



UNIVERSITY:		CAR NUMBER:	
SEF SUBMITTED?	<input type="checkbox"/> YES <input type="checkbox"/> NO	ESF PASSED?	<input type="checkbox"/> YES <input type="checkbox"/> NO
FMEA PASSED?	<input type="checkbox"/> YES <input type="checkbox"/> NO	CHARGING TYPE:	
TS VOLTAGE:	CS VOLTAGE:	NUMBER OF DRIVERS:	
		TALLEST DRIVER:	HEIGHT:

IMPORTANT

PRESENT THE VEHICLE FOR INSPECTION IN THE FOLLOWING ORDER

1. ELECTRICAL INSPECTION
2. TECHNICAL INSPECTION
3. TILT TABLE INSPECTION
4. RAIN TEST
5. READY TO DRIVE SOUND INSPECTION
6. BRAKING PERFORMANCE INSPECTION

**THIS FORM MUST STAY WITH THE CAR UNTIL THAT SPECIFIC PART OF INSPECTION HAS BEEN COMPLETED
NOTE - IF THERE IS A CONFLICT BETWEEN THIS FORM AND THE RULES, THE RULES PREVAIL**

PART 1 ELECTRICAL INSPECTION

Scrutineer name:	Start time:	End time:
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Check that ESF, FMEA and datasheets of the following components are **available printed on paper**:

Available? Check if yes	ESF <input type="checkbox"/>	FMEA <input type="checkbox"/>	IMD <input type="checkbox"/>
	Discharge Circuit <input type="checkbox"/>	Pre-Charge Circuit <input type="checkbox"/>	High Voltage Disconnect <input type="checkbox"/>
Tractive System <input type="checkbox"/>	Master Switches and Shutdown Buttons <input type="checkbox"/>	Accumulator isolation relays <input type="checkbox"/>	Accumulator container material <input type="checkbox"/>
Active Light <input type="checkbox"/>	Accumulator fuse <input type="checkbox"/>	Torque Encoder Sensor <input type="checkbox"/>	HV wiring <input type="checkbox"/>

GENERAL

Check that on self developed PCBs TS and CS are clearly separated	Check spare PCBs if available or if built-in PCBs are easily accessible	visible check	
Two tractive system voltage measuring points must be installed directly next to the master switches, right side of the vehicle, shoulder height of the driver.	The measuring points must be protected by a non-conductive housing that can be opened without tools. The measuring points must be protected from being touched with the bare hand / fingers, once the housing is opened. 4mm banana jacks rated to an appropriate voltage level have to be used.	visible check	
Measure TS Voltage at measurement points	No voltage should be present at the measurement points	Measure with multi-meter	
Discharge Circuit	The discharge circuit has to be wired in a way that it is always active whenever the safety circuit is open.	If a discharge circuit is used a low resistance can be measured between HV+ and HV- whenever the tractive system is de-activated.	
HV cabling	Professionally built and securely attached	visible check	
	All visible HV wiring or their cable channels must be orange	visible check	
	If HV wires run through an area in which mechanical damage to the wire is likely then the wiring has to run in orange non-conductive cable channels . Shielded cables may be accepted as alternative to cable channels but have to be especially mentioned and approved in the ESF.	visible check	
	No wires are allowed to run lower than the chassis	visible check	
	TS wires and CS wires are clearly separated / do not run directly next to each other / bounded together by cable rods or in the same cable channel !!! ALLOWED FOR PILOT CONTACTS OR INTERLOCK SIGNALS !!!	visible check	
	Wires must be marked with gauge, temperature rating and voltage rating, serial number or norm is also sufficient, if the team shows the datasheet in printed form	visible check	
	Wire temperature rating must be suitable for position of the wire in the car (e.g. next to hot components)	visible check	
HV cabling / connections	Using only insulating tape or rubber-like paint for insulation is prohibited .	visible check	
Each housing/enclosure containing HV parts (except motor housings) must be labelled with a HV-sticker)	Except Motor Housing	visible check	
It must not be possible to touch conductive parts of the tractive system		visible check	
High Voltage Disconnect	At least one pole of the HV system has to be able to be interrupted by quickly removing an accessible element, fuse or connector to be able to disconnect the HV-system from the car	The team should show and demonstrate how to operate the HVD.	
High Voltage Disconnect	The HV Disconnect has to be clearly marked with "HVD".	visible check	

