

2021 FIA FORMULA 3 REGIONAL HOMOLOGATION REGULATIONS

SUMMARY

ARTICLE 1: Manufacturer registration

ARTICLE 2: Chassis Homologation

- 2.1 Compliance with Technical Regulations
- 2.2 Price/cost requirements
- 2.3 Chassis homologation perimeter
- 2.4 Options

ARTICLE 3: Power Unit Homologation

- 3.1 Compliance with Technical Regulations
- 3.2 Cost/lifetime requirements
- 3.3 Power output
- 3.4 Power Unit space template
- 3.5 Minimum current provided by alternator
- 3.6 Power Unit homologation perimeter

ARTICLE 4: Homologation procedure

ARTICLE 5: Changes to homologated parts

ARTICLE 6: FIA right of veto

APPENDIX 1: PRICE LIMITS FOR CONSUMPTION PARTS

APPENDIX 2: POWER UNIT SPARE PARTS

APPENDIX 3: POWER UNIT POWER OUTPUT

APPENDIX 4: MANDATORY IN POWER UNIT PERIMETER

APPENDIX 5: APPROVAL OF SAFETY STRUCTURES

ARTICLE 1: Manufacturer registration

Only those manufacturers registered and approved as FIA Formula 3 Regional component manufacturers are eligible to homologate FIA Formula 3 Regional chassis and Power Units.

ARTICLE 2: Chassis Homologation

2.1 Compliance with Technical Regulations:

Only chassis and/or components complying fully with the FIA F3 Regional Technical Regulations (ISC Appendix J, Article 275) may be homologated.

Only parts having successfully passed the required crash tests may be homologated.

2.2 Price/cost requirements:

The price of the rolling chassis (as defined in Article 2.3) may not exceed [€77,000](#).

Maximum rolling chassis price including 1.9% increase for 2020: €78,463.

[Maximum rolling chassis price including 1.3% increase for 2021: €79,483.](#)

The spare parts prices mentioned in Appendix 1 must be respected. The sum of prices of single parts must not exceed the price of assemblies mentioned in Appendix 1.

The chassis manufacturer must provide a complete list of spare parts prices, including optional parts, which forms part of the homologation. No modifications to the price list are allowed without the prior approval of the FIA.

The prices for options such as springs, gear ratio pairs and anti-roll bars must not exceed those of the originally supplied variants.

The above-mentioned prices are ex-factory/ex-works without VAT.

Only the following increase for distributor and on-track service is admitted:

- Manufacturer's home continent:
 - o Retail price from distributor: price ex works + shipping costs
 - o Retail price with track support: price ex works + shipping costs + 5%
- Overseas
 - o Retail price from distributor: price ex works + shipping costs + taxes + 5%
 - o Retail price with track support: price ex works + shipping costs + taxes + 10%

The homologated spare parts price list may be increased once per year by a rate fixed by the FIA based on the OECD "Key Short-Term Economic Indicator".

The rate will be published by the FIA at the end of a year for the following year.

[For 2018 no increase is allowed.](#)

For 2019 the increase rate is fixed to 3.9 %.

For 2020 the increase rate is fixed to 1.9 %.

[For 2021 the increase rate is fixed to 1.3 %.](#)

The rate is the maximum increase allowed for each part separately.

2.3 Chassis homologation perimeter:

- 2.3.1 The survival cell, headrest, roll hoop, front and rear impact-absorbing structures, front wing support, rear wing support, collapsible steering column, steering rack assembly, fuel system, gearbox and fire extinguishing system must be homologated by the rolling chassis manufacturer before 31 March of the year during which they are intended for use (or the first competitive use).

The rolling chassis manufacturer may homologate the above-mentioned parts only once between 1 January 2018 and 31 December 2023.

- 2.3.2 The complete rolling chassis comprising the following parts

- Complete car ready to run without parts mentioned in Articles 2.3.1 and 3.6

In particular:

