & Mechanisms:** All systems, interfaces, actuators, locking mechanisms, HV disconnects, and fast-swap adaptors for Series-approved battery exchange.
- **Energy Recovery and Regeneration Hardware:** (if mandated as common or controlled parts)
- **Any other part or system declared as “Controlled” or “Safety-Critical” by the Organiser, including future-proofed innovation zones, cybersecurity modules, or interoperability standards.**

The Organiser reserves the right to update, expand, or restrict the list of Controlled Parts at any time, including during the competition season, through official technical bulletins or supplementary regulations. Changes may be made for reasons of safety, fairness, technical progress, or to accommodate the introduction of new technologies or sustainability objectives. All participants are required to maintain immediate compliance with such directives.

All such Controlled Parts must be declared, documented, and submitted for full homologation approval before they may be introduced into competition, with the Organiser retaining the right to conduct random sample checks, enforce design freezes, and require additional testing at any stage.

3.2 Software and Cybersecurity Homologation

3.2.1 Mandatory Software Items

All control and embedded software (including firmware, middleware, and network stacks) that governs, interfaces with, or secures any of the following systems is **subject to mandatory homologation and continuous compliance monitoring**:

- **Vehicle Control Unit (VCU)**
- **Motor Control Unit(s) (MCU)**
- **Brake-by-Wire (BBW) System**
- **Power Distribution Box (PDB)**
- **DC-DC Converter(s) and related Power Electronics**
- **Steering Wheel and Interface Units (SIU)**
- **Energy Recovery System (ERS) and Regeneration Controllers**
- **Swap Mechanism, Charging, and Telemetry Modules**
- **Battery Management System (BMS)**
- **All Safety-Critical Programmable Devices** (fire suppression, HV isolation, traction control, etc.)
- **Artificial Intelligence or Machine Learning Components** (including driver assistance, predictive diagnostics, or adaptive energy management if present)
- **Any other programmable, networked, wireless, or cyber-physical system** involved in car operation, monitoring, pit-stop processes, or remote intervention.

Note: This list is non-exhaustive and may be updated at any time by the Organiser to reflect emerging technologies or evolving threats.

3.2.2 Submission, Documentation, and Access Requirements

For every homologated software item or system, **Manufacturers and Teams must provide the Organiser with:**

- **Full and detailed upload/download procedures** (step-by-step, for both bench and in-vehicle updating, including safety interlocks and roll-back methods)
- **Reference binary files** and their corresponding **cryptographic hashes/checksums** for secure verification
- **Comprehensive changelogs**, version control records, and calibration/configuration data (including mapping tables, thresholds, parameter limits, and override conditions)
- **Description of all communication protocols, network interfaces, and data buses** used by the software, including diagnostic ports and encryption schemes
- **Security and cyber-protection summary**, including:
 - Remote access and update capabilities (e.g., OTA updates, wireless pairing)
 - Authentication, access control, and encryption standards
 - Known vulnerabilities, “fail-safe” logic, and incident response procedures
 - Details of any machine learning model “training sets” or adaptive algorithms in use
- **Access for live demonstration, simulation, and/or bench test**, at the Organiser’s request, including “read-only” and “write” modes for full system interrogation
- **Detailed memory map** and documentation of all programmable device regions, bootloaders, and code integrity mechanisms
- **Upload/update tool(s) and their validation** (Organiser may require submission of the tools themselves or provision of secure remote access)
- **Software Bill of Materials (SBOM)**—full list of third-party libraries, modules, and components integrated into each control software image

All documentation must be supplied in the officially approved digital format and in English. The Organiser reserves the right to require additional translations or independent technical audits at any time.

3.2.3 Version Control, Updates, and Emergency Response

- **All software and firmware must remain locked at the version registered and homologated prior to each Competition.**
 - Any update, patch, or re-flash—whether for performance, reliability, or safety—requires explicit, written approval from the Organiser.
 - The Organiser may demand emergency or reliability updates at any time, and may impose compliance checks or technical audits, including “live” software hash verification, at any Event.
 - Unauthorised or undeclared modifications—regardless of intent—constitute a major technical breach.

3.2.4 Cybersecurity and Regulatory Transparency

**Automobili La’Bergitla - 2030 - 2031 Endurance Series Technical Regulations
Confidential & Proprietary | © 2025 Automobili La’Bergitla. All Rights Reserved.**

Unauthorised distribution, reproduction, or disclosure of this document is strictly prohibited. For official use only.

- **All software, firmware, communication protocols, and in-vehicle networking (wired or wireless) are subject to independent cybersecurity review, code audit, decompilation, and—if justified—reverse engineering by the Organiser or its appointed technical partners.**
- The Organiser may require:
 - Installation of regulatory “audit hooks,” logging agents, or intrusion detection software on critical control units
 - Participation in cybersecurity drills, remote-attack simulations, or penetration testing as a condition of entry or continued homologation
 - Submission of “digital twins” or reference virtual models for data traceability and integrity checks
- **Any unauthorised code changes, hidden functions, backdoors, or tampering—including intentional obfuscation or evasion—constitute a severe regulatory violation** and may result in immediate exclusion, financial penalty, revocation of homologation, or suspension of entry for the offending Team or Manufacturer.
- **All software supply chains must be transparent and verifiable.** If any open-source, third-party, or externally developed code is present, its provenance and licensing status must be disclosed.

3.2.5 Data Privacy and Ethics

- All homologated software must comply with Series-mandated data privacy and driver ethics policies, including protection of personal data, geolocation, and any sensitive telemetry.
- Use of AI or advanced analytics for “driver profiling” or “biometric data” requires Organiser review and approval, and must be implemented in accordance with Series data governance standards.

3.3 Homologation Process, Validity, and Control

3.3.1 Application, Submission, and Approval

Submission Procedures:

- All applications for homologation must be made on the official Series Homologation Form, provided by the Organiser.
- Applications must be submitted by the published deadline for each competition season and include:
 - Complete supporting technical documentation (drawings, bill of materials, digital models)
 - All required digital files (CAD, software, calibration, compliance data)
 - Physical samples if requested (for destructive/non-destructive testing)
 - Manufacturer or supplier catalogues, including all controlled or homologated parts, with part references, materials (as per ISO standards), and actual mass for all components over 100g (tolerance: $\pm 3\%$).

Review and Validation:

- The Organiser’s Technical Division shall conduct a thorough review for technical integrity, regulatory fit, safety compliance, and completeness.

- The Organiser may request clarifications, additional data, or live technical demonstrations, including virtual or physical inspection of parts or software.
- Only upon **written confirmation of approval** from the Organiser may a part, system, or software be considered officially homologated and eligible for Series competition.

3.3.2 Validity, Scope, and Limitation of Homologation

- Homologation is **specific to each version, batch, or revision** as detailed in the approved dossier. No change to the design, specification, manufacturing process, or software—including those for reliability, safety, supply chain, or performance—may be made without prior resubmission and written re-approval by the Organiser.
- Any modification, update, or substitution not declared and approved will immediately render the part/system non-compliant.
- **“Sample check” and spot verification procedures:** The Organiser reserves the right to randomly select and inspect parts, software, or systems at any event, without advance notice. This may include removal from a car for detailed laboratory or bench testing.
- The Organiser may require technical documentation and samples be supplied or demonstrated within specified timeframes, at any point during the season.

3.3.3 Compliance Monitoring and Enforcement

- **Continuous compliance:** All homologated parts, systems, and software must remain fully compliant with the approved Homologation Form, the Technical Regulations, and any supplementary bulletins or instructions throughout their life cycle and use in the Series.
- **Revocation and suspension:** The Organiser may suspend, revoke, or require amendment to a homologation at any time if evidence arises of non-conformity, undeclared modification, false declaration, misrepresentation, or risk to safety, fairness, or integrity.
- **Inspections:** The Organiser is empowered to conduct random, targeted, or event-triggered inspections—including in situ, at the team base, or at an external technical centre. Parts may be compared against original CAD drawings and all data originally submitted.
- **Duty of Cooperation:** Teams and Manufacturers must cooperate fully and without delay in all compliance investigations, including providing requested access to vehicles, components, data, and personnel.

3.3.4 Confidentiality, Intellectual Property, and Regulatory Sharing

- All homologation dossiers, supporting documents, CAD models, and software binaries are treated as confidential and proprietary to the Manufacturer or Supplier, except as disclosure is required for Series regulatory, compliance, dispute resolution, or safety purposes.
- The Organiser reserves the right to share submitted data with Series-appointed regulatory officials, technical consultants, or specialist laboratories for the sole purposes of compliance verification and inspection.
- **No commercial use, nor disclosure to other competitors, shall occur without the explicit written consent of the Manufacturer or Supplier.**

Automobili La’Bergitla - 2030 - 2031 Endurance Series Technical Regulations
Confidential & Proprietary | © 2025 Automobili La’Bergitla. All Rights Reserved.

- Intellectual property protections apply, but all submitted materials must remain available for regulatory scrutiny as a condition of Series entry.

3.3.5 Official Homologation Register

- The Organiser maintains a **Master Homologation Register** containing a full record of all homologated parts, systems, and software (including serial numbers, software hashes, versioning, and physical marking data) for every Manufacturer, Team, and Official Supplier.
- Access to this Register is strictly limited to authorised Series regulatory personnel, scrutineers, and the Stewards.
- The Register may be consulted at any time for the purposes of technical inspection, event scrutineering, compliance audits, protest resolution, or when directed by the Stewards in case of technical or sporting dispute.
- Any declared exceptions or part modifications (such as allowed adjustments to pedal pads, heel rests, harness attachments, carbon trimming up to 50mm for fitment, etc.) must be clearly annotated in the Register and pre-approved as “permissible variations.”