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Tractive System Parts	All parts belonging to the tractive-system have to be positioned within the surface defined by the top of the roll bar and the outside edge of the four tires (See Figure 13 in the FSAE rules). In side view no part of the tractive-system can project below the lower surface of the frame or the monocoque, whichever is applicable.	visible check	
All energy from accumulators or accumulator. Containers must flow through a single point (for energy measuring)		visible check, if possible	
Tractive system active light must be mounted under the highest point of the main roll hoop		visible check	
Check position and type of the shutdown buttons	One shutdown button, push-pull or push-rotate-pull on each side behind the drivers compartment (height approx. driver's head), one in the cockpit and easily accessible by the driver. Minimum diameter of shutdown buttons on the side = 40mm. Minimum diameter of shutdown button in the cockpit = 24mm.	visible check	
Shutdown Button position	The shutdown buttons are not allowed to be easily removable, e.g. mounted onto a removable body work.	visible check	
Check position of the brake-over-travel-switch	Brake-over-travel-switch behind the brake pedal	visible check	
Check position and type of the master switches	TS master switch must be close to CS master switch on the right side of the vehicle, approx. At the height of the drivers shoulders, clearly marked with HV and LV respectively and indicated "on" position. Both switches must be a rotary type with a removable key / handle	visible check	
A firewall must separate the driver compartment from all tractive system components and any oil or liquid cooling systems.	Even if cables are running next to the driver compartment they have to be shielded by a firewall	visible check	
In case of using a non-metal material for the firewall (i.e. carbon fibre, fibreglass, etc.) a fire resistant heat protection shield with a metal surface must be fitted to that side of the firewall on which the tractive system components are.	Aluminium tape or foil will not be accepted as a metal surface. It is only allowed to seal small gaps. This metal material used as the firewall must have a minimum thickness of 0.3mm.	visible check	
ACCUMULATOR CONTAINER			
HV Accumulator(s) must be enclosed in container(s)		visible check	
Internals of accumulator containers	If the accumulator container(s) is not easily accessible during E-Scrutineering, detailed pictures of the internals during assembly have to be provided.	visible check	
Internals of accumulator containers	Contacting / interconnecting the single cells by soldering in the high current path is prohibited . Soldering wires to cells for the voltage monitoring input of the BMS is allowed, since these wires are not part of the high current path.	visible check	
Each container must have an indicator light or an analogue voltmeter showing that voltages greater than 40V DC are present outside of the container	The indicator must always work , e.g. even if the container is removed from the car and carried around.	visible check	
If the HV-connectors of the accumulator containers can be removed without the use of tools, a pilot contact/interlock line has to be implemented which breaks the current through the AIRs whenever the connector is removed.		visible check	
Spare accumulators have to be of the same size, weight and type	Only applicable if spare accumulators are used	weight, visible check, mark	
Breakthroughs or holes in the container are only allowed for the wiring-harness, ventilation, cooling or fasteners. These holes must be sealed against water.	Openings for ventilation should be of a reasonable size, e.g. completely open sidepods containing accumulators are not allowed. The container has to be completely closed at all times, when mounted to the car and also when dismantled from the car without the need to install extra protective covers.	visible check	
If the container is completely sealed, it must have an equalizing valve		visible check	
BATTERY MANAGEMENT SYSTEM			
Each accumulator must be monitored by a BMS	Activate CS	Show current measurement data of the BMS by connecting a laptop or on a display at the system or in the cockpit	
BMS must monitor the cell voltage of each cell	Activate CS		



BMS must monitor the temperature of at least 35% of the cells, if a cell chemistry is used, which is not intrinsically safe	Activate CS		
Measure resistance of the chassis conductive parts (I_{meas} >= 1A), Resistance needs to be below 0,3 OHM to pass			
	Firewalls	[mΩ]:	
	Accumulator container if electrically conductive	[mΩ]:	
	Conductive housings with TS parts inside	[mΩ]:	
Necessary for every part that may be influenced by inductive or capacitive coupling (connected to electric system)			
	Steering wheel surface	[mΩ]:	
	Pedal box	[mΩ]:	
	Main Roll hoop	[mΩ]:	
	Suspension Front left	[mΩ]:	
	Suspension Front right	[mΩ]:	
	Suspension Rear left	[mΩ]:	
	Suspension Rear right	[mΩ]:	
	Driver Controls / Switches / Etc.	[mΩ]:	
	External Heat Sink	[mΩ]:	
	Additional Part:	[mΩ]:	
	Additional Part:	[mΩ]:	
Measure the isolation between HV measuring points and chassis ground, choose next voltage level above the tractive system voltage level, ASK Teams if nothing can break down with this test			
	HV+ Measured resistance:	R iso+ [kΩ] (min 500 Ohm/Volt)	
	HV- Measured resistance:	R iso- [kΩ] (min 500 Ohm/Volt)	
!!TEST AT HIGH VOLTAGE!!			
All driven wheels have to be off the ground! Car has to be jacked up with driven wheels removed			
TS only allowed to be powered up, when CS is powered up	Try to switch on Tractive System with Control System Master switch in Off-Position	No voltage above 40VDC allowed at measurement points	
Measure HV during following tests	less than or equal to 600VDC	[V]:	
Pre-Charge Circuit	A circuit that is able to pre-charge the intermediate circuit to at least 90% of the current accumulator voltage before closing the second AIR has to be implemented.	Check with multimeter during power up of the tractive system that the system is pre-charged before the second AIR closes.	
Accumulator Indicator Light or analogue voltmeter has to show if voltage above 40VDC is present outside of the container	Check during following tests of the tractive system; The indicator must always work , e.g. even if the container is removed from the car and carried around.	visible check	
Tractive system active light must be switched on whenever outside of accumulator container exceeds 40V DC or 25V AC RMS or when the accumulator insulation relays are closed	Check during following tests of the tractive system	visible check	
Tractive system active light must be clearly visible from every horizontal direction, even in bright sunlight	Check during following tests of the tractive system. Small angels of invisibility may be caused by the main roll hoop.	visible check	
The tractive system active light must be red	Check during following tests of the tractive system	visible check	
The TSAL has to flash continuously with a frequency between 2Hz and 5Hz.	Check during following tests of the tractive system	visible check	
Calculate IMD Test-Resistor Value	R test = TS voltage * 250Ω/V	R test [kΩ]:	
IMD indicator light inside the cockpit must be marked with "IMD" or "GFD"		visible check	
IMD status must be shown to the driver (visible in bright sunlight)	Check during following IMD Test	visible check	
IMD test	Activate Tractive System, Connect R test between HV+ and chassis ground	TS voltage must decrease below 40V in 5 sec, IMD may need up to 20s to react	
	Activate Tractive System, Connect R test between HV- and chassis ground	TS voltage must decrease below 40V in 5 sec, IMD may need up to 20s to react	

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Driver acknowledge for IMD	The tractive system may not automatically return to active state after the test resistor was removed. A driver acknowledge is needed.	Demonstrated by the team.	
Seal all important parts after the IMD test was passed successfully	Accumulator container, Motor Controller Housing, etc.		
Check Tractive System master switch, shutdown buttons and brake-over-travel-switch	All switches on --> TS master switch off	TS voltage must decrease below 40V in 5 sec	
	All switches on --> left shutdown button off	TS voltage must decrease below 40V in 5 sec	
	All switches on --> right shutdown button off	TS voltage must decrease below 40V in 5 sec	
	All switches on --> Cockpit shutdown button off	TS voltage must decrease below 40V in 5 sec	
	All switches on --> brake-over-travel-switch off	TS voltage must decrease below 40V in 5 sec	
Torque Encoder must return to original position, if not actuated		Check during torque encoder implausibility check	
At least two sensors must be fitted as torque encoder	Two separate sensors in one case allowed, if they are electrically separate, check datasheet if in doubt	Visible check	
Check implausibility function of torque encoders by disconnecting one	If an implausibility occurs between the values of these two sensors the power to the motor(s) has to be shut down completely. It is not necessary to completely deactivate the Tractive System, the motor controller(s) shutting down the power to the motor(s) is sufficient. Motor power is allowed to be restored after the driver has selected the sensor that works correctly.	Check that driven axles turn, then disconnect one sensor and check that the system acts within the rules.	

**!!Test at High voltages completed!!
TRACTIVE SYSTEM HAS TO BE SHUT-OFF!**

Check car movement with all electrical systems deactivated		try to move the car manually with deactivated TS	
Check and mark Charger	Charger needs to be professionally built, e.g. no damaged insulation on cables etc.	visible check and mark	
basic set of HV-proof tools	Insulated cable shear	visible check	
	Insulated screw drivers	visible check	
	Multimeter with protected probe tips	visible check	
	Insulated spanners, if screwed connections are used in the Tractive System	visible check	
	Face Shield	visible check	
HV isolating gloves		visible check	
HV isolating blanket(s) of at least 1,5m ²		visible check	
Push Bar	A pair of high-voltage insulating gloves and a multimeter have to be attached to the push bar.	visible check	
	If a tool is needed to open the HVD, this tool has also to be attached to the push bar.	visible check	

NON-COMPLIANCE / COMMENTS:

APPROVED BY:

DATE / TIME:



UNIVERSITY:		CAR NUMBER:	
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PART 2 TECHNICAL INSPECTION

Scrutineer name:	Start time:	End time:
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TYRES & WHEELS & DRIVER'S EQUIPMENT

<p>DRY TYRES - Make:</p> <p>DRY TYRES - Size:</p> <p>DRY TYRES - Compound:</p> <p>DRIVERS' SUITS - FIA 1986 or 2000, or SFI 3-2A/10, FIA 8856-2000 minimum rating, and LABELED AS SUCH.</p> <p>UNDERWEAR certified to SFI 3.3 or FIA 8856-2000</p> <p>HELMETS -Snell SA2000, SA2005, SA2010, M2000, M2005, M2010, K2000, K2005, K2010, BS 6658-85 Type A/FR (not Type A and B). SFI 31.2A, SFI 31.1/2005, FIA 8860-2004. Closed Face, no Open Face</p> <p>ARM RESTRAINTS - Must be installed so the driver can release them and exit unassisted regardless of vehicle's position.</p> <p>HAIR COVER - Fire resistant (Nomex or equiv.) balaclava of full helmet skirt REQUIRED FOR ALL DRIVERS.</p> <p>GOGGLES / FACE SHIELDS - made of impact resistant material.</p> <p>GLOVES / SHOES - F Fire resistant material. No holes; No oily. No all-leather gloves. labeled as SFI 3.3 or FIA 8856-2000</p> <p>SOCKS - Fire resistant material, No polyester. No bare skin.</p>	<p>RAIN TYRES - Make:</p> <p>RAIN TYRES - Size:</p> <p>RAIN TYRES - Compound:</p> <p>RAIN TYRES - 2,4 mm (3/32 in.) min. tread depth moulded by tire manufacturer.</p> <p>PUSH BAR - With car, detachable, push & pull function for 2 people standing erect. The push bar must be located behind the rear axle when the car is moved. FIRE EXTINGUISHERS must be installed High Voltage Insulation Gloves and Multimeter must be attached.</p> <p>FIRE EXTINGUISHERS - Two (2) hand-held, 0.9 kg (2 lb.) minimum, dry chemical (10BC, 1A10BC, 34B, 5A 34B, 20BE or 1A 10BE), Aqueous Film Forming Foam (AFFF) fire extinguishers are prohibited, 1 WITH CAR installed on push-bar, 1 in paddock. (Must see BOTH at Tech.). On-board fire system encouraged as alternative to hand-held that moves with car. On-board hand-held extinguisher NOT ALLOWED. Halon extinguishers no longer allowed.</p> <p>ACCUMULATOR HAND CART - needed if accumulator will be externally charged, equipped with brake, brake actuation must be designed as dead man's switch (brake unactuated means braking!)</p>
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EXTERIOR, GENERAL

<p>DRIVER RESTRAINT HARNESS - 5, 6 or 7 point with single metal quick release to SFI 16.1, 16.5 or FIA specs and be labeled. 76 mm lap belt; shoulder belts 76 mm, 50 mm wide OK with HANS 50mm lap belts OK for FIA&SFI 16.5, Not OK for 16.1; all attached securely to primary structure (25.0 mm x 1.75mm). All lap belts must have Quick Adjusters. Reclined drivers must have 6 or 7 point, and Quick Adjuster sub-belts or 2 sets of sub belts.</p> <p>LAP BELT MOUNTING - Must pass over pelvic area at between 45 - 65 deg. to horizontal for upright driver, 60-80 deg. for reclined. Pivoting mounting with eye bolts or shoulder bolts attached securely to Primary Structure.</p> <p>SHOULDER HARNESS MOUNTING - Mounting points 178 - 229 mm apart. Angle from shoulder between 10 deg. up and 20 deg. down to horizontal. Attach to Primary Structure - 25,4 x 2.4 mm or 25.0 mm x 2.5 mm steel tube min. not to put bending loads into Main Hoop Bracing W/O extra bracing. Gussets or braces if not straight to main hoop.</p> <p>WHEELS - Four wheels not in a line, 20,32 cm (8.0 in) min. diam. Wheels with single wheel nut must have positive retainer. No aluminium or hollow wheel bolts</p>	<p>VISIBILITY - Minimum of 100 deg. field either side. Head rotation allowed or mirrors. If mirrors, must be firmly installed and adjusted</p> <p>VEHICLE CONTROLS - All controls, including shifter, must be inside cockpit. No arms or elbows outside side impact system to actuate</p> <p>PERCY - Helmet of tallest driver AND 95th percentile male to be 50 mm (2.0 ins) below line between top of front and main roll hoop AND between top of main hoop to rear attachment point of main hoop bracing.</p> <p>EGRESS - 5 seconds max. to exit to side of vehicle from fully seated position with all safety equipment in every steering wheel pos.; wings must remain fixed in position. ALL DRIVERS</p> <p>CAR NUMBERS - On front & both sides of car, minimum 15.24 cm (6") tall, 20 mm (3/4") stroke & spacing, Black on White, White on Black only, specified background shapes. Must be clearly visible.</p> <p>WHEELBASE - Minimum 1524 mm (60 in)</p> <p>WING EDGES - Leading edges must be 12.7 mm (0.5 in) min. radius. ALL other edges, including Gurney flaps, must be 1.5 mm (0.06in.) min. radius.</p>
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BODY & STYLING - Open wheeled, open cockpit, formula style body.	AERODYNAMICS - ALL aero devices, wings, u/trays, splitters, no further forward than 762mm. (30") in front of front tires, no more rearward than 305mm (12") of rear tires, no wider than outside edge of front tires or rear tires, whichever is wider. No power ground effects.
BODYWORK - Min. 38 mm (1.5 in.) radius on nose. No large openings in bodywork into driver compartment in front of or alongside driver, (except cockpit opening).	SCHOOL NAME & OTHER DECALS - School Name, or recognised initials - 5.1 cm (2") tall min. on both sides in Roman letters. Must be clearly visible.
JACKING POINT - Must have an exposed tube at the rear perpendicular to the longitudinal axis 30.46 cm (12.0 in) long by 2.54 cm (1.0 in) O.D. Painted orange. Visible to person standing 1 metre behind car.	
TECH STICKER SPACE - 7.5cm x 15 cm (10"x8") on centerline of upper front nose of car	

PRIMARY STRUCTURE

COCKPIT OPENING - Fig 8 template passes down from above cockpit rim to below top SIS tube) or to 350 mm above ground for monocoques). Strg wheel, strg column, seat & padding can be removed. No moving or removing firewall. No fore/aft translation of template.	COCKPIT INTERNAL CROSS SECTION - Fig. 9 template passes forward from cockpit to 100 mm rear of pedals. Steering wheel and padding removable with no tools & driver-in can be removed.
ALTERNATIVE TUBING & MATERIALS - If used, team must show an APPROVED Structural Equivalency Form.	SIDE IMPACT PROTECTION - Min. of two (2) tubes + diagonal must connect the main and front hoops in straight line. Upper tube must be between 300 mm and 350 mm (11.8" and 13.8") above the ground with driver in car. Lower tube can be lower frame member. At least one diagonal per side must connect the upper and lower members between the main and front hoops. All tubes to be 25.4 x 1.65mm (1.0" x 0.065") or 25.0 x 1.75mm or 25.4 x 1.6 mm wall steel or equivalent. Monocoques require signed SEF.
MAIN HOOP - MUST BE STEEL. 25.4 x 2.4mm (1.00" x 0.095") or 25.0 x 2.5mm wall. Must be 1 piece & extend to lowest frame member. 380 mm (15 ins) apart (inside dim.) where attaches to the Major Structure. Above Major Structure, must be within 10 deg. of vertical. Smooth bends with no wrinkles.	FRONT IMPACT PROTECTION - Feet must be completely within Major Structure & rearward of the Front Bulkhead (25.4 x 1.65mm or 25.0 x 1.75 mm or 25.4 x 1.60 mm steel tube or equiv.) No non-crushable objects forward of bulkhead. No wing supports through the IA. Need Impact Attenuator forward of bulkhead, 200 mm long x 200mm wide x 100mm high. IA must be securely fastened directly to the bulkhead welded or with four screws M8 Grade 8.8 and capable of taking transverse & vertical loads. No tape, etc.
MAIN HOOP BRACING - MUST BE STEEL. One brace each side, 25.4mm x 1.65mm or 25.0 mm x 1.75mm or 25.4 mm x 1.60mm min., attached within 160 mm of top. Min. 30 deg. included angle with hoop. If main hoop is not vertical, bracing must not be on same side of vertical as main hoop. No bends. No rod-ends. Proper construction for removable braces (capping etc.) on BOTH ENDS. Must TAKE LOAD BACK TO VERY BOTTOM OF MAIN HOOP thru' proper triangulated structure.	ANTI INTRUSION PALTE - A 1.5mm solid steel metal or 4.0mm solid aluminium metal sheet (same size as outside dims.) must be integrated in the IA. IMPACT ATTENUATOR - Test piece presented and same as IA on car.
HEAD RESTRAINT - Near vertical, 38.1 mm thick, energy absorbing padding. Max. 25.4 mm from helmet. Helmet contact point 50 mm min. from any edge. APPLIES TO ALL DRIVERS. Must take 890 N (200 lbs.f) load.	FRONT BULKHEAD SUPPORT - Support back to front roll hoop 3 tubes per side; 1 bottom, 1 top within 50 mm of top of bulkhead, with node to node diagonal ((must form a triangle with Front BulkH'd and either top or bottom tube); all 25.4 x 1.25mm wall steel tube or equiv. (25.0 mm x 1.5 mm and 26.0 mm x 1.2 mm metric tubes OK)
FRONT HOOP - Must be closed section metal tube. Can be multi-piece. Must extend down to lowest frame member. No lower than top of steering wheel. Max. 20 deg. to vertical. 25.4 x 2.4mm (1.00" x 0.095") or 25.0 x 2.5 mm wall steel or equiv. Longitudinal distance to steering wheel max. 250 mm.	INSPECTION HOLES - 4.5 mm (0.18") inspection holes req'd in non-critical areas of front & main hoops. Inspectors may ask for holes in other tube(s).
ROLL BAR PADDING - Rollbar or bracing that could be hit by driver's helmet must be covered with 12.7 mm (0.5 in) thick, SFI or FIA (hard) padding. Pipe insulation and foam not acceptable.	FRONT HOOP BRACING - Two forward facing braces, 25.4 x 1.65mm (1.0" x 0.065") or 25.0 x 1.75mm or 25.4 x 1.6mm wall steel or equivalent, attached within 50 mm. (2 ins) of top. Extra rearward bracing required if Front Hoop leans backwards more than 10 deg.
SEAT - Insulated against heat conduction, convection and radiation. Lowest point no lower than bottom of side rails OR must have longitudinal, 25.4 x 1.65mm (1.00" x 0.065") steel tube underneath.	CONFORMS TO SEF? If monocoque, must see laminate test specimen (B.3.28), Steel backing plates (>2mm) used @ attachment point
OTHER SIDE TUBES - Design prevents driver's neck hitting bracing or other side tubes	

STEERING, SUSPENSION, BRAKES

SUSPENSION - Fully operational with dampers front and rear; 50mm (2.0 in) minimum wheel travel with driver in vehicle.	STEERING - On at least two wheels with positive stops to prevent linkage lock up or tires from contacting any part of the car. 7 degrees max. freeplay at the steering wheel. NO STEER-BY-WIRE on front wheels. Rear steer limited to + or - 3 deg. with mechanical stops.
VISIBLE ACCESS - To ALL components on Tech form.	FASTENERS - Steering, braking, harness and suspension systems must use SAE Grade 5 or Metric Grade M8.8 or higher specs (AN/MS) with positive locking mechanisms, no Loctite or lock washers. Minimum of 2 exposed threads. Rod ends in single shear must be captured by a washer larger than the ball diameter. Adjustable tie-rod ends must have jam nuts to prevent loosening. No Nylon lock nuts for Brake calipers or Brake discs. No button head cap, pan head or round head screws in critical locations, e.g cage structure or harness mount.
BRAKES - Dual hydraulic system & reservoirs, operating on all four wheels, (one brake on limited slip is OK). System must be protected by structure or shields from drivetrain failure or minor collisions. No plastic brake lines. No brake-by-wire. No parts below chassis/tub in side view. First 50% of brake pedal travel may be used to regenerate brake energy, remaining brake pedal travel must actuate the hydraulic brake system. Brake pedal capable of 2000N (450 lbs-f), no failures if official exerts max force (seated normally in vehicle).	SUSPENSION PICK-UP POINTS - Inspected thoroughly for integrity.
STEERING WHEEL - Continuous perimeter, near round (no concave sections) with driver operable quick disconnect. 25cm max from front hoop	

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INTERIOR	
<p>FLOOR CLOSEOUT PANEL - Required from foot area to firewall; solid, non-brittle material; multiple panels are OK if gaps less than 3.18 mm (1/8 in).</p>	<p>FIREWALL - Fire resistant material; must separate driver compartment from cooling & oil systems. Pass-throughs OK with grommets. Multiple panels OK if gaps sealed. Must protect (line-of-sight up to mid-height of driver's helmet) from cooling and oil systems. If used a non metal material for the firewall (i.e. carbonfibre, fibreglass etc) a fire resistant heat protection shield with a metal surface must be fitted. Minimum thickness of used metal material is 0.3mm</p>
<p>DRIVER'S FOOT PROTECTION - Feet must be rearward of the Front Bulkhead and no part of shoes above or outside the Major Structure in side or front views.</p>	
<p>COOLANT Only 100% water. NO ADDITIVES WHATSOEVER.</p>	
<p>FLUID LEAKS – Oil, grease, coolant, Brake fluid -> none permitted</p>	
<p>DRIVER'S LEG PROTECTION - Covers inside cockpit over sharp and moving suspension & steering components</p>	

ELECTRICAL
<p>BRAKE LIGHT – ONE Working RED brake light, min 15cm² black background and a rectangular, triangular or near round shape 15 watts min. or equiv. required, clearly visible from the rear; on veh. centerline line; height between wheel centerline & driver's shoulders.</p>

ACCUMULATOR CONTAINERS (specific for electric cars)	
<p>ACCUMULATOR CONTAINERS - All accumulator containers must be rugged and rigidly mounted to the chassis to prevent the containers from loosening during the dynamic events or possible accidents. If fasteners are used for mounting an accumulator container, they have to comply to Article B14 of the FSAE rules.</p>	<p>ACCUMULATOR CONTAINER POSITION - All accumulator containers must lie within the surface defined by the top of the roll bar and the outside edge of the four tires (See Figure 13 in the FSAE rules).</p>
<p>CFRP & GFRP ACCUMULATOR CONTAINERS - If container is made of CFRP, GFRP or similar a resin system has to be used that is self-extinguishing or appropriate measures have to be taken to protect the inner side of the accumulator containers against fire. The data sheet of the used resin system has to be presented at scrutineering, if a self-extinguishing resin system is used.</p>	<p>ACCUMULATOR CONTAINER MATERIAL - The accumulator container must be built of mechanically robust and fireproof material.</p>
	<p>IMPACT PROTECTION OF ACCUMULATOR CONTAINERS - All accumulator containers must be protected from side or rear impact collisions. If an accumulator container or parts of it are mounted outside of the primary structure (B.3.2) an additional impact structure according to FSAE rules B3.24 or B3.26 must be build to protect the accumulator.</p>

NON-COMPLIANCE / COMMENTS:

APPROVED BY:	DATE / TIME:
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PART 3 TILT TABLE INSPECTION

LIQUID SPILLAGE – No liquid spill permitted when car is tilted to 45 degrees in the direction most likely to create spillage.	VEHICLE STABILITY - All wheels in contact with tilt table when tilted to 60 degrees to the horizontal.
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NON-COMPLIANCE / COMMENTS:

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APPROVED BY:	DATE / TIME:
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PART 4 RAIN TEST

RAIN PROOF – The car is lifted off the ground. Tractive system has to be active (TSAL ON). Water like rain will be sprayed at the car for 120sec. – Passed if the Insulation Monitoring Device does not react and shut down the Tractive System (TSAL ON) during and 120sec after the rain test. No driver is allowed to sit in the car during the test. Total test duration 240sec.

NON-COMPLIANCE / COMMENTS:

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APPROVED BY:	DATE / TIME:
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PART 5 READY TO DRIVE SOUND INSPECTION

SIGNAL SOUND - Minimum of 70 dB(A) (“A” – scale) - in a radius of 2 meters around the car.

NON-COMPLIANCE / COMMENTS:

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APPROVED BY:	DATE / TIME:
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PART 6 BRAKING PERFORMANCE INSPECTION

BRAKING PERFORMANCE - Must lock-up all four wheels on dry asphalt at any speed without electrical braking from motors. The tractive system has to be shut down by the driver before braking. The Tractive System Active Light has to be OFF during breaking or shortly after the Car stopped (may take up to 5 sec. after shut down). If adjustments are made to the vehicle after three failed attempts before retest, the car may run on the Practice Track without the final Brake Performance Tech Sticker.

NON-COMPLIANCE / COMMENTS:

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APPROVED BY:	DATE / TIME:
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