- All parts related to the driver installation such as extractable seat, seat belts, cockpit padding
- Secondary Roll Structure (Halo)
- Bodywork and wings
- Complete suspension (with a 2-way adjustable damper) including brakes and driveshafts
- One set of rims without tyres
- Gearbox
- Water radiator
- Oil tank
- Water and oil system outside Power Unit perimeter
- Steering wheel with display and paddles
- Full sensor equipment (as defined in Article 8.9 of the F3 Regional Technical Regulations), chassis loom (including common connector) [and the master switch \(or relay\)](#)
- Gearbox actuator (complete with compressor, pressure storage if necessary, required sensors)
- Gearbox control
- Onboard camera system
- [Auxiliary battery](#)
- Power Unit installation kit, such as
 - o Exhaust and silencer (if required)
 - o Bellhouse
 - o Power Unit / Engine mounting studs
 - o Clutch shaft
 - o Power Unit / Engine frame (if required)
 - o Intercooler including piping (if required)
 - o Oil cooler / heat exchanger (if chassis mounted) including oil lines (if required)
- Basic parts for the options 2.4.4. to 2.4.9

must be homologated by the rolling chassis manufacturer before 31 March of the year during which they are intended for use (or the first competitive use).

The rolling chassis manufacturer may homologate only one complete car between 1 January 2018 and 31 December 2023.

2.4 Options:

The rolling chassis manufacturer may homologate the following options.

The costs of the options are not included in the cost requirements under Article 2.2 except for those parts mentioned in Article 2.3.2.

The maximum prices given in Appendix 1 must be respected.

2.4.1 Power Unit installation kit

Modifications and different parts (such as exhaust, bellhouse, clutch shaft, etc.) for the sole purpose of installing different Power Units may be homologated.

Any exhaust system must comply with the homologated exhaust geometry of a Power Unit and with the requirements laid down in Article 3.3.

Only one installation kit per chassis and homologated Power Unit is permitted.

With exception to the above, different options may be homologated to suit the requirements of different climatic conditions (high temperature kit).

Only one configuration per Championship is allowed. The admitted parts must be defined in the Sporting Regulations of each Championship.

2.4.2 Silencer / catalytic converter

In order to incorporate different noise limit requirements, an optional silencer and / or catalytic converter may be homologated.

2.4.3 Rims

Different rims and spacers to adjust track for different rim widths may be homologated.

2.4.4 Springs

Eight different springs in total for the front and the rear may be homologated between 1 January 2018 and 31 December 2023.

2.4.5 Anti-roll bars

Three different anti-roll bars for the front and three for the rear may be homologated between 1 January 2018 and 31 December 2023.

2.4.6 Modifications due to different driver sizes

Modifications and optional parts for the sole purpose of fitting different driver sizes may be homologated.

2.4.7 Gearbox options

Different pairs of gear ratios may be homologated between 1 January 2018 and 31 December 2023. The available gear ratios must be defined in the Sporting Regulations of each Championship.

2.4.8 Damper

Different dampers may be homologated.

The requirements of the FIA F3 Technical Regulations (ISC Appendix J, Article 27X) have to be respected.

2.4.9 Brake pads

Different brake pads may be homologated.

A competitor may choose at maximum between three different types of homologated brake pads.

For one championship, the total number of brake pads may be more than three. The brake pad types will be then split into groups of three each. A competitor has to choose one group for the complete season. The brake pads available must be defined in the Sporting Regulations of each Championship.

2.4.10 Optional parts for specific Championships

Optional parts used only in specific Championships, mainly for commercial reasons, may be homologated. These parts will replace the original specification in the homologation and are mandatory in the respective Championship.

ARTICLE 3: Power Unit Homologation

3.1 Compliance with Technical Regulations:

Only Power Units complying fully with the FIA F3 Technical Regulations may be homologated.

3.2 Cost/lifetime requirements:

The following cost requirements are for a Power Unit perimeter as defined in Article 3.6.

The target lifetime per season is 10,000 km.

3.2.1 Power Unit sale price

Maximum Power Unit sales price: €25,500

Maximum Power Unit price including 1.3% increase for 2021: €25,832

(applicable for Power Units sold with a new chassis and spare Power Units, Power Unit homologation perimeter defined in Article 3.7 included)

Maximum rebuild cost after minimum 10,000 km: €10,000

Maximum rebuild cost after minimum 10,000 km including 1.3% increase for 2021: €10,130

Maximum costs per kilometre calculated on a 30.000km basis: 1.52€/km

Different selling or lease-purchase concepts may be approved by the FIA, provided the initial sales price is equal to or less than the above defined maximum and the maximum costs per kilometre for minimum 30.000km is respected. After maximum 3 years the Power Unit must become the property of the competitor.

3.2.2 Spare parts

The Power Unit manufacturer must provide the prices of spare parts as listed in Appendix 2 which forms part of the homologation. In case the homologated Power Unit perimeter contains type 1 or type 2 parts that are not mentioned in Appendix 2, the list must be extended accordingly.