3.3.6 Technical Passport (Component Traceability)

- For each homologated chassis and major component, a **Technical Passport** must be maintained, completed, and presented prior to pre-event scrutineering.
- The Technical Passport must contain:
 - A description and serial number (or barcode/seal) for each major declared and controlled part
 - Date and batch of homologation, approval references, and (where required) photographic records
 - Clear statement of any fitted ballast, replacement parts, or permitted modifications
- The Technical Passport must always accompany the car and be updated in the event of replacement or repair of a controlled component.
- No car or major system may pass scrutineering or be eligible to race without an up-to-date and accurate Technical Passport.

3.3.7 Modifications and Exceptions

- Once homologated, no modification may be made to the design, construction, or configuration of the part, system, or software—except as:
 - Explicitly permitted in the Regulations or official bulletins
 - Approved as a minor fitment or maintenance adjustment (e.g., carbon panel trimming within specified tolerance)
 - Required by the Organiser for safety, sporting, or regulatory reasons
- Any breach of this Article may result in immediate exclusion, forfeiture of points, financial penalties, or disqualification from the Series at the discretion of the Stewards.

3.4 Modifications to Homologated Components

3.4.1 General Principle

Once a component, system, or software item has been homologated in accordance with these Regulations, **no changes or modifications** may be made to its design, construction, function, or calibration for the duration of the homologation period, **except as expressly provided below**.

3.4.2 Permissible Exceptions

In exceptional circumstances, modifications may be considered by the Organiser solely for the following reasons:

- **Safety:** To address an identified safety risk or to comply with newly issued safety directives.
- **Reliability:** To resolve a reliability issue that materially affects the integrity or performance of the car.
- **Driver Comfort/Accessibility:** To accommodate a justified, documented driver need (such as for medical or ergonomic reasons), provided that such changes do not confer a performance advantage.

3.4.3 Request and Approval Procedure

- All requests for modification must be submitted in writing to the Organiser's Technical Division, using the official Technical Note or Modification Request process.
- Requests must be accompanied by full technical details, supporting evidence (such as incident reports, test data, or expert opinions), and the precise specification of the proposed change.
- **Safety, reliability, or driver comfort-related changes:** The Organiser will review and render a decision no later than **30 days** prior to the car's intended presentation at pre-event scrutineering.
- **All other technical modifications:** A minimum lead time of **60 days** is required between the formal submission of a modification request and its potential introduction at scrutineering, unless expressly waived by the Organiser in the interest of safety.

3.4.4 Consultation and Transparency

Where a modification request may impact the competitive balance or common safety standards, the Organiser may consult with other Manufacturers, Teams, or Technical Advisors before granting approval. All approved changes will be published to the Series via official bulletin or technical note.

3.4.5 Prohibition of Unauthorised Changes

Any unauthorised modification, substitution, or circumvention of homologated parts, software, or systems—whether discovered pre- or post-event—shall be considered a **major regulatory breach**, and may result in exclusion, loss of points, or further sanction at the discretion of the Stewards.

3.5 Control Diagrams, Monitoring Algorithms, and Regulatory Documentation

3.5.1 Purpose and Scope

Control diagrams, system monitoring algorithms, and regulatory documents are developed and issued by the Organiser to assist in the real-time and post-event verification of compliance with the Series' Technical and Sporting Regulations.

3.5.2 Areas of Regulatory Monitoring

Control documentation may include, but is not limited to, the monitoring and limitation of:

- **Rechargeable Energy Storage System (RESS):** Energy flow, charging, and deployment limitations.

- **Maximum Power:** Control and limitations for power release, regenerative energy, and power maps.
- **Maximum Speed:** Including pit lane speed, Full Course Yellow (FCY), and other neutralisation protocols.
- **Launch Control:** Regulation of system behaviour during standing or rolling starts.
- **Throttle Mapping:** Approval and limitation of accelerator pedal calibrations and maps.
- **Attack Mode, Energy Boost, and Overtake Systems:** Control and limitations on duration, use, and deployment.
- **Pit Lane Charging/Swap:** Regulation of rapid charge or battery swap procedures.
- **Tyre Pressure Monitoring:** Control and limitation of minimum/maximum tyre pressures.
- **Any other system or sub-system deemed necessary for sporting, technical, or safety control** by the Organiser.

3.5.3 Publication and Access

- All current control diagrams, algorithms, and reference documents are published and accessible to Competitors via the official Series Technical Portal.
- Secure access credentials and documentation requests may be made in writing to the Technical Division.

3.5.4 Updates and Amendments

- The Organiser reserves the right to update, modify, or replace any control diagram or monitoring algorithm at any time for the purpose of technical fairness, safety, or regulatory compliance.
- The version in force for any event is that referenced in the most recent Technical Bulletin or Stewards' Decision published before the event.

3.5.5 Clarifications and Queries

- For any questions or clarifications regarding control diagrams, compliance monitoring, or interpretation of regulatory documents, Competitors should contact the Technical Division via the official Series communication channel.
- The Organiser may publish additional Q&A, clarifications, or interpretations as necessary to ensure transparency and consistent application of the Regulations.

End of Article 3

Article 4: Bodywork and Dimensions

As issued by the Automobili La'Bergitla Squadra di Motorsport Technical Division

4.1 General Requirements and Track Adaptability

All Series cars must be engineered for safe and reliable performance on both permanent circuits and temporary city tracks. Cars must remain fully operational and structurally sound on surfaces with irregular paving, variable road camber, and standard road kerbs, with no requirement for bespoke surface preparation. Bodywork and chassis integrity must be maintained in all competitive conditions.

4.2 Wheel Centre Line Definition

For all regulatory measurements, the centre line of each wheel is established as the midpoint between two straight edges positioned perpendicularly to the ground and against the outermost faces of the complete wheel at the tyre's central tread.

4.3 Height Measurements

All vertical measurements referenced in these Regulations shall be taken normal to the official reference plane, as established during homologation for each individual car.

4.4 Overall Dimensions and Limits

4.4.1 Maximum Width

The maximum overall width of the car, measured at its widest point with the steered wheels in the straight-ahead position, shall not exceed **2000 mm**.

4.4.2 Maximum Height

No part of the bodywork may exceed **1050 mm** above the official reference plane, with the sole exception of the homologated primary roll-over protection structure.

4.4.3 Maximum Length

The overall length of the car must not exceed **5100 mm**.

4.4.4 Overhangs

No component of the car may extend more than **1050 mm** forward of the front wheel centre line or more than **1050 mm** rearward of the rear wheel centre line.

4.4.5 Wheelbase

The distance between the front and rear wheel centre lines (wheelbase) must be **3000 mm**.

4.4.6 Track Width

The front and rear track widths must not exceed **1635 mm** each, measured at the centre of the tyre tread on each axle.

4.5 Bodywork Specification and Configurations

4.5.1 Original Specification

Bodywork must remain at all times in full conformity with its homologated specification, as detailed in the official Series Parts Catalogue issued by the Organiser and approved chassis manufacturer.

4.5.2 Permitted Configurations

Automobili La'Bergitla - 2030 - 2031 Endurance Series Technical Regulations
Confidential & Proprietary | © 2025 Automobili La'Bergitla. All Rights Reserved.

Unauthorised distribution, reproduction, or disclosure of this document is strictly prohibited. For official use only.

Only bodywork configurations expressly listed in the approved catalogue are eligible for competition use. Unless otherwise authorised by the Organiser, only the following two configurations may be utilised:

- **Low Downforce Configuration:** As per homologated reference specification.
- **High Downforce Configuration:** Formed exclusively by the addition or replacement of homologated supplementary bodywork parts as specified in the approved catalogue.

4.6 Step Plane and Ground-Facing Bodywork

The lowest edges of the step plane must be at least **25 mm** above the reference plane at all points. All bodywork facing the ground must present continuous, solid, rigid, and impervious surfaces under all conditions, with no allowance for relative movement with respect to the survival cell.

Manufacturing Tolerances

To account for manufacturing variability, the following tolerances apply:

- Reference plane surfaces: ± 2 mm
- Step plane surfaces: ± 5 mm
- Other homologated bodywork: ± 3 mm (relative to CAD data)
- Adjustable elements (e.g., wings, flaps): $\pm 1^\circ$ (relative to CAD and nominal position)

Skid Block

A rectangular skid block of minimum width **300 mm**, with front corners radiused at **50 mm ± 2 mm**, must be fitted directly beneath the reference plane.

The skid block shall contain seven holes in specified locations for post-competition measurement. After any Event, the thickness at any of these holes must not be less than **3 mm**.

4.7 Floor and Underside Construction

All surfaces on or bridging the reference and step planes, except transitional geometry, must be uniform, solid, continuous, and rigid. No floor section may exhibit flexibility or movement relative to the survival cell, and all materials must be impervious to air and fluid ingress.

4.8 Aerodynamic Devices, Turning Vanes, and Cooling Ducts

Between the rear face of the survival cell and the front of the rear impact structure, only auxiliary cooling ducts—dedicated solely to electrical powertrain component cooling—are permitted.

All auxiliary ducting and fans must be physically inspected and justified by function, location, and scale.

No optional or catalogue bodywork parts may be used in these assemblies except as explicitly authorised.

All non-homologated aerodynamic appendages, including turning vanes, barge boards, and fins, are strictly prohibited.

4.9 Ground Clearance and Unsprung Parts

No system other than the homologated suspension may alter ground clearance at any time.

No sprung component may extend below the reference plane, except for the required skid block.

No unsprung component may be closer than **40 mm** to the ground, except for rims, tyres, and permitted vanes/fins.

4.10 Aerodynamics – Compliance, Rigidity, and Adjustability

All aerodynamic elements must fully comply with bodywork regulations and be rigidly fixed to the sprung structure.

Adjustments to aerodynamic devices may only be performed using tools and when the vehicle is stationary.

No movable aerodynamic elements, whether driver-activated or automatically controlled, are permitted while the car is in motion.

No additional gurneys, trim tabs, or angle brackets may be fitted beyond those specified in the homologated catalogue.

Bodywork Flexibility

The Organiser reserves the right to subject any bodywork component to load and deflection testing to ensure compliance with rigidity requirements under aerodynamic loading.

4.11 Bodywork Taping and Temporary Repairs

Single-sided, self-adhesive flexible materials up to **1 mm** in total thickness may be applied to any air-wetted surface for repair, sealing, or assembly.

For skid block sealing, only a single layer of double-sided adhesive less than **1 mm** thick is permitted.

There are no restrictions on the two-dimensional shape or coverage of taping for these purposes, subject to compliance with the above requirements.

End of Article 4

Article 5: Mass

As issued by the Automobili La'Bergitla Squadra di Motorsport Technical Division

5.1 Minimum Mass

At all times during Competition, the minimum total mass of the car—including the driver, seat, driver's personal equipment, and all fluids—shall not be less than **TBC kg** (final figure to be determined by the Organiser and notified in the Technical Bulletin).

- When required for regulatory checks, if the car is not fitted with standard “all-weather” tyres, it shall be weighed on a set of reference tyres as specified by the Organiser's Technical Delegate.
- The combined weight of the driver, including seat foam, homologated extractable seat shell, and all mandatory driving apparel, must not be less than **82 kg** during any Competition. The Organiser may weigh any combination of these items at any time.

5.1.1 Seat Foam Declaration

The weight of each driver's seat foam must be declared at the first event in which the driver participates. The reference weight may be updated by the Technical Delegate at any time during the season should circumstances require.

5.2 Mass Distribution

The minimum and maximum permitted mass distribution (with driver and seat fitted) shall be published by the Organiser in the Homologation Dossier and/or Series Technical Bulletin.

- For homologation and technical inspection purposes, a reference driver mass of **82 kg** (including seat and insert) will be used.

5.3 Ballast

Ballast may be used to achieve the minimum car mass or required mass distribution, subject to the following conditions:

- All ballast must be secured such that removal requires the use of tools.
- Ballast must be mounted directly to the primary structure (keel) of the car using a minimum of four M8 threaded fasteners beneath the survival cell, unless otherwise approved.
- If additional ballast locations beyond the standard position are required, their location must be declared in the Homologation Form and approved by the Technical Delegate.
- Ballast intended solely to achieve the required minimum driver weight (Article 5.1) must be rigidly attached to the seat or seat mounting, using fasteners and methods specified by the Organiser.
- The Technical Delegate may require any ballast to be sealed for compliance checks at any time.

5.4 Prohibition on Mass Alteration During Competition

The addition to the car of any liquid, solid, or other material—other than standard fuel, lubricants, or consumables specified in the Series Technical Regulations—or the replacement of any component with one of greater mass during a Competition is strictly forbidden.

- Should a component require replacement during a race or official session, the new component must not exceed the weight of the original, as established in the homologated specification or pre-race scrutineering.

**All mass and ballast requirements are subject to inspection and enforcement at any time by the Organiser.
Non-compliance may result in exclusion from results or additional penalties as determined by the Stewards.**

End of Article 5

Article 6: Electric Powertrains

As issued by the Automobili La'Bergitla Squadra di Motorsport Technical Division

6.1 General Requirements

6.1.1 Architecture & Control

- Each car may use no more than two Motor Generator Units (MGUs): one dedicated to the front powertrain and one to the rear powertrain.
- All MGUs must be formally homologated by the Organiser and listed on the Official Homologation Register before use in Competition.
- Both MGUs and their corresponding Motor Control Units (MCUs) must be affixed exclusively to the sprung mass of the vehicle.
- MGUs and MCUs must be entirely contained within either the survival cell or the principal rear structure as defined in the homologation dossier, ensuring protection from impact and isolation from unsprung components.

6.1.2 Thermal Management

- Active cooling systems (air or liquid) are permitted for front and rear MGUs, MCUs, DC-DC converters, Vehicle Control Units (VCU), and both front and rear gearboxes.
- Design and specification of any thermal management system must be declared in the Homologation Dossier and may be reviewed for compliance at any time.

6.2 Front Powertrain Specification

6.2.1 Front MGU

- The front MGU must be homologated and, where required, supplied by the Organiser's Approved Supplier.
- The MGU must be directly and permanently linked only to a front limited slip differential, with no alternate torque transfer path permitted.

6.3 Rear Powertrain Specification

6.3.1 Rear MGU & MCU

- Manufacturers must homologate one complete rear MGU and MCU specification per homologation cycle.
- The minimum lamination thickness of any part of the rear MGU must be at least **0.05 mm**.
- The maximum permissible rotor speed of the rear MGU is **100,000 rpm**.
- The rotor must have non-variable inertia: no degree of freedom is allowed between individual rotor components.

6.3.2 MCU DC Bus Topology

- The MCU DC bus topology must be homologated for each car type.
- All devices connected to the DC bus (including, but not limited to, MGU phase power modules, discharge circuits, EMC filters, voltage monitoring hardware) must be declared in the Homologation Form. Each device must be solely for driving the MGU and safe operation of the inverter.
- The combined electrical resistance of all auxiliary devices (other than the MGU) connected to the power bus must never be less than **255 Ohms** at any time.
- Switchable devices capable of altering the resistance of the AC phase bus are prohibited.
- Manufacturers may not enter into exclusive supplier contracts for MCU power modules, except where the modules are developed and produced entirely in-house.

6.4 Cooling Devices and Restrictions

6.4.1

- The use of adjustable blanking devices for cooling of the rear powertrain is authorised, provided they are homologated.
- Phase change cooling systems are prohibited, except within specific electronic housings, and are limited to a total of 200 grams per car within the Manufacturer's Perimeter.

6.5 Rechargeable Energy Storage System (RESS) – General Provisions

6.5.1 Design & Installation

- The RESS must be homologated by the Organiser and may only be supplied by an Approved Supplier. Only the specified RESS can be fitted to the car.
- RESS must be installed rearward of the rear bulkhead of the survival cell, within the boundaries defined by the homologation documentation.
- The compartment must be fire-resistant (minimum UL94 V0), robust, and fluid-tight, with comprehensive isolation against short circuits and ingress of RESS fluids into the cockpit.
- In the event of a module or cell failure, the RESS must automatically disconnect from the HV circuit, and design must ensure that thermal propagation cannot result in fire spreading beyond the origin cell.
- Minimum clearance and creepage distances must comply with ISO and Series-specific standards, as documented in the Homologation Dossier.

6.5.2 RESS Safety Certification

- The RESS must be certified to UN 38.3 (transportation safety). Certification for the battery transportation case to UN 3480 is also required.
- The Organiser's Approved Supplier must provide comprehensive cell chemistry, operational limits, and a contingency plan for crash/fire response, including a battery characteristic diagram showing voltage, power, temperature, and state of charge limits.

6.5.3 Energy and Power Flow Limitations

- Maximum power output from the RESS is **600 kW** total: no more than **350 kW** via the rear powertrain, and no more than **250 kW** via the front powertrain.
- Maximum power flow into the RESS (regeneration or charging) is **700 kW** total, with no more than **350 kW** each to front and rear powertrains.
- Maximum net energy used during a race is **55 kWh** (to be confirmed and stated in Event Supplementary Regulations).
- Maximum additional net energy via fast charging in-race is **4.05 kWh** (subject to confirmation).
- All propulsion energy must be drawn solely from the homologated RESS; other energy storage is limited to specified capacitors (1mF max per powertrain and per DC-DC function).

6.5.4 Electrical System Integration

- The HV bus of the DC-DC converter may only be connected to the designated RESS connector; it must not interface with any other HV bus.
- Power supplied to the DC-DC converter must not be used directly or indirectly for propulsion or braking.
- A maximum of two DC-DC converter units is permitted per car.

6.5.5 Voltage and Safety Limits

- The maximum system voltage anywhere in the car (excluding MGU phases) must not exceed **1000 V**.
- Complete and up-to-date details of cell chemistry, handling, and safety must be provided and made available to the Organiser.

6.5.6 Battery Management System (BMS)

- A BMS must be fitted to all RESS, with integrated temperature control, overvoltage/undervoltage protection, isolation monitoring, and provisions to prevent thermal runaway or propagate battery fire.
- The BMS must function at all times whenever the car is powered.

6.6 Sensors and Data

- All sensors and monitoring devices required for regulatory enforcement, energy metering, safety, or power management must be specified and approved by the Organiser.
- One complete and isolated sensor suite must be available to the Organiser for independent verification at any time.

6.7 Miscellaneous

- Any specification not expressly covered by these Regulations requires prior written approval from the Organiser.
- All technical information, functional diagrams, and electrical schematics must be submitted and kept up to date in the Homologation Dossier.
- The Organiser reserves the right to modify technical limits, subject to advance notice, for safety, sporting fairness, or to maintain technological parity within the Series.

End of Article 6

Article 7: Electrical Equipment and Safety Provisions

As issued by the Automobili La'Bergitla Squadra di Motorsport Technical Division

7.1 General Electrical Safety

All electrical systems, installations, and safety devices must comply with the Series' technical standards and homologation requirements. High-voltage, low-voltage, and auxiliary systems must be robustly segregated, protected, and isolated to guarantee operational safety for drivers, team personnel, and marshals at all times.

7.2 Vehicle Control Unit (VCU) Supply

- The Vehicle Control Unit (VCU) must be powered exclusively by an auxiliary battery, independent from the traction battery.
- The VCU and all critical control electronics must remain operational for at least 15 minutes following isolation of the main traction battery system.

7.3 Power Electronics

- All high-voltage power electronic devices (MCU, inverter, DC-DC converter, VCU) must be integrated within the vehicle's protected architecture and isolated from the cockpit and driver access.
- All control electronics must incorporate thermal, overcurrent, and isolation monitoring protections.

7.4 General Circuit Breaker and Emergency Shutdown

- Each car must be equipped with a General Circuit Breaker (GCB) or equivalent master isolation device with sufficient capacity to immediately disconnect all high-voltage and auxiliary systems.
- The GCB must be operable by a red, clearly marked button accessible to the seated and belted driver and by emergency personnel from outside the car.
- Operation of the GCB must also be possible remotely via the driver master switch, extinguisher triggers, and neutral switches.
- All emergency cut-off triggers must be operable within 30 seconds of an incident, regardless of vehicle status or movement, with robust fail-safe timeouts.

External Emergency Handles:

- Two external handles, one on each side at the base of the main roll structure, must enable remote actuation by a hook or similar device.
- These must not be covered and must be marked with a red "E" (80 mm high, 8 mm line width) inside a 100 mm white circle with a red border.

Neutral Switch:

- A recessed, upward-facing neutral isolation button must be fitted atop the survival cell, within 150 mm of the car's centerline and cockpit opening front edge. It must be impossible to accidentally re-energize the car from this switch.

- Marking: Red spark in a white-edged blue triangle (base ≥ 120 mm).

Crash and Automatic Shutdown:

- Upon impact or power circuit fault, all energy sources must be immediately isolated and the full RESS disconnected automatically by contactors.
- The crash/failure isolation arrangements must be validated in the car's Homologation Failure Mode Analysis.

7.5 Data Acquisition

Permitted Sensors:

- Only sensors specified and homologated by the Organiser may be installed.
- Direct vehicle speed measurement via radar, GPS, or dynamic pressure (outside permitted sensors) is prohibited.
- A full, up-to-date sensor list must be maintained with the Homologation Dossier and all installed sensors must remain on the car at all times.

Common Permitted Sensors (examples):

- All sensors in the Series Common Package.
- 1 mainshaft and 1 layshaft speed sensor.
- 1 gearbox barrel position sensor.
- Hydraulic fluid temperature and pressure sensors (MGU, MCU, gearbox, BBW, differential) – contact type only.
- 1 temperature sensor per auxiliary battery cell.
- Max 2 angular position sensors per MGU.
- Max 2 displacement sensors per BBW/differential/hydraulic unit.
- Manufacturer's rear enclosure microphone.

Inside electronics:

- Temperature, pressure, voltage, current, humidity, accelerometer, and gyroscope sensors in approved electronic modules (power box, DC-DC, MCU, TPMS, VCU, BBW, BMS, differential, steering wheel).

FIA/Organiser Datalogger:

- All signals from common and homologated sensors must be logged by the official Series datalogger, including but not limited to: DC bus voltages/currents, pedal and wheel sensors, brake pressures and temperatures, damper positions, torque meters, differential pressures, and any sensors on the technical list.

CAN Data:

- All required signals must be provided on the official CAN datastream, as defined in the Series' dbc file, including power/voltage/torque data, isolation resistance, lap triggers, mode switches, and any signals necessary for technical or sporting control.

7.6 Telemetry & Driver Communications

- Telemetry transmission is strictly prohibited, except for signals explicitly authorised by the Organiser and routed via the official datalogger for regulatory and safety purposes.
- The only permitted car-to-pit voice radio system is that supplied or approved by the Organiser.

7.7 Lighting & Accident Data

Rear Rain Light:

- Each car must carry a functioning rear red light supplied by the Organiser's approved supplier. It must be:
 - Mounted at least 300 mm above the reference plane, facing rearwards on the centerline.
 - Clearly visible from the rear at all times during Competition.
 - Switched as required by official procedures.

Accident Data Recorder (ADR):

- Every car must be fitted with a homologated ADR.
 - Fitted symmetrically about the centerline in an accessible cockpit location with a minimum 5 mm clearance.
 - Powered from the auxiliary battery.
 - Data must be available to the Organiser on demand; access protocols for data sharing and privacy apply.

7.8 Cables, Wiring, and Protection

- All external brake lines, cables, and electrical equipment must be shielded from mechanical, thermal, and chemical damage.
- High-voltage wiring (>60 V) must remain above the rear enclosure and survival cell reference plane, and within defined safety corridors.
- Power circuit components within the survival cell must be separated from the cockpit by a robust, fire-resistant bulkhead (UL94V0 or equivalent).
- Power circuit cables must be routed and secured to avoid movement, abrasion, or stress.
- All electrical live parts must be protected against accidental contact and rated to minimum IP65 (mated) and IP2X (unmated) environmental standards.

7.9 Overcurrent Protection and Fusing

- High-voltage circuits must be protected by fast-blow fuses or electronic overcurrent devices, except for the
- #main circuit breaker.

- Fuse specifications and locations must be recorded in the Homologation Dossier.

7.10 Safety Indicators

RESS Status Light:

- A high-visibility status light must be mounted atop the survival cell (≤ 200 mm from centerline/front of cockpit), showing:
 - **GREEN:** Safe
 - **RED:** Danger – system defective
- Must remain powered for 15 min after power-down and marked “HIGH VOLTAGE”.

Impact Warning System:

- A blue impact warning light, linked to the ADR, must be fitted on the survival cell (≤ 150 mm from centerline/front of cockpit, near emergency switches) to inform rescue crews of accident severity.

Ready-to-Move Light:

- A white light atop the roll hoop, illuminating forward, must indicate when the car is energised and capable of movement.
 - Must flash to warn following cars of abrupt deceleration or when the car is charging with HV systems active.
 - The car must never be serviced or charged while the “ready-to-move” light is solid ON.

7.11 Charging and Auxiliary Power

- All charging units must be homologated and supplied with technical and safety documentation to the Organiser.
- The auxiliary battery must be mounted outside the survival cell and be robustly fixed.
- Current, voltage, and temperature must be monitored at all times; isolation of all loads is mandatory in the event of auxiliary battery failure.

7.12 Equipotential Bonding & Isolation Surveillance

- All major conductive structures must be equipotentially bonded to chassis ground.
- An isolation surveillance system must continuously monitor the status of insulation barriers between high-voltage systems and the chassis.
- All isolation, creepage, and clearance requirements must be maintained to prevent electric shock or arc risk.

End of Article 7

Article 8: Transmission Systems

As issued by the Automobili La'Bergitla Squadra di Motorsport Technical Division

8.1 General Transmission Architecture

- The rear transmission system may only drive or be driven by the rear wheels.
- The front transmission system may only drive or be driven by the front wheels.
- Cross-axle or cross-axle propulsion, torque transfer, or drive is strictly prohibited.

8.2 Gearbox

- The gearbox must conform to the definitions and technical scope established in Article 1.17.
- Only the following bearing types are permitted: ball, cylindrical roller, toroidal, or plain bearings.
- The gearbox must be designed for serviceability: it must be possible to physically disassemble and identify all major components—including any articulating joints or torque transfer assemblies—without breaking regulatory seals.

8.3 Driveshafts and Torque Measurement

- Each car must be equipped with four driveshafts: two for the front wheels and two for the rear wheels.
- Articulating joints (e.g., tripod roller joints) must enable complete torque transfer between gearbox and wheels and must be serviceable as individual assemblies.
- **Rear Driveshaft Torque Measurement:**
Each rear driveshaft must be equipped with an official torque measurement system as supplied by the Organiser or approved technical supplier.

8.4 Gear Ratios

- A maximum of six (6) reduction gear ratios is permitted.
- Only one gear ratio set may be homologated and used for the duration of the homologation cycle.

8.5 Reverse Gear

- All cars must be capable of reversing under their own power at any time during the Competition, controllable directly by the driver from the cockpit.

8.6 Differential and Drive Control

- **Torque Vectoring:**
Any system which enables active torque vectoring or independent wheel torque variation is strictly prohibited.

- **Active Differential:**

Only the following types of differentials are permitted for transferring MGU torque to the wheels:

- Mechanical limited slip differential (LSD)
- Viscous coupling system (not a hydraulic slip control device)
- Single hydraulic or electrically actuated locking device, electronically controlled

- **Hydraulic Control:**

- Only single-stage direct hydraulic valves are permitted, with a maximum hydraulic system pressure of 130 bar.
- Proportional direct valves are allowed as per the approved Technical List.
- Proportional indirect valves and any non-listed control devices are strictly prohibited.

8.7 Gearbox Command and Shifting

- Gear selection may be controlled by paddle shift mechanisms.
- Dual-clutch transmissions (DCT) or double clutch gearboxes are forbidden.
- **Sequential Shifting:**
 - Instantaneous or automated gearshifts (where selection of two gears may overlap) are forbidden.
 - Gearshifts must occur as distinct, sequential actions: disengagement of the current gear must be completed before engagement of the target gear.
 - All shifting events must be discrete, driver-initiated actions without automation beyond permitted paddle operation.

End of Article 8

Article 9: Suspension and Steering Systems

As issued by the Automobili La'Bergitla Squadra di Motorsport Technical Division

9.1 General Suspension Principles

- **Active suspension systems are strictly prohibited.**
- All cars must be equipped with a fully sprung suspension system.
- The suspension must respond exclusively to dynamic changes in wheel load.
- **No powered, hydraulic, electronic, or mechanical device may actively adjust or control suspension geometry, wheel load, damping characteristics, or ride height in real time for any dynamic performance benefit,** unless specifically permitted under Article 10.2.

9.2 Regenerative (Energy-Harvesting) Suspension Systems

- **Regenerative suspension is permitted, reflecting the Series' sustainability and technical innovation mandate.**
- All systems must be designed solely to **passively recover kinetic energy from vertical suspension movement** (e.g. bump, rebound, vibration) and convert it to electrical energy for storage, propulsion, or auxiliary use.
- **Strict Prohibitions:**
 - No regenerative system may alter or influence, in real time, any parameter affecting performance—this includes suspension geometry, wheel load, ride height, damper or spring characteristics, or dynamic chassis balance.
 - The system must not deliver any form of active ride, self-levelling, variable damping, traction enhancement, or driver-selectable handling feature.
 - **All energy recovery must be the passive consequence of suspension movement.** No external actuation, driver input, or vehicle system may trigger or modify energy recovery in response to chassis, speed, or handling requirements.
- **Regenerative suspension devices must:**
 - Be fully described, homologated, and documented in the Technical Passport, including schematics, energy pathways, and safety protocols.
 - Be open for technical inspection at any time, including hardware and all associated control software/firmware.
 - Meet all Series electrical and fire safety requirements.

9.3 Suspension Architecture and Component Design

- **Suspension layout must be independent double wishbone on all four wheels.**
- The standard arrangement is a single coil spring over a linear damper, actuated via rocker and pushrod.

- Anti-roll bars, helper springs, and bump stops are permitted.
- No more than six (6) suspension members per wheel (excluding anti-roll bar linkages) are permitted.
- **No interconnection of front/rear or left/right suspension systems is permitted, except through anti-roll bars.**
- **Bump stops must be:**
 - Concentric with the damper shaft.
 - Entirely contained within the inner diameter of the main suspension spring.

9.4 Dampers and Associated Energy Devices

- Dampers must be as supplied or approved by the Organiser's Technical Division or designated supplier.
- Each damper must act independently at each wheel.
- All dampers must attach directly to their corresponding rocker and chassis mounting points.
- **The following are strictly prohibited:**
 - Inerters, mass dampers, or any system designed to store and release energy for ride or handling purposes.
 - Electrical or hydraulic connections to the damper body or any auxiliary unit, **except** for passive, approved energy-recovery sensors or devices as defined in Article 10.2.
 - Any means (electrical, thermal, chemical) to modify damper or spring fluid properties during competition.
- **Adjustment and Control:**
 - All suspension adjustments (spring, damper, anti-roll bar) may only be made when the car is stationary and with tools.
 - In-cockpit or driver-activated adjustments to springs, dampers, or anti-roll bars are strictly prohibited.
- **Sensors:**
 - Damper sensors are permitted solely for the measurement of displacement, must be external, non-integrated, and may not provide feedback for real-time control.

9.5 Materials

- All suspension structural members must be made from metallic materials.
- Coil springs must be manufactured from steel.
- Bump stops must be made from polymer.

9.6 Suspension Geometry, Compliance, and Members

- With the steering system fixed, each wheel's position and rotational axis must be uniquely determined by its (predominantly vertical) suspension travel, excepting minor compliance from component flexibility.
- Powered or self-adjusting geometry, compliance, or ride-altering elements are strictly forbidden.
- No suspension adjustment is permitted while the car is in motion.
- **Suspension members:**
 - Maximum of six per wheel (excluding anti-roll bar linkages).
 - The cross-section must intersect the line between the inner and outer attachment points, with a maximum major axis of 100 mm and an aspect ratio not exceeding 3.5:1.
 - All cross-sections must be nominally symmetrical and may not feature any form of deliberate flexure.
 - Non-structural shrouds are permitted only on front members (and will be considered as bodywork); shrouds on rear members are prohibited.
 - Redundant (non-load bearing) suspension members are not permitted.

9.7 Steering Systems

- Steering systems must not permit the realignment of more than two wheels.
- No part of the steering assembly (wheel, column, attachments) may project rearward of a plane through the rear edge of the steering wheel rim.
- All steering components and their mountings must be designed to minimise the risk of driver injury in the event of head impact.
- The complete steering assembly must pass the FIA Appendix 2 impact test (or an equivalent Series-specific safety assessment).

9.8 Steering Range, Power Steering, and Camber

- Minimum turning radius must not exceed 9 metres (subject to final confirmation).
- Power steering systems are permitted, provided all steering remains under direct driver control with no autonomous or variable-rate intervention.
- Camber range, as specified by the Series' designated tyre supplier, must be:
 - **Front:** 0° to -4.0°
 - **Rear:** 0° to -3.0° (subject to final confirmation)

9.9 Overarching Compliance and Inspection

- Any system, component, or software affecting suspension or steering must be **fully disclosed and open for inspection** by the Series Technical Division at any time.

- **The burden of proof regarding compliance, passivity, and non-performance influence of any energy recovery or ancillary device rests solely with the Competitor.**
- Any breach of the above may result in exclusion from the event or championship, and referral for further sanction.

End of Article 9

Article 10: Brake Systems

As issued by the Automobili La'Bergitla Squadra di Motorsport Technical Division

10.1 Brake Circuit Design and Redundancy

- The brake system must comprise four independent circuits, all operated by a single brake pedal.
- **Circuit Allocation:**
 - At least one hydraulic circuit must act solely on both front wheels.
 - At least one hydraulic circuit must act solely on both rear wheels.
 - At least one circuit acting on the front wheels must utilize only the front powertrain's electrical regeneration (MGU-based).
 - At least one circuit acting on the rear wheels must utilize only the rear powertrain's electrical regeneration.
- The system must be designed such that, in the event of a failure of any one circuit, actuation of the pedal continues to provide effective braking to at least two wheels.

10.2 Hydraulic Brake Systems

- All hydraulic actuation of brake calipers must be by means of closed hydraulic circuits.
- **Active brake pressure control is permitted** on the front and rear hydraulic brake circuits, subject to the following:
 - Maximum allowable hydraulic pressure under active control: **130 bar** at any point in the circuit.
 - When the active system is disabled or in fallback mode, there is no pressure limitation.
 - Only direct solenoid or proportional direct valves as approved on Technical List XX are allowed; proportional indirect valves are forbidden.
 - The system must deliver equal hydraulic pressure to both left and right calipers at all times; the left and right caliper lines must be joined prior to any control device.
 - The system must be designed to ensure the car can achieve safe and effective deceleration using only driver-applied pedal force in the event that all regenerative and/or high-pressure hydraulic assistance is unavailable.

10.3 Regenerative Braking and MGU Control

- Electrical regenerative braking via the MGUs is permitted on both axles, but:
 - It is strictly forbidden to apply **opposing torque (i.e., regenerative on one axle, motoring on the other)** via the MGUs.
 - The driver's physical input to the brake pedal must always override and take precedence over all automated or system-generated braking commands.
 - Any request for negative torque (braking) on either front or rear axle, detected by the control system, shall be interpreted as a driver-initiated deceleration command.

Automobili La'Bergitla - 2030 - 2031 Endurance Series Technical Regulations
Confidential & Proprietary | © 2025 Automobili La'Bergitla. All Rights Reserved.

- The blending of hydraulic and regenerative braking must be seamless, predictable, and consistent with driver expectation and safety requirements.

10.4 Brake Calipers

- Each wheel may be equipped with no more than one brake caliper.
- Brake calipers must be constructed exclusively from aluminium alloy with a modulus of elasticity not exceeding **80 GPa**.
- All brake calipers must be of a fixed or sliding design, with no active or variable-geometry elements.

10.5 Brake Discs and Pads

- No more than one brake disc is permitted per wheel.
- All discs must rotate at the same speed as the wheel to which they are fitted.
- Each wheel may use no more than two brake pads.
- All discs and pads must be of solid construction; no movable, segmented, or variable-mass designs are allowed.

10.6 Brake Cooling

- **Liquid cooling of any hydraulic brake component is strictly prohibited.**
- Only ambient air or ducted airflow (as approved in the bodywork regulations) may be used for brake cooling.

10.7 General Safety and Compliance

- The braking system must be fail-safe and designed such that the driver maintains ultimate authority over deceleration at all times.
- All brake system hardware, control units, software/firmware, and any blending logic for hydraulic/regenerative functions must be fully disclosed and available for inspection by the Series Technical Division.
- All competitors are responsible for ensuring conformity with these regulations at all times during competition.

End of Article 10

Article 11: Hydraulic System

As issued by the Automobili La'Bergitla Squadra di Motorsport Technical Division

11.1 General Requirements

- The hydraulic system may be installed within any area of the Manufacturer's declared vehicle volume, as specified in the homologation form and subject to Series approval.
- At no point may the hydraulic system exceed a **maximum pressure of 130 bar**.

11.2 Hydraulic Fluid Lines and Connectors

- All hydraulic fluid lines must have a **minimum burst pressure of at least twice the maximum system operating pressure**, tested at the system's maximum operating temperature of **204°C**.
- **Inside the cockpit**, only hydraulic lines equipped with self-sealing couplings or screwed (threaded) connectors are permitted.
- All lines must be routed and secured such that, in the event of leakage, hydraulic fluid cannot accumulate within the cockpit or any crew-occupied compartment.
- **Flexible hydraulic lines** must be fitted with swaged or crimped connectors and must incorporate an **external braid** that is resistant to abrasion and flame.

11.3 Hydraulic Accumulators and Discharge

- Any hydraulic accumulator incorporated into the system must be capable of being fully discharged to atmospheric pressure within **30 seconds** when the car is stationary and all RESS (Rechargeable Energy Storage System) contactors are open.
- Accumulator discharge systems and safety interlocks must be described in the homologation documentation and be available for inspection at any time.

11.4 Inspection and Compliance

- All hydraulic system components, fluid specifications, pressure control devices, and routing must be fully described and homologated as part of the official technical passport.
- The Series Technical Division reserves the right to inspect and require testing of any hydraulic line, connector, accumulator, or system component for compliance at any time.

End of Article 11

Article 12: Wheels and Tyres

As issued by the Automobili La'Bergitla Squadra di Motorsport Technical Division

12.1 Visibility and Location

All four wheels must be clearly visible from the side profile of the car at all times.

12.2 Number of Wheels

Each car must be equipped with exactly **four (4) wheels**.

12.3 Rim Specifications

- The design and specification of each rim must be defined by the Organiser's designated chassis supplier and approved by the Series Technical Division, ensuring compatibility with the official tyre specification and safe mounting/dismounting, including provision for TPMS sensors and valves.
- Rims must be **one-piece**, manufactured from a homogeneous metallic material.
- Rims must be **symmetrical**; the measured diameter at both inner and outer bead seats must be identical, with a tolerance of ± 1.5 mm.

12.3.1 Rim Dimensions

- **Imposed diameter:** 18 inches
- **Front rim width:** 11.5 inches
- **Rear rim width:** 13 inches

12.3.2 Rim Attachments and Open Area

- No part may be attached to the rim except for wheel covers (if permitted), the tyre valve, pressure sensor, drive pegs, and balance masses.
- From the side, between diameters of 150 mm and 420 mm, a minimum of 50% (TBC) of the total internal area of the rim must permit an unobstructed through-view.
- All rim-mounted components must rotate at the same speed as the rim.
- Balance masses must be fitted at a minimum distance of 150 mm from the wheel's rotational axis.
- Cosmetic coatings or stickers less than 1 mm thick are permitted on the outboard face of the rim, extending no more than 6 mm inboard from the outer edge.

12.4 Tyre Supply and Specifications

- All tyres must be supplied as standard by the Organiser's designated single supplier and used as provided, without any modification, cutting, grooving, solvent treatment, or softening. This prohibition applies to both dry and wet-weather tyres.
- Tyre specifications, including compound and construction, are determined by the official supplier and may not be substituted or altered in any way.

12.4.1 Tyre Dimensions

- **Front tyre:**
 - Section width: 295 mm

- Overall diameter: 710 mm
- **Rear tyre:**
 - Section width: 345 mm
 - Overall diameter: 710 mm

12.5 Tyre Gases and Inflation

- Tyres may be inflated only with atmospheric air. The use of any other inflation gas, including nitrogen or dry gases, is prohibited except for drying performed at the official fitting station by the tyre supplier.
- The use of any device or system, mechanical or electronic, to alter tyre pressure while the car is in motion is strictly forbidden.
- The maximum inflation pressure for mounting a tyre onto the rim is **3.0 bar at 20°C**; this must be sufficient to seat the tyre on the rim bead.

12.6 Wheel Attachment

- The wheel attachment system is free, subject to Series approval.
- If a single central nut is used, a safety spring (painted red or dayglo orange) must be installed whenever the car is running, and must be refitted after every wheel change.
- Any alternative wheel retention method must be explicitly approved by the Technical Division.

12.7 Tyre Pressure Monitoring System (TPMS)

- All cars must be equipped with a tyre pressure monitoring system capable of measuring both pressure and temperature of each tyre in real time during vehicle operation.
- Only the TPMS and associated components supplied or approved by the official Series single supplier may be used; all other systems are prohibited.
- Installation instructions and system details must be provided by the supplier and approved by the Technical Division.
- A minimum of one warning light must be provided within the cockpit to notify the driver of any TPMS system failure or critical event.
- All TPMS data must be transmitted to the official Series data logger via CAN bus as prescribed.

12.8 General Tyre and Wheel Provisions

- Any process or attempt to reduce the moisture content in the tyre or its inflation gas is forbidden (except for supplier-performed drying during initial fitting).
- All parts of each wheel assembly must rotate at the same speed; no component may rotate independently unless specifically authorised.
- The use of any device intended to influence, heat, or otherwise treat tyres before or during use, except as explicitly permitted in the Series regulations, is forbidden.

End of Article 12

Article 13: Cockpit

As issued by the Automobili La'Bergitla Squadra di Motorsport Technical Division

13.1 Cockpit Opening and Access

- To ensure adequate driver access and egress, the cockpit opening must admit the template shown in Drawing 2, which must be able to be inserted horizontally from above until its lower face is 525 mm above the reference plane, with the steering wheel, secondary roll structure, seat, seat padding, and steering column removed.
- The template's edge on line a-b-c-d-e must be no less than 1800 mm behind the A-A reference as shown in Drawing 5.
- The driver must be able to enter and exit the cockpit by removing the steering wheel only. When seated normally, the driver must be facing forwards and the rearmost part of their helmet must be no more than 125 mm forward of the rear edge of the cockpit entry template.
- From the normal seating position (with seat belts fastened and wearing usual driving equipment), the driver must be able to remove the steering wheel, exit the car within **7 seconds**, and refit the steering wheel within a total of **12 seconds**. After replacement, full steering control must be maintained.

13.2 Steering Wheel

- The steering wheel, at any rotational angle, must lie below a line joining the front fixing axis of the secondary roll structure and a point 75 mm vertically below the highest point of the principal roll structure.
- The steering wheel must be fitted with a **quick-release mechanism**, operable by pulling a concentric flange behind the wheel on the steering column.
- At all steering angles, there must be at least **50 mm** clearance between any part of the steering wheel assembly (rearward of the collapsible element) and the survival cell/bodywork, measured parallel to the steering wheel axis.

13.3 Internal Cross Section

- A free vertical cross-section as defined by the template in Drawing 3 must be maintained from the cockpit opening to at least 100 mm behind the face of the rearmost pedal at rest.
- Only the steering wheel and FIA-specified cockpit padding may encroach on this section.
- With seat belts fastened and the steering wheel removed, the driver must be able to lift both legs so that their knees pass rearward of the steering wheel axis, unimpeded by any part of the car.

13.4 Cockpit Padding and Headrest

13.4.1 Headrest

- Three areas of **removable head padding** must be provided:
 - Removable as a single unit.
 - Made from FIA-approved material (see Technical List n°17).
 - Covered in specified Aramid/epoxy pre-preg (see FIA spec).

- Placed to be the first contact with the driver's helmet in a crash, and never obscure the helmet when viewed from above.
- The **rear headrest** must be 75–90 mm thick, covering at least 40,000 mm². A comfort pad (≤10 mm thick) with a low-friction cover may be added.
- The **side headrests** must be within the area defined by the extremities of the driver's helmet and upper surface of the survival cell, each at least 33,000 mm² and not less than 95 mm thick. Comfort padding ≤20 mm may be used.
- Any void between side and rear headrest areas must be filled with the same approved material.
- Additional cockpit rim padding, for frontal/oblique impacts, must be provided as an extension of the side pads, made from the same materials, symmetrically positioned, and at least as high as the survival cell, with inboard radius ≤10 mm, minimum separation 320 mm, and as high as practicable.

13.4.2 Headrest Fixings

- Headrests must be secured with:
 - Two cylindrical pegs (≥6 mm diameter, ≥12 mm engagement).
 - Keyhole fixings at the prescribed locations.
 - Quick-release front fixings, clearly marked.
 - No tape or similar material may cover the forward fixings.

13.5 Leg and Foot Protection

13.5.1 Leg Padding

- Padding must be fitted above and on each side of the driver's legs, made from the same material as the headrest, no less than 25 mm thick, covering the area from plane B-B to 100 mm behind the rearmost pedal face and above line A-A (see Drawing 3).

13.5.2 Position of Driver's Feet

- The foremost pedal (inoperative position) must be at least **300 mm** rearward of the survival cell front bulkhead and rearward of the front wheel centre line.
- With feet on the pedals, the soles of the driver's feet must never be forward of the front wheel centre line.

13.6 Seat, Seat Fixing, and Removal

- The seat includes shell, cladding, and energy-absorbing foam (FIA Technical List n°50 mandatory).
- Cladding must pass ISO 3795 flammability test (≤75 mm/min).
- The seat must be removable with **no more than four vertical pins**, clearly indicated and accessible to rescue crews, without needing to cut/remove harnesses.
- Receptacles for seat belts and a head stabilisation device must be present.
- The seat must be removable without cutting/removing seat belts.

13.7 Helmet Removal and Head/Neck Support

- With the driver seated (in harness, with cervical collar), a medical officer must be able to remove the helmet without bending the neck or spinal column.

- No head/neck support worn by the driver may be less than 25 mm from any structural part of the car in normal position.

13.8 General Cockpit Safety

- All cockpit safety equipment and installation must comply with Series and FIA requirements, and be subject to scrutineering and technical inspection at any time.

End of Article 13

Article 14: Safety Structures

As issued by the Automobili La'Bergitla Squadra di Motorsport Technical Division

14.1 General Principles

- All cars must incorporate a comprehensive system of safety structures, including principal and secondary roll structures, a survival cell, and approved impact-absorbing elements.
- The design, material specification, and construction must meet or exceed the latest FIA standards for prototype and single-seater vehicles, except where specifically superseded by these regulations.

14.2 Roll Structures

14.2.1 General

All cars must be equipped with two roll structures:

- The **Principal Roll Structure** (main rollover hoop, typically behind the driver's head)
- The **Secondary Roll Structure** ("halo" or equivalent device, ahead of the driver)

These are designed to prevent driver injury in the event of the car overturning or inverting.

14.2.2 Principal Roll Structure

The principal roll structure must:

- Have structure at $Z = 968$ mm at $XC = 55$ mm.
- Have a minimum enclosed structural cross section of 6000 mm^2 (in vertical projection) across a horizontal plane at $Z = 950$ mm. This minimum cross-sectional area must be maintained below this plane.
- Above $Z = 935$ mm, the external surface must be tangent-continuous, free of concave radii, and have any convex radii not less than 20 mm.
- Allow minimal local deviations only at prescribed technical interfaces (e.g., load pad, duct opening below $Z = 955$ mm, mounting of required cameras).
- Have a minimum cross-sectional area of $10,000 \text{ mm}^2$ across a horizontal plane at $Z = 910$ mm (vertical projection). This area may not exceed 200 mm in length or width, and must not fall below $10,000 \text{ mm}^2$ below this point.
- Only structural elements genuinely contributing to roll structure integrity are considered; fairings and cosmetic covers are excluded from compliance.
- Above $Z = 935$ mm, the structure must be designed to withstand a 15g vertical impact and constructed from abrasion-resistant material.

Lifting Point:

The principal roll structure must include an unobstructed opening ($\geq 60 \times 30$ mm, radii ≤ 15 mm) visible from the side, enabling rapid car lifting. This opening must withstand a 20 kN upward load applied via strap, at any angle between $+45^\circ$ and -45° to the Z-axis. All threading options must be proven by calculation.

14.2.3 Secondary Roll Structure (Halo)

- The secondary roll structure must be symmetrical about the car's centre plane, with the front fixing axis at $XC = -975$ mm, $Z = 660$ mm, and rear mounting faces at $Z = 695$ mm.
- Must be constructed to FIA Standard 8869-2018 and supplied by an FIA-designated manufacturer.
- The structure is not considered part of the survival cell.

14.3 Survival Cell (Monocoque)

14.3.1 General Requirements

- The survival cell forms the central, primary occupant protection structure.
- Must provide an access opening for the driver per Article 15.1, with minimum dimensions maintained throughout the relevant structure.
- All other survival cell openings must be minimized and solely for mechanical/electrical service access.
- The driver's helmet must remain within defined longitudinal and vertical bounds ($XC = -50$ to -125 mm, eye line and ear criteria as detailed in the cockpit article).
- The driver's helmet must be lower than a line from the secondary roll structure front fixing axis to a point 75 mm below the highest point of the principal roll structure.
- In side view, the centre of gravity of the driver's head must lie below the top of the survival cell; both eyes must be visible.

14.3.2 Survival Cell Dimensions

- **External width** between planes B-B ($XC = -875$ mm) and C-C ($XA \geq 1830$ mm): no less than 450 mm and at least 60 mm wider per side than the cockpit opening (measured normal to cockpit opening), maintained over at least 350 mm in height.
- **Taper:** Forward of B-B, the width may reduce to a minimum of 300 mm at A-A ($XA = 0$ mm), but symmetrically about the car's centre and maintained over a 275–400 mm height (linear taper).
- **Heights:**
 - Max height between A-A and B-B: 625 mm above reference plane
 - Min height at B-B: 400 mm; at A-A: 275 mm (linear taper between)
 - Between B-B and C-C: min 550 mm above reference plane
- When the cockpit opening template is in place (lower edge 525 mm above the reference plane), the survival cell must not be visible from the side.
- Maximum width between the survival cell walls (each side of the driver's head): 550 mm.

14.4 Intrusion Protection and Laminates

14.4.1 Side & Lower Survival Cell

- The sides and lower surfaces must use anti-intrusion laminates capable of passing the FIA “Side Panel Test Procedure 01/21” (Main Combined Panel).
- The protected area extends from 250 mm high at A-A, tapering to at least 450 mm high at B-B, and below a line 550 mm above reference plane from B-B rearwards.
- Total cut-outs forward of a line 300 mm behind A-A: < 15,000 mm² per side.

14.4.2 Main & Forward Secondary Panels

- Additional panels (Main Secondary and Forward Secondary) must be permanently bonded to the survival cell using full-surface adhesive, and constructed per the above referenced test procedures.
- Overlaps and tapers must comply with prescribed dimensions.
- Cut-outs: < 15,000 mm² per side allowed for access and essential fixings.
- The main and forward integrated panel areas (and their transitions) must be a single continuous layup except for a junction < 125 mm from the centre plane or for RESS access.

14.4.3 Frontal Intrusion Protection

- A Frontal Anti-Intrusion Panel must be fixed to the survival cell front bulkhead, covering the entire area.
- Cut-outs are limited to 8,000 mm² (cooling) and 2,500 mm² (looms, cables, lines).
- Panel must pass the FIA strength test (Appendix 2).

14.5 Impact Absorbing Structures

14.5.1 Front Impact Structure

- Must be mounted in front of the survival cell, symmetric about the car centreline, using a minimum of four equal-strength fastenings.
- Forward-most point: as defined by homologation (TBD).
- Must meet dimensional and area requirements at defined planes (D-D, E-E, etc.), with continuous external cross-sections and tapering as specified.
- No parts above Z = 235 mm ahead of D-D; further geometric requirements apply for structure continuity and strength.

14.5.2 Rear Impact Structure

- Fitted behind the rear casing, symmetric about centreline, rearmost face 680–830 mm behind the rear wheel centre line.
- Rear face: rectangular, ≥ 100 mm wide, ≥ 130 mm high, corners radius ≤ 10 mm, face 170–360 mm above reference plane.
- Horizontal projection may not diminish forward of rearmost face.

14.5.3 Side Impact Structures

- Two must be fitted to each side of the survival cell, manufactured and mounted to FIA/Series specifications, and fully enclosed by bodywork.

- Mounting and geometry as per Formula One/FIA Appendix, including principal axis alignment, inboard mounting dimensions, and area requirements.
- Internal volumes outboard of defined planes must be empty for debris compaction, with area and proximity restrictions for components within the structure's region.
- Only bodywork, fluid/electrical lines, and certain systems/components (with low density and total volume < 2 L per side) permitted in this region.
- All construction must avoid compromising the function or integrity of the impact structures.

14.6 Survival Cell Identification

- Each survival cell must integrate three FIA-defined RFID transponders for identification and traceability.
- Transponders must be permanently fixed and accessible for inspection as per Drawing 7.

14.7 Testing and Homologation

- All safety structures must be fully documented, tested, and homologated to the requirements of the Series and the latest FIA safety appendices, including but not limited to: static and dynamic load testing, panel impact and penetration tests, and full dimensional checks.
- All data, drawings, and compliance calculations must be submitted for approval and available for scrutineering.

End of Article 14

Article 15: Safety Equipment

As issued by the Automobili La'Bergitla Squadra di Motorsport Technical Division

15.1 Fire Extinguisher System

- All cars must be equipped with a plumbed-in fire suppression system homologated to FIA Standard 8876-2022, as listed in FIA Technical List N°97.
- The system must be installed and used in strict accordance with the supplier's user manual and FIA homologation documentation.
- **Extinguishing medium:** Only media listed in Article 253.18.23 of Appendix J to the International Sporting Code are authorized.
- It is **recommended** to relocate sidepod nozzles (as per FIA Std 8876-2022 Art. 6.8 homologation test) to the front of the car and direct them at the Front MGU.
- **Battery Flooding:**
 - The battery must incorporate a system that enables it to be flooded from outside the car in the event of internal fire.
 - A dry-break coupling (e.g., STAUBLI N00916298 Male Dash 12 or equivalent) must be used.
 - The system must allow water to circulate and cover all battery cells, with spent water discharged through the bottom of the battery housing.
 - The battery housing must be able to withstand all pressures generated by the flooding system.

15.2 Rear View Mirrors

- All cars must have two rear view mirrors, mounted symmetrically about the car's centreline, ensuring clear visibility to the rear and both sides of the car.
- Each mirror assembly includes a reflective surface, its housing, and mountings attached to the sprung mass.
- Mirrors must remain immobile relative to the sprung part of the car.
- Minimum mirror area: **75 cm²** each.
- Camera-based alternatives are permitted if the cockpit display is $\geq 75 \text{ cm}^2$ and fully visible to the driver.
- **Field of Vision Test:**
 - The seated driver must be able to identify any letter or number (150 mm high x 100 mm wide) placed anywhere on boards 10 m behind the rear axle line, from 400 mm to 1100 mm above the ground, and within 2000 mm of the car's centreline.

15.3 Safety Belts

- It is mandatory to use two shoulder straps, one abdominal strap, and two crotch straps, all homologated to FIA Standard 8853-2016 and Article 253-6.

- All straps must be securely fixed to the car in accordance with the homologation and manufacturer instructions.

15.4 Protection Against Dust and Water

- All electrical equipment must be protected to an appropriate IP rating as specified in Appendix J, Article 253-18.3 (e.g., per ISO 20653).
- All connectors, enclosures, and wiring must meet the required dust and water ingress protection for safe operation under all racing conditions.

15.5 Wheel Tethers

- **Each wheel must be retained by three tethers** meeting FIA Standard 8864-2022, with minimum energy absorption of 5 kJ per tether.
- No suspension member may contain more than two tethers.
- Each tether must have **independent attachments at both ends**:
 - Capable of withstanding 70 kN tensile force in any direction within a 45° cone from the suspension member's load line.
 - Accept tethers with end fittings of at least 15 mm internal diameter.
 - Not share a common fastener; failure of one must not lead to the failure of an adjacent point.
 - Peak force during homologation: ≤ 70 kN.
- **Attachment point separation**:
 - On the survival cell: at least 300 mm apart (X-direction).
 - On the gearbox: at least 250 mm apart (X-direction).
 - On the wheel/upright: at least 90° apart radially and 100 mm apart (measured between centres).
- The manufacturer must provide detailed geometry showing two tethers will independently prevent a wheel from contacting the driver's head, even at 40% elongation and with the secondary roll structure (halo) fitted.

15.6 Rear Impact Structure Tether

- The rear impact structure must be tethered to the gearbox case with a tether per FIA Standard 8864-2022.
- **Tether specs**:
 - Minimum breaking strength: **30 kN**
 - Minimum energy absorption: **3 kJ**
 - Independent attachments at both ends (except gearbox side, may share with wheel tether):
 - Must withstand 30 kN in any direction within a 45° cone from the load line.

- Must accept a 15 mm internal diameter end fitting.
- Must be on opposite sides of the predicted failure point for side load at the rear-most structure end (verified by calculation/test).
- The chassis manufacturer must demonstrate that the tether attachments are on different sides of the predicted failure point during a lateral load event.

15.7 Additional Equipment and Standards

- All mandated safety equipment (fire suppression, belts, tethers, battery systems, etc.) must be homologated and installed according to current FIA regulations and the Series' Technical Passport.
- All components must be accessible for inspection at any time and maintained in full working order throughout each Competition.

End of Article 15

Article 16: Car Construction – Permitted Materials

As issued by the Automobili La'Bergitla Squadra di Motorsport Technical Division

16.1 General Material Policy

- Only the materials listed below may be used in the construction of the car, except as otherwise expressly permitted.
- All materials must be commercially available on a non-exclusive basis and under normal commercial terms to all competitors.
- Use of any experimental, proprietary, or restricted-access material is strictly prohibited.

16.2 List of Permitted Materials

Metallic Alloys

- **Aluminium alloys**
- **Steel alloys**
- **Cobalt alloys**
- **Copper alloys** (containing $\leq 2.5\%$ by weight of Beryllium)
- **Titanium alloys**
 - *Note: Not permitted for use in fasteners with <15 mm diameter male thread except for FIA-specified common parts*
- **Magnesium alloys**
- **Nickel-based alloys** (with $50\% < \text{Ni} < 69\%$)
- **Tungsten alloys**

Fibre and Composite Materials

- **Carbon fibres** from polyacrylonitrile (PAN) precursor
 - Tensile modulus ≤ 550 GPa
 - Density ≤ 1.92 g/cm³
 - Unidirectional or planar reinforcement only in pre-impregnated form (no three-dimensional weaves or stitched fabrics; however, 3D preforms and Z-pinning permitted)
 - No carbon nanotubes in either fibre or matrix
 - Must use a permitted matrix (carbon matrix not permitted)
- **Aramid fibres** (e.g., Kevlar)
- **Poly(p-phenylene benzobisoxazole) fibres** (e.g., Zylon)
- **Polyethylene fibres**
- **Polypropylene fibres**

- **E-glass and S-glass fibres**

Matrix and Resin Systems

- **Thermoplastics:** Monolithic, particulate filled, or short fibre reinforced
- **Thermosets:** Monolithic, particulate filled, or short fibre reinforced
- **Permitted matrix systems in pre-impregnated materials:**
 - Epoxy
 - Cyanate ester
 - Phenolic
 - Bismaleimide
 - Polyurethane (*)
 - Polyester (*)
 - Polyimide (*)
 - (* These are permitted **only** in front, rear, or side impact structures and side intrusion panels)
- **Monolithic ceramics**
- **Sandwich panel cores:** Aluminium, Nomex, polymer foams, syntactic foams, balsa wood, carbon foam

16.3 Exceptions

The following are exempt from the above restrictions:

- **Electrical components:** Including but not limited to control boxes, wiring looms, sensors, and internal elements of MGU, MCU, and RESS
- **Seals and rubber items:** (e.g., boots, o-rings, gaskets, bump rubbers)
- **Fluids:** Water, oils, coolants, etc.
- **Tyres**
- **Surface treatments:** Coatings and platings such as DLC, nitriding, chroming
- **Paint**
- **Adhesives**
- **Thermal insulation:** Felts, gold tape, heat shields, etc.
- **FIA-regulated materials:** Fuel bladders, headrests, extinguishants, padding, skid blocks, etc.

16.4 Brake Friction Materials

- Use of any metallic material with a specific yield modulus greater than **40 GPa/g/cm³** is strictly forbidden.
- The use of **magnesium sheet less than 3 mm thick** is forbidden.

- Conformity with these requirements will be tested per FIA Test Procedure 03/02.

16.5 General Prohibitions

- No use of carbon nanotubes in any fibre or composite matrix.
- No three-dimensional woven or stitched fibre reinforcements in structural composites, except 3D preforms and Z-pinning technology.
- No carbon matrices are permitted in composites.

16.6 Compliance

- Any material or structure may be subject to inspection and laboratory verification at any time by the Series Technical Division or FIA delegates.
- Failure to comply with permitted materials lists may result in exclusion from the Competition.

End of Article 16

Article 17: Safety Test Requirements

As Issued by the Automobili La'Bergitla Squadra di Motorsport Technical Division

17.1 General

All cars entered in the Automobili La'Bergitla Endurance Series ("the Series") must comply in full with the safety and structural integrity test requirements as issued by the Series Technical Division.

The minimum requirements include, but are not limited to:

- Frontal impact tests
- Side impact tests
- Rear impact tests
- Steering column integrity tests
- Roll structure static load and impact tests

Where referenced for benchmarking or harmonisation, the Series adopts as a minimum the technical standards, procedures, and acceptance criteria specified in the document:

"FIA Formula E Safety Test Requirements" (including subsequent amendments), as published by the FIA.

However, these references are for technical alignment only; all final requirements, procedures, and interpretations are set and enforced solely by the Automobili La'Bergitla Squadra di Motorsport Technical Division. The Series is not governed by the FIA, nor does the FIA have regulatory or enforcement authority over these matters.

The relevant document or extracts may be made available by the Series Technical Division upon written request.

It is the sole responsibility of each constructor to ensure that all aspects of the chassis and safety structures—including the survival cell, roll structures, impact absorbing structures, and steering assembly—meet or exceed these Series safety test requirements prior to homologation and competition entry.

End of Article 17

Article 18: Television Cameras and Timing Transponders

As issued by the Automobili La'Bergitla Squadra di Motorsport Technical Division

18.1 Television Cameras and Ballast

All cars must be equipped with on-board camera (OBC) equipment supplied solely by the Series Promoter. If a car is not fitted with the full complement of promoter-supplied camera units, ballast of equivalent mass must be securely installed in the prescribed locations.

No on-board camera or related equipment, other than that provided by the Promoter, may be installed or operated on any car.

18.2 Location and Mounting

The installation, position, and method of mounting all camera equipment must:

- Comply with the specifications set out in the car's Homologation Form, and
- Follow the locations and procedures detailed in the user manuals supplied by the Promoter and their designated equipment supplier.

18.3 Timing Transponders

All cars must be equipped with two (2) timing transponders, supplied by the officially designated timekeeping provider.

Transponders must be installed in strict conformity with the fitting instructions provided by the official timekeepers and the FIA designated single supplier.

End of Article 18