

2020 FORMULA SAE-A TECHNICAL INSPECTION SHEET

INTERNAL COMBUSTION ENGINE (ICE) CLASS

UNIVERSITY:	CAR NUMBER:
NUMBER OF DRIVERS:	TALLEST DRIVER'S HEIGHT:
ENGINE MODEL:	ENGINE BORE x STROKE:
FUEL TYPE: <input type="checkbox"/> GASOLINE (98 RON) <input type="checkbox"/> E85	ANTI-LOCK BRAKES: <input type="checkbox"/> YES <input type="checkbox"/> NO

<p>Present the vehicle for inspection as follows:</p> <ol style="list-style-type: none"> 1. Mechanical Technical Inspection 2. Tilt Table Test 3. Noise & Brake Test 	<p>(Inspector Use Only)</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%;">Initials:</td> <td style="width: 25%;">Day</td> <td style="width: 25%;">Time In:</td> <td style="width: 25%;">Time Out:</td> </tr> <tr> <td>Initials:</td> <td>Day:</td> <td>Time In:</td> <td>Time Out:</td> </tr> <tr> <td>Initials:</td> <td>Day:</td> <td>Time In:</td> <td>Time Out:</td> </tr> <tr> <td>Initials:</td> <td>Day:</td> <td>Time In:</td> <td>Time Out:</td> </tr> <tr> <td>Initials:</td> <td>Day:</td> <td>Time In:</td> <td>Time Out:</td> </tr> <tr> <td>Initials:</td> <td>Day:</td> <td>Time In:</td> <td>Time Out:</td> </tr> </table>	Initials:	Day	Time In:	Time Out:	Initials:	Day:	Time In:	Time Out:	Initials:	Day:	Time In:	Time Out:	Initials:	Day:	Time In:	Time Out:	Initials:	Day:	Time In:	Time Out:	Initials:	Day:	Time In:	Time Out:
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IMPORTANT INFORMATION FOR TEAMS

- Please refer to the checklist provided overleaf before Registering at the event. *Reference:* LOCAL ADDENDUM AD ADMINISTRATIVE Rule AD 4.4
- Teams will not be permitted to commence Technical Inspection without presenting the necessary documentation and test samples as requested or reminded of at Registering.
- Teams must weigh their cars before Design Event judging, preferably after passing Technical Inspection but before the Tilt Table Inspection. Vehicles are to be complete and ready to run, i.e., with coolant, lubricants and brake fluid, but without fuel.
- If there is a conflict between this document and the rules, the rules prevail.

PRE- REGISTRATION		AND	TECHNICAL INSPECTION CHECK LIST				
ALL DRIVERS ARE TO BE PRESENT AFTER TECHNICAL INSPECTION FOR DRIVER EGRESS TIMING?	<input type="checkbox"/> YES	<input type="checkbox"/> NO					
STRUCTURAL EQUIVALENCY SPREADSHEET PASSED? (T3.9)	<input type="checkbox"/> YES	<input type="checkbox"/> NO	HARDCOPY PRESENTED?	<input type="checkbox"/> YES	<input type="checkbox"/> NO		
IMPACT ATTENUATOR REPORT PASSED? (T3.21)	<input type="checkbox"/> YES	<input type="checkbox"/> NO	HARDCOPY PRESENTED?	<input type="checkbox"/> YES	<input type="checkbox"/> NO		
APPROVAL TO USE ELECTRONIC THROTTLE CONTROL?	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A	HARDCOPY PRESENTED?	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
ELECTRONIC THROTTLE CONTROL FAILURE MODES & EFFECTS ANALYSIS PASSED?	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A	HARDCOPY PRESENTED?	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
RULES ENQUIRIES SUBMITTED & ANSWERS RECIEVED?	<input type="checkbox"/> YES	<input type="checkbox"/> NO		HARDCOPY PRESENTED?	<input type="checkbox"/> YES	<input type="checkbox"/> NO	
TECHNICAL INSPECTION SHEET (SELF INSPECTION) COMPLETED?	<input type="checkbox"/> YES	<input type="checkbox"/> NO		HARDCOPY PRESENTED?	<input type="checkbox"/> YES	<input type="checkbox"/> NO	
TESTED SAMPLE OF IMPACT ATTENUATOR (IA), INCLUDING STANDARD IA IF REQUIRED DUE TO BULKHEAD CONFIGURATION				SAMPLE PRESENTED?	<input type="checkbox"/> YES	<input type="checkbox"/> NO	
BULKHEAD SAMPLE FROM THE IMPACT ATTENUATOR TEST IF NOT INCLUDED WITH THE ATTENUATOR				SAMPLE PRESENTED?	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A