The total sum of prices of all spare parts listed in Appendix 2 may not be more than 150% of the selling price of the complete Power Unit.

No modifications to the prices of this list are allowed without the prior approval of the FIA.

The above-mentioned prices are ex-factory/ex-works without VAT.

Only the following increase for distributor and on-track service is admitted:

- Manufacturer's home continent:
 - Retail price from distributor: price ex works + shipping costs
 - Retail price with track support: price ex works + shipping costs + 5%
- Overseas
 - Retail price from distributor: price ex works + shipping costs + taxes + 5%
 - Retail price with track support: price ex works + shipping costs + taxes + 10%

The homologated spare parts price list may be increased once per year by a rate fixed by the FIA based on the OECD "Key Short-Term Economic Indicator".

The rate will be published by the FIA at the end of a year for the following year. No increase is allowed for 2018.

For 2019 the increase rate is fixed to 3.9 %.

For 2020 the increase rate is fixed to 1.9 %.

For 2021 the increase rate is fixed to 1.3 %.

The maximum total sum of spare parts prices will be increased accordingly.

The rate is the maximum increase allowed for each part separately.

This increase allowance does not apply to the selling price of the complete Power Unit.

3.3 Power output:

The power output of the Power Unit should lie between the minimum power curve shown in Appendix 3 and a maximum power curve calculated with the following formula:

$$\frac{\text{minimum weight of the car in kg}}{670.0 \text{ kg}} \cdot \text{Power output for calculation as per Appendix 3}$$

In any case, the engine power output may not exceed the overall maximum given in Appendix 3.

The performance criteria between new Power Unit must stay within +/- 1.5% on the RPM operating range defined by the FIA, compared to the reference power curve declared by the Power Unit manufacturer during the homologation.

The Power Unit manufacturer must declare the performance tolerance over a lifetime of 10.000km considering ideal conditions (engine dyno). The Power Unit performance has to stay within a band of 2.0% on the RPM operating range defined by the FIA, compared to the reference power curve declared by the Power Unit manufacturer during the homologation.

The exhaust layout modifications to fit a given chassis must be such that Power Unit performance stays the same.

3.4 Power Unit space template

Except for the ECU and the Power Unit loom, all parts of the Power Unit (as listed in Article 3.6) have to be positioned within the Power Unit - bellhouse - gearbox space template as defined by Article 5.3 of the FIA F3 Technical Regulations.

If necessary, for the installation of the Power Unit, local extensions may be added to the bodywork of the car. The size and shape of the local extensions must be defined during the homologation procedure and form part of the homologation.

3.5 Minimum current provided by alternator

The current provided by the alternator for the electric system of the chassis must be at least 30A.

3.6 Power Unit homologation perimeter

- Engine ready to run including all specific systems except water radiators and all other parts mentioned in Article 2.3 and 2.4.
- Air intake system including airbox, manifold, throttle body, air filter
- Oil filter, oil pumps and engine mounted oil-water heat exchanger
- Water and oil lines up to first connection
- ERS system (including ES and power circuit wiring)
- Alternator (May be replaced by the MGU if present)
- Starter (May be replaced by the MGU if present)
- Flywheel including spigot bearing
- Clutch
- Power Unit loom (with common connector)
- Power Unit sensors including Lambda sensor (if required)

- ECU including Datalogger
- Lap Beacon
- ECU software version
- Channels available via CAN for competitors and Power Unit support and scrutineering
- Power Unit power curve and measures to ensure the performance criteria mentioned in Article 3.3
- Spare parts, repairs price list and parts classification
- Exhaust geometry

[A detailed list of parts inside the power unit perimeter, optional and outside the perimeter can be found in Appendix 4.](#)

[Should the definition of the chassis and engine perimeter be unclear for any part, it will be clarified by the FIA Technical Department on a case by case basis.](#)

ARTICLE 4: Homologation procedure

The complete car (rolling chassis and Power Unit ready to run) must be divided into three types of part.

Type 1: These parts must be supplied by the manufacturer and used exactly as supplied. Repairs may be carried out only by the manufacturer.

Type 2: These parts are Type 1 parts with specific restrictions. Only the modifications indicated in the homologation may be carried out. Repairs are allowed only in the described range.

Type 3: These parts are unrestricted, provided they are used as designed by the manufacturer and do not fulfil any additional function.

Besides the homologation form duly filled in, each manufacturer must provide a complete spare parts list indicating the categorization of parts and the admitted changes (for Type 2 parts).

The parts classification and the user manual form part of the homologation, both documents will be supplied by the respective manufacturer.

The manufacturer must provide the FIA with all necessary details (drawings, pictures, CAD models, etc.) in order to identify the homologated parts.

In particular, the ply book for the main carbon safety elements must be submitted.

The chassis manufacturer has to supply the following aero data:

Downforce (SCz), Drag (SCx) and Balance (%F) as percentage offset from a baseline setup for the following parameter

- Ride height
- Front wing
- Front wing flaps
- Rear wing (upper and lower)

ARTICLE 5: Changes to homologated parts

Once homologated, no changes may be made to the design or construction of the homologated parts for the duration of the homologation period. Exceptional changes for the purpose of improving reliability, safety and cost-saving may be approved by the FIA.

Modifications to the homologated survival cell may be carried out by the chassis manufacturer in order to facilitate the installation of new ancillaries, provided this is the sole purpose.

ARTICLE 6: FIA right of veto

The FIA may reject the homologation of any part or construction that is considered not in keeping with the present regulations, not in line with the quality requirements or unreasonable in terms of cost targets.

APPENDIX 1

PRICE LIMITS FOR CONSUMPTION PARTS

Maximum prices for spare parts

The sum of prices of single parts must not exceed the price of assemblies.
Maximum 10 prices may be increased by maximum 15% if other prices are reduced by the same amount in total.

Safety elements	Safety structures	Headrest	1.650,00 €
		Main roll hoop	950,00 €
		Halo (incl. Fixation)	3.700,00 €
		Survival cell (including intrusion panels and FAIP)	30.000,00 €
		Seat	1.300,00 €
		Leg padding	900,00 €
	Crash structures	Front crash structure (including nose tip)	2.900,00 €
		Nose tip	300,00 €
		Rear crash structure	2.250,00 €
		Rear light (incl. Bracket)	350,00 €
		Side impact structures (1 piece)	750,00 €
		Front intrusion panel	1.600,00 €
	Bodywork	Upper bodywork complete	Damper cover
Engine cover			
Right sidepod			
Right air duct			
Left sidepod			
Left air duct			
Lower bodywork complete		Pod wing (incl. Support)	7.500,00 €
		Stepfloor	
		Chassis bib	
Diffusor (incl. Extension + fin)			
Wooden floor	350,00 €		
Skid block	200,00 €		
Suspension	Front suspension (per side)	Track rod	2.800,00 €
		Push rod	
		Upper wishbone	
		Lower wishbone	
		Ackerman	
		Brackets chassis side	
	Rear suspension (per side)	Lower wishbone	2.800,00 €
		Upper wishbone	
		Push rod	
		Toe link	
		Brackets gearbox side	
	Suspension components (per item)	ARB	400,00 €
		Rocker assembly	700,00 €
Damper		1.000,00 €	

Brake system (per part)		Brake disc (without disc bell)	300,00 €
		Brake caliper	850,00 €
		Brake pads (4 pads = one axle)	300,00 €
		Brake cooling duct – front	400,00 €
		Brake cooling duct – rear	400,00 €
Rim			300,00 €
Steering assembly		Steering column	700,00 €
		Steering rack	2.200,00 €
		Steering wheel (complete with quick release, display, connector, paddles etc.)	3.000,00 €
Upright assembly (per side / item)		Front upright complete (incl. Brackets, hub, bearing etc.)	2.300,00 €
		Rear upright complete (incl. brackets, hub, bearing, output flange etc.)	2.500,00 €
		Wheel nut	100,00 €
		Wheel bearing	150,00 €
		Driveshaft with tripods and boots	750,00 €
Wings	Front wing assembly complete	Main plane	3.750,00 €
		Flaps	
		Endplates	
		Gurney	
		Support + cover	
	Rear wing assembly complete	Top main wings	3.750,00 €
		Beam wing	
		Endplates	
		Support	
		Fishplates	
Complete fuel system (including fuel cell, pumps, collector pods, connection hoses, hatch cover etc.)			7.000,00 €
Gearbox		Gearbox assembly with clutch shaft	9.500,00 €
		Paddle shift system complete	4.000,00 €
Data logging system		Video system with data overlay (incl. Bracket)	1.500,00 €
		Sensor equipment complete (all chassis sensors)	3.000,00 €
		Chassis looms complete (all looms on chassis side)	3.500,00 €
Power Unit installation kit		Oil cooler system	8.500,00 €
		Intercooler system	
		Water system	
		Bellhouse	
		Power Unit / Engine frame (if required)	
		Exhaust system	

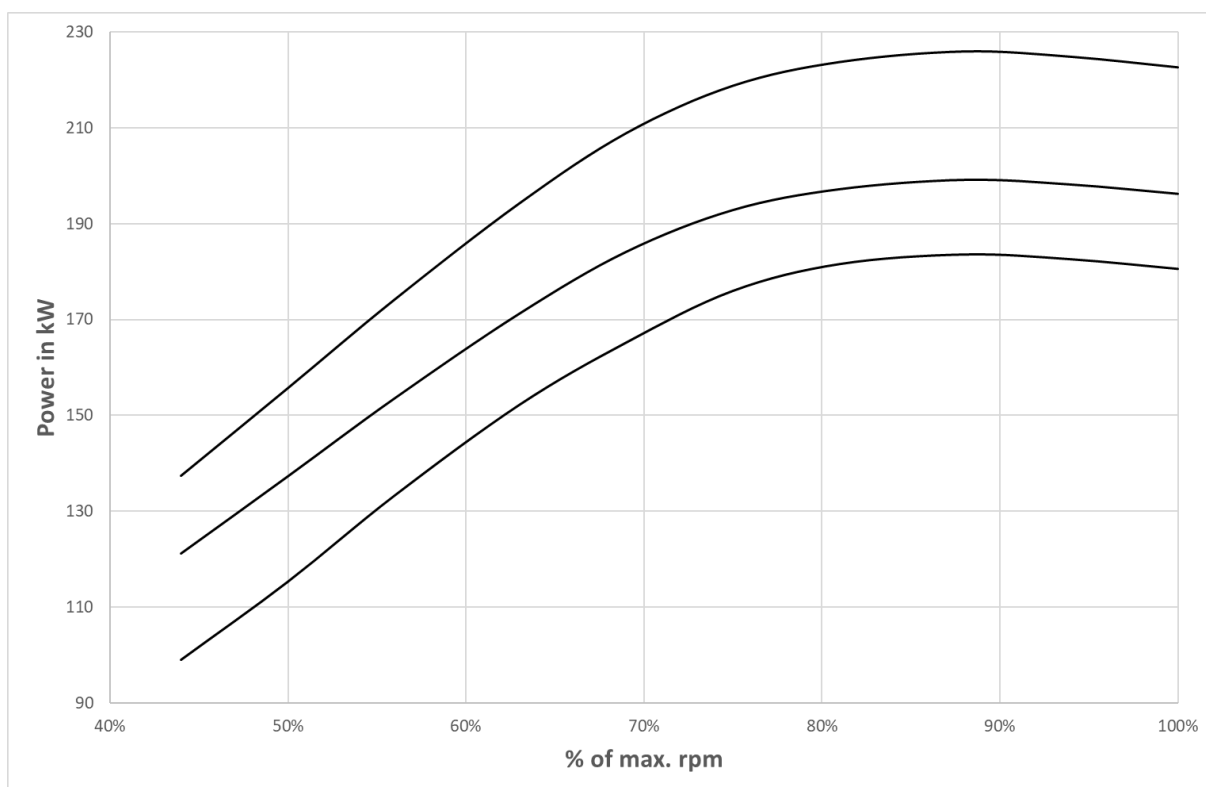
APPENDIX 2

POWER UNIT SPARE PARTS

Power Unit spare parts	
Crankcase	Turbocharger
Cylinder Liner	Waste gate
Crankshaft bearing caps	Waste gate actuator
Crankshaft	Dump valve
Crankshaft shell bearings	Air injection system
Sump / Bedplate	Air injection system actuator
Piston	Exhaust Manifold (for TC engines only)
Rings	
Piston pin (including clips)	Flywheel
Connecting rod	Flywheel mounting screws
Connecting rod screws	Clutch
Connecting rod shell bearings	
Water pump	Intake manifold
Water pump associated pipes	Intake trumpets
Oil pressure pump	Throttle body
Oil pressure pump associated pipes	Air filter
Oil scavenge pump	
Oil scavenge pump associated pipes	Starter
Oil air separator	
Oil filter	Power Unit loom
Oil heat exchanger	Power Unit sensors (Price of each)
	ECU
Cylinder head	
Cylinder head gasket	Spark plug
Camshaft bearing caps	Ignition coils
Inlet camshaft	Alternator
Exhaust camshaft	
Inlet valve	ES
Exhaust valve	ERS Loom
Finger followers / Tappets	MGU
Valve springs	MGU Drive
Cam cover	DC-DC Converter
Camshaft drive cover	
Camshaft drive elements from crankshaft to camshafts	
Injectors	
Injector rail	
Fuel pipes	
High pressure fuel pump	

APPENDIX 3

POWER UNIT POWER OUTPUT



% of max. rpm	Min. Power in kW	Power output for calculation in kW	Overall Max. Power in kW
44%	99.0	121,2	137,4
50%	115.3	137,3	155,7
56%	133.3	153,6	174,2
63%	152.2	171,3	194,3
69%	165.2	184,2	208,9
75%	176.0	192,9	218,8
81%	181.6	197,3	223,8
88%	183.6	199,2	226,0
94%	182.6	198,3	224,9
100%	180.6	196,3	222,7

Measured at ambient conditions:
 Pressure: 1013 mbar;
 Temperature: 20°C;
 Humidity: 50%

APPENDIX 4

MANDATORY IN POWER UNIT PERIMETER

<u>MANDATORY IN PERIMETER</u>	<u>OPTION (Eligible to extra charges)</u>	<u>OUTSIDE PERIMETER</u>
<u>Base Engine with its ancillaries, actuators and sensors</u>	<u>Timing belt protection</u>	<u>Exhaust and silencer (if required)</u>
<u>Air intake system including airbox, manifold, throttle body, air filter</u>	<u>Removable Heatshields</u>	<u>Bellhouse</u>
<u>Oil filter, oil pumps and engine mounted oil-water heat exchanger</u>	<u>Clutch reconditioning</u>	<u>Power Unit / Engine mounting studs</u>
<u>Water and oil lines up to first connection</u>	<u>Fluids replacement</u>	<u>Clutch shaft</u>
<u>ERS system</u>	<u>Oil filter replacement</u>	<u>Power Unit / Engine frame (if required)</u>
<u>Alternator (May be replaced by the MGU if present)</u>	<u>Air filter cleaning/replacement</u>	<u>Intercooler including piping (if required)</u>
<u>Starter (May be replaced by the MGU if present)</u>		<u>Oil cooler / heat exchanger (if chassis mounted) including oil lines (if required)</u>
<u>Flywheel including spigot bearing</u>		<u>Water radiator</u>
<u>Clutch</u>		<u>Oil tank</u>
<u>Power Unit loom (with common connector)</u>		
<u>Power Unit sensors including Lambda sensor (if required)</u>		
<u>ECU including Datalogger</u>		
<u>Lap Beacon</u>		

All parts included in the “mandatory in perimeter” column must be included in the selling price and in the price per km (reconditioning price) mentioned in Article 3.2 with the exception of the parts/work listed in the “Option” column.

APPENDIX 5

APPROVAL OF SAFETY STRUCTURES

Approval of Safety Structures for Formula 3 cars

1) Safety structures

The following safety structures must be approved by the FIA:

- a) Survival cell.
- b) Front and rear rollover structures.
- c) Frontal impact-absorbing structure.
- d) Rear impact-absorbing structure.
- e) Side impact-absorbing structure.

To approve any of the above structures, the presence of an FIA technical delegate is required. The static load tests must be carried out with measuring equipment verified by the FIA; the dynamic impact tests must be carried out at an FIA-approved institute.

2) Request for approval

In order for one of the above-mentioned safety structures to be approved, the FIA must receive a request from the rolling chassis manufacturer beforehand at the following address:

FIA Technical Department
2 Chemin de Blandonnet
CH 1215 Geneva 15
Switzerland
Tel.: +41 22 544 44 00
Fax: +41 22 544 44 50

3) Approval procedure

Upon receipt of a request for any of the above-mentioned tests, the FIA will arrange a date and venue with the rolling chassis manufacturer and will appoint a technical delegate to supervise these scheduled tests.

For each trip made by an FIA technical delegate to supervise any scheduled tests, the manufacturer will be charged a fee, which is levied annually by the FIA ([€2812 for 2021](#)).

Once all the safety structure tests have been successfully carried out and the manufacturer has settled the FIA fee, he will receive the FIA chassis test report for his car.

The rolling chassis manufacturer is obliged to supply all his customers with a copy of the FIA chassis test report together with the survival cell.