TECHNICAL INSPECTION VEHICLE PANEL






The top 2/3 is common for each class and provided to teams at registration.

Combustion class vehicles will receive substituted elements as indicated.

Diagram showing a fuel pump icon and a box labeled "FUEL CAPACITY" with "mL" and "OFFICIAL USE ONLY" text. Below it is the label "COMBUSTION VEHICLE". An arrow points from this box to the "ELECTRIC VEHICLE" section of the main panel.

FORMULA SAE AUSTRALASIA logo, "FORMULA SAE-A" title, "[event dates]" and "[event location]" text, and SAE AUSTRALASIA logo.

 **ELECTRIC VEHICLE**
 **WEIGH-IN**
MINIMUM WEIGHT kg
FRONT % WITH DRIVER %
OFFICIAL USE ONLY

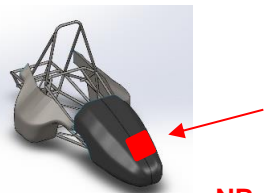
 **EV TECH INSPECTION** |
  **TECH INSPECTION** |
  **TILT TABLE** |
  **BRAKE TEST** |
  **RAIN TEST**

The bottom 1/3 is comprised of 5 event stickers, based on class and fuel type.

Combustion fuel type stickers are provided at registration, with all others after completing the respective task.

98 FUEL TYPE [OR] **E85** FUEL TYPE

NOISE TEST | **BRAKE TEST**



NB: This area to be left free for Vehicle Panel sticker.

MECHANICAL TECHNICAL INSPECTION

Lead Scrutineer:	Start Date/Time:		
TYRES & WHEELS			
Dry tyres	Make: _____ Size: _____ Compound: _____	Visual Check	
Rain tyres	Make: _____ Size: _____ Compound: _____	Visual Check. Rain tyres must have 3/32 in. minimum tread depth moulded by tyre manufacturer	
Wheels	Four wheels not in a line, 20.32cm (8.0 in) minimum diameter. Wheels with single wheel nut must have positive retainer	Visual Check	
DRIVERS' EQUIPMENT			
Helmets	Snell SA2000, SA2005, SA2010, SAH2010, SA2015; M2005, M2010, M2015; K2005, K2010, K2015. AS1698. BS 6658-85 Type A/FR (not Types A or B). ECE 22. SFI 31.1/2005 thru /2015; SFI 41.1/2005 thru /2015; FIA 8860-2004, 8860-2010, 8858-2010, 8859-2015. Closed Face, no Open Face, must have integrated shield (no dirt bike helmets). No camera mounts	Visual Check	
Goggles/face shields	Made of impact resistant material	Visual Check	
FHR - OPTIONAL	Forward Head Restraint <i>Type:</i> hans / Simpson brace	Visual Check	
Arm restraints	Min SFI Spec 3.3. Installed so the driver can release them and exit unassisted regardless of vehicle's position	Visual Check	
Hair cover	Fire resistant balaclava or full helmet skirt for all drivers	Visual Check	
Drivers' suits	Single piece FIA 1986 or 2000 Standard, or SFI 3-2A/1 or higher rating, and LABELLED AS SUCH	Visual Check	
Gloves	FIA Standard flame retardant gloves. No holes.	Visual Check	
Shoes	SFI 3.3 or FIA 8856-2000	Visual Check	
Underwear	FIA Standard flame retardant underwear	Visual Check	
Socks	FIA Standard flame retardant socks. No bare skin	Visual Check	
EXTERIOR GENERAL			
Fire extinguishers	Two (2) hand-held, 0.9 kg (2 lb.) minimum, dry chemical (10BC, 1A10BC, 34B, 5A 34B, 20BE or 1A 10BE) extinguishers; Must see BOTH at Tech Inspection. On-board fire system encouraged as alternative to hand-held that moves with car	Visual/Physical Check	
Push bar	With car, detachable, push & pull for 2 people standing behind the car. EVs: HV Disconnect tool, if used	Visual Check	
Jacking point	Must have an exposed tube at the rear perpendicular to the longitudinal axis approx. 30cm long by 2.5-2.9cm (1.0-1.125") O.D. Painted orange. Visible to person standing 1 meter behind car. Rear tyres must come off the ground using Quick-Jack (200mm lift)	Visual/Physical Check	
Body & styling	Open wheeled, open cockpit, formula style body. Vertical keep out zones 75mm in front & behind tyres (no aero exceptions,) tyres unobstructed from sides	Visual/Physical Check	
Car numbers	Number must appear on the front and both sides of vehicle. Minimum height: 150mm. Colour: Day glo yellow on a black background. Numbers must not be obscured by any parts of the car	Visual/Physical Check	

EXTERIOR GENERAL (CONT)			
School name and other decals	School Name, or recognized initials. Minimum height: 51mm on both sides in Roman letters Remember free area for Vehicle Panel Sticker. See page 3.	Visual/Physical Check	
Wings	Securely mounted, should not wiggle when gently touched, especially side to side. If in question, call organisers for formal test. Affix inspection sticker to front and/or rear wings/aerodynamic devices	Visual/Physical Check	
Wing edges	Horizontal leading edges minimum 5mm radius; vertical forward-facing edges minimum 3mm radius	Visual/Physical Check	
Event sponsor decals	Event sponsor decals displayed on front of car. Minimum dimensions: 500mm x 210mm	Visual/Physical Check	
Inspection sticker space	250mm x 200mm on centreline of upper front nose of car	Visual/Physical Check	
Bodywork	Minimum 38mm radius on nose. No large openings in bodywork into driver compartment in front of or alongside driver (except cockpit opening)	Visual/Physical Check	
Wheelbase	Minimum 1524mm (60 in)	Physical Check	
Aerodynamics	ALL aero devices, wings, under trays, splitters, maximum 70cm forward of front tyres, maximum 250mm rearward of rear tyres. Front wings no wider than outside of front tyres. REAR WINGS no wider than INSIDE of rear tyres. Under trays no wider than line between front and rear tyres. No power ground effects	Visual/Physical Check	
Aero vertical height	Rear wing max 1200mm above ground (incl. end plates); Front wing max 250mm above ground. No bodywork or aero higher than 500mm between axles (except centre 800mm of car, i.e., cockpit panels.)	Visual/Physical Check	
Cameras	If >0.25 kg, must be secured by two points, see T14.15. No cameras mounted to helmet	Visual/Physical Check	
PRIMARY STRUCTURE			
Alternative frame	If alternative tube size/material, approved Structural Equivalency Sheet (SES) required. If using Alternative Frame Rules, SRCF required. No magnesium in primary structure	Visual/Physical Check	
Inspection holes	Tech may use ultrasound to measure wall thickness and/or ask 4.5mm holes be drilled	Visual/Physical Check	
Main hoop	MUST BE STEEL. 1.00" OD x 0.095" wall or 25mm OD x 2.5mm wall. Must be 1 piece & extend to lowest frame member. 380mm apart (inside dim.) where attaches to bottom tubes of the Major Structure. Above Major Structure, must be within 10° of vertical. No part angled rearwards more than 10° from vertical. Smooth bends with no wrinkles	Visual/Physical Check	
Main hoop bracing	MUST BE STEEL. One brace each side, 1.00" x 0.065" or 25mm x 1.75mm minimum, attached within 16cm of top. Minimum 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 bottom of main hoop and node of upper side-impact tube thru proper triangulated structure	Visual/Physical Check	
Bolted joints	Edge of any bolt hole located > 1.5 x hole diameter from nearest edge of the material (Primary structure joints only)	Visual/Physical Check	
Shoulder harness mounting bar	1.00" OD x 0.095" wall or 25mm OD x 2.5mm wall steel or equiv. Gussets or braces if not straight to main hoop	Visual/Physical Check	
Front hoop	Must be closed section metal tube. 1.00" OD x 0.095" wall or 25mm OD x 2.5mm wall steel, or equiv. Can be multi-piece. Must extend down to lowest frame member. Maximum 20 deg. to vertical. No lower than top of steering wheel. Maximum 250mm horizontal distance to steering wheel	Visual/Physical Check	
Front hoop bracing	Two forward facing braces, 1.00" OD x 0.065" or 25mm OD x 1.75mm steel or equivalent, attached within 5cm of top. Extra rearward bracing required if Front Hoop leans backwards more than 10 degrees	Visual/Physical Check	
Other side tubes	Design prevents driver's neck hitting bracing or other side tubes	Visual/Physical Check	

PRIMARY STRUCTURE (CONT)			
Side impact protection	Minimum of two (2) tubes + diagonal must connect main and front hoops. Upper tube must be between 300mm and 350mm above the ground. 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 1.0" OD x 0.065" wall or 25mm OD x 1.75mm wall steel or equivalent. If Upper Side Impact tube is multi piece or bent, must have triangulating supporting tube from the furthest part of deviation from the straight line, back to a node on the chassis and the bent tube and support must be minimum 35mm x 1.2mm; T3.5.5 and T3.24.3(a). Monocoques require signed Structural Equivalency Sheet (SES)	Visual/Physical Check	
Front bulkhead	1.0" OD x 0.065" wall, or 25mm x 1.75mm wall, steel tube or equiv. No non-crushable objects forward of bulkhead	Visual/Physical Check	
Front bulkhead support	Support back to front roll hoop; minimum 3 tubes per side, all 1.00" OD x 0.049" wall steel tube or equivalent 1 bottom; 1 top within 50mm of top of bulkhead, and connecting within 4" above and 2" below upper side impact support (SIS) tube; 1 or more node-to-node diagonal to completely triangulate connections to upper and lower side impact support (SIS) tubes. (25mm x 1.5mm and 26mm x 1.2mm metric tubes OK)	Visual/Physical Check	
Impact attenuator	Need Impact Attenuator forward of bulkhead, 200mm long x 200mm wide x 100mm high. No wing supports through the IA. Bonded, or bolted to Plate w/ four 8mm bolts plus additional support	Visual/Physical Check	
Impact attenuator mounting	All cars must have 1.5mm steel, 4mm Al, or approved equivalent IA anti-intrusion plate. Plate must be capable of taking transverse and vertical loads (welded or minimum eight 8mm bolts). Same size as outside dimensions of Front Bulkhead if bolted or to tube c/l if welded. Standard Impact Attenuator Plate: requires diagonal brace if the outside edge of the Plate is >1" from the edge of the Standard Impact Attenuator on any side	Visual/Physical Check	
Seat	Insulated against heat conduction, convection and radiation. Lowest point no lower than bottom of side rails OR must have longitudinal 1.00" OD x 0.065" steel tube underneath	Visual/Physical Check	
Monocoque	Must see laminate test specimens (2 or more) for both side impact support (SIS) and primary structure constructions. Steel backing plates (>2mm thick) used at attachment points	Visual/Physical Check	
STEERING, SUSPENSION, BRAKES			
Ground clearance	Sufficient clearance so that no part of the car other than the tyres will contact the track surface	Visual/Physical Check	
Suspension	Fully operational with dampers front and rear; 50mm minimum wheel travel with driver in vehicle	Visual/Physical Check	
Suspension pickup points	Inspected thoroughly for integrity	Visual/Physical Check	
Brakes	Dual hydraulic system & reservoirs, operating all 4 wheels, (one brake on limited slip OK). System protected by structure/shields from d/train failure & minor collisions. No plastic brake lines or brake-by-wire. No parts below chassis/tub in side view. Brake pedal capable of 2000N (450 lbs-f) with no failures (tested only by organizers.)	Visual/Physical Check	
Steering wheel	Continuous perimeter, near round (no concave sections) with driver operable quick disconnect. 25cm maximum from Front Hoop	Visual/Physical Check	
Steering	All steerable wheels must have positive stops to prevent linkage lock-up or tyres contacting any part of the car. 7 degrees maximum free play at the steering wheel. NO STEER-BY-WIRE on front wheels. Rear steer limited to 6° total, with mechanical stops. No bonded joints in column	Visual/Physical Check	
Fasteners	Intake manifold, fuel rail, steering, braking, Impact Attenuator, harness & suspension system use SAE Grade 5, Metric Grade 8.8 or higher (AN/MS) w/ visible positive locking mechanisms, no Loctite or lock washers. Minimum of 2 exposed threads. Rod ends in single shear are captured by a washer larger than the ball diameter. Adjustable rod ends have jam nuts to prevent loosening. No button head cap, pan head or round head screws in critical locations, e.g., cage structure or harness mount. Nylon locknuts not for use above 80°C, i.e., near exhaust	Visual/Physical Check	
Cable steering	If steering is cable actuated, require approved Failures Modes and Effects Analysis (FMEA) (part of Structural Equivalency Sheet (SES) approval); confirm FMEA is representative of system, and reasonable	Visual/Physical Check	

INTERIOR			
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 bolt or shoulder bolt attached securely to Primary Structure	Visual/Physical Check	
Driver restraint harness	SFI 16.1, SFI 16.5 or FIA spec 5, 6 or 7 point and be labelled. 50mm wide shoulder belts OK with HANS. 50mm lap belts OK for FIA & SFI 16.5, not OK for SFI 16.1. 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. Sub belts cannot touch frame tubes or holes in seat. Belts expire 2yr from manufacture date or after expiration month (if SFI); or 5 years after year marked on label (if FIA)	Visual/Physical Check	
Harness mounts	No belts can pass through a firewall. (Belts must mount on driver side of firewalls.) All belts attached securely to primary structure - 1.00" OD x 0.065" steel tube minimum. Any tabs to be 1.0" x 0.063" thick minimum. Double shear preferred. Bolt-on tabs use minimum of two 1/4" diameter Gr 5 bolts	Visual/Physical Check	
Shoulder harness mounting	Mounting points 178mm to 229mm apart. Angle from shoulder between 10 deg. up and 20 deg. down to horizontal. Attach to Primary Structure not to put bending loads into Main Hoop Bracing w/o extra bracing	Visual/Physical Check	
Firewall	Fire resistant material; must separate driver (line-of-sight up to mid-height of driver's helmet) from fuel, cooling & oil systems. Wire/cable pass-throughs OK with grommets. Multiple panels OK w/ gaps sealed. No gaps at sides or bottom	Visual/Physical Check	
Floor closeout panel	Required from foot area to firewall; solid, non-brittle material; multiple panels are OK if gaps less than 3.18mm	Visual/Physical Check	
Belt attachment fasteners	Attachment bolt must be a minimum of 10mm Metric Grade 8.8 (3/8" SAE Grade 5). Applies to all belts	Visual/Physical Check	
Head restraint Rear pad	Near vertical. Must take 890 N load. 38mm thick, energy absorbing material. Maximum 25.4mm from helmet. Helmet contact point 50mm minimum from any edge. APPLIES TO ALL DRIVERS. May be changed for different drivers. Minimum 6"x6" AND height adjustment of 7"; OR 6"x11"	Visual/Physical Check	
Roll bar padding	Rollbar or bracing that could be hit by driver's helmet must be covered with 12mm thick, SFI or FIA (hard) padding. Pipe insulation and foam not OK	Visual/Physical Check	
Vehicle controls	All controls, including shifter, must be inside cockpit. No hands, arms or elbows outside side impact system to actuate	Visual/Physical Check	
Visibility	100 deg. minimum field either side. Head rotation OK or mirrors. If mirrors, must be firmly installed and adjusted	Visual/Physical Check	
Drivers' foot protection	Feet must be rearward of the Front Bulkhead and no part of shoes or legs above or outside the Major Structure in side or front views when touching pedals	Visual/Physical Check	
Drivers' leg protection	Covers inside cockpit over sharp parts or moving suspension and steering components	Visual/Physical Check	
ENGINE COMPARTMENT			
Engine	Four cycle piston engine, 710cc maximum swept displacement. Waste heat recovery allowed	Visual/Physical Check	
Compressors	Turbo or super chargers allowed if not Original Equipment Manufacturer (OEM) to engine; must be between restrictor and throttle. Carbs not allowed if compressors are used. Compressor recirculation valves ok if downstream of restrictor	Visual/Physical Check	
Air intake system rollover protection	All parts of air intake system (including throttle body or carb, air intake ducting, air cleaner & air box) must be within a surface defined by the top of the roll bar and the outside top edge of the tyres	Visual/Physical Check	
Air intake system	Any portion <350mm above ground has Side Impact protection. Supported if cantilevered (isolated to frame, rigid to engine.) No enlarged air chambers (>60mm diameter) before throttle	Visual/Physical Check	
Electronic throttle controls	ETC or "drive-by-wire" only permitted with pre-approval, requires special separate inspection	Visual/Physical Check	
Throttle pedal	Must have positive stop to prevent overstressing cable	Visual/Physical Check	

ENGINE COMPARTMENT (CONT)			
Throttle	Minimum of 2 springs at the TB, each capable of closing the throttle independently. Throttle position sensor (TPS) not acceptable as a return spring. Cable must have smooth operation with no binding or sticking; minimum 50.8mm (2in) from any exhaust component	Visual/Physical Check	
Restrictor	Must be circular; maximum diameter 20mm for gasoline and 19mm for E85. Cannot be movable	Visual/Physical Check	
Intake manifold	Securely attached to block or head with brackets & mechanical fasteners w/ positive locking mechanisms. Original Equipment Manufacturer (OEM) type rubber bushings not sufficient	Visual/Physical Check	
High pressure hydraulics	Pumps and lines must have 1mm thick steel or aluminium shields to protect driver and workers	Visual/Physical Check	
Fluid leaks	None permitted	Visual/Physical Check	
Exhaust outlet	Outlet 45cm maximum behind rear axle centreline and 60cm maximum above the ground	Visual/Physical Check	
Exhaust shielding	Exhaust components outside the body forward of main hoop must be shielded from people approaching the car. No fibrous / cloth wraps around exhaust tubes	Visual/Physical Check	
Scatter shield materials	For chains, 2.7mm minimum thick STEEL, 3 x chain width. For belts, 3mm minimum thick aluminium 6061-T6, 1.7 x belt width	Visual/Physical Check	
Scatter shields general	Required for clutches, chains, belts, CVT rotating parts, etc. No holes. 6mm diameter M8.8 or 1/4" diameter Grade 5 fasteners minimum. End parallel to lowest part of front and rear sprockets	Visual/Physical Check	
Catch tanks	Coolant overflow, crankcase breather & lube system vents must have separate catch tanks. 1 qt minimum each. 100°C material. Behind firewall, below shoulder level. 3mm minimum diameter vent, away from driver. PCV OK if routed to intake sys upstream of restrictor. Cannot attach breather to exhaust. Trans or diff., unless sealed, require 50 mL catch bottle	Visual/Physical Check	
Coolant	100% water. NO ADDITIVES WHATSOEVER	Visual/Physical Check	
On-board starter	Required	Visual Check	
Gas cylinders	Proprietary manufacture & labelled, non-flammable gas, regulator on tank, securely mounted, axis not pointed at driver, to rear of Main Hoop within the frame envelope, or in structural side pod, but not in cockpit, insulated from exhaust, appropriate lines & fittings	Visual/Physical Check	
Drivetrain finger guards	Required to cover all drivetrain parts that spin while car is at rest. No holes >12mm diameter.	Visual/Physical Check	
Fuel rail	Securely attached to block, head or int. manifold with brackets & mechanical fasteners. No plastic or composite fuel rails, except if unmodified Original Equipment Manufacturer (OEM) part	Visual/Physical Check	
Visible access	To all items on Tech Sheet	Visual/Physical Check	
FUEL SYSTEM			
Fuel system rollover protection	All parts of the fuel storage, supply and fuel control systems, (including fuel rail, throttle body or carburettor), must lie within a surface defined by the top of the roll bar and the outside top edge of the tyres	Visual/Physical Check	
Fuel tanks	Must lie within major structure of the chassis with full side impact protection & firewall between fuel supply & driver. Rigid tanks CANNOT CARRY STRUCTURAL LOAD & must be flexibly mounted. Bladders or bags in rigid container. No portion of fuel system below lower surface of frame	Visual/Physical Check	
Belly pans	Must be vented to prevent accumulation of fuel. 2 holes, each minimum of 25mm diameter	Visual/Physical Check	
Fuel lines	No plastic lines between f/tank & engine. Fuel injection systems use metal braided hose with threaded fittings or reinforced rubber hose & approved clamps. Must be securely attached and protected from rotating equipment & collision failure. High pressure injection systems see IC 1.9.2	Visual/Physical Check	

FUEL SYSTEM (CONT)			
Fuel filler neck	Minimum 35mm inner diameter, within 30° of vertical. Fuel resistant, transparent sight tube, 6mm minimum ID, min 125mm minimum vert. height visible to fueller with vehicle fully assembled, w/ non-moveable fuel level line 12.7mm to 25.4mm below top of sight tube. Sight tube must NOT run below top of tank. Clear filler neck allowed. Must prevent fuel spillage contacting driver, exhaust or ignition. Fuelled w/o manipulating car in any way. Cap secure and capable of withstanding pressurization (i.e., threads or latch)	Visual/Physical Check	
Fuel vents	Must exit outside of the bodywork, and have a check valve to prevent leakage if car inverted	Visual/Physical Check	
Fuel type	98 octane gasoline or E85. Appropriate sticker located adjacent to fuel filler	Visual Check	
ELECTRICAL			
Primary master switch	On driver's right near roll bar, access from outside of car, <u>rotary type, no relay, must kill ALL electrical systems.</u> Marked with international symbol. Lever horizontal when ON	Visual Check. To be Tested at Noise & Brake Inspection	
Cockpit master switch	Pull-ON, Push-OFF, alongside & unobstructed by steering wheel, easily reached by driver. Must kill ignition & fuel pump(s). Marked with international symbol	Visual Check. To be Tested at Noise & Brake Inspection	
Battery	Attached securely to frame or chassis; hot terminal insulated; wet-cells in marine box if inside cockpit; must be identifiable as Pb or Li; All Li based batteries must show manufacturer protection circuit info, be rigid, sturdy, have fire retardant casing, and be separated from the driver by a firewall, while meeting the enclosure requirements of IC4.4.4. No circuits > 60VDC	Visual/Physical Check	
Brake pedal over-travel switch	Must cut ignition & fuel pump; no re-start if released or actuated a second time. Must NOT rely on programming to work. Not resettable by driver	Visual/Physical Check	
Brake light	Working RED brake light, clearly visible from the rear; on vehicle centreline line; height between wheel centreline & driver's shoulders. Round, triangle, or rectangular on black background. 15cm ² minimum illuminated area. LED strips OK if elements closer than 20mm apart and total length >150mm. Sufficient brightness for visible activation in bright sunlight	Visual/Physical Check	
SPECIALISED TESTS			
Main hoop and front hoop heights	Helmet of 95th percentile male (PERCY) to be 50mm below the lines between top of front and main roll hoops and between top of main hoop to rear attachment point of main hoop bracing. Centre of bottom circle placed minimum 915mm from pedals	Visual/Physical Check	
Impact attenuator	Test piece must be presented and be same as IA on car, unless standard attenuator design is used	Visual/Physical Check	
Cockpit opening	Template passes down from above cockpit to centreline of top side impact support (SIS) tube or 350mm above ground if monocoque. Steering wheel & column, seat & padding can be removed. No removing firewall. Fore/aft translation of template OK	Visual/Physical Check	
Cockpit internal cross section	Fig. 9 template to pass from cockpit to 100mm rear of pedals. Steering wheel and padding removable with no tools & driver-in can be removed	Visual/Physical Check	

ELECTRONIC THROTTLE CHECKLIST
 This section must be completed for vehicles equipped with Electronic Throttle Control (ETC)

Two throttle return springs must be present at the throttle body. TPS cannot be treated as a return spring. (IC1.11.3). (This line not mandatory if the throttle module is an OEM production part in pristine condition)	<input type="checkbox"/> PASS
At least two separate TPS sensors are required with separate supply and signal lines unless supply or reference line voltage offset detection can be demonstrated. (IC1.12.2)	<input type="checkbox"/> PASS
Two pedal return springs must be present at the accelerator pedal. APP sensors cannot be treated as a return spring. (IC1.13.2)	<input type="checkbox"/> PASS
At least two separate APPS sensors are required with separate supply and signal lines. (IC1.13.3)	<input type="checkbox"/> PASS
Acceleration pedal must have a travel-limiting stop, to prevent over travel or damage when the pedal is strongly depressed. (IC1.13.2)	<input type="checkbox"/> PASS
Remove any air cleaners or other obstructions so that the throttle valve is directly visible. Disconnect power source from throttle motor while the throttle is open. Throttle must immediately close. (IC1.11.3)	<input type="checkbox"/> PASS
Disconnect first TPS sensor while the throttle is open. Throttle must close. Repeat for second TPS. (Team must provide or install a way to disconnect one sensor at a time.) (IC1.12.3)	<input type="checkbox"/> PASS
Disconnect first APP sensor while the throttle is open. Throttle must close. Repeat for second APP. (Team must provide or install a way to disconnect one sensor at a time.) (IC1.13.4)	<input type="checkbox"/> PASS
Determine a method to cause the fuel pump to run (typically: ignition-on) and verify it is running (audibly, from computer display, etc.). Activate the fuel pump, open the throttle, insert a blocking device into the throttle valve, and command the throttle to fully close. Fuel pump must automatically become disabled due to throttle being unable to close. (IC1.15.2)	<input type="checkbox"/> PASS
Activate the fuel pump, open the throttle, and then unplug the brake system encoder from the ECU. Throttle must close due to failed BSE. (IC1.14.3)	<input type="checkbox"/> PASS
Activate the fuel pump, open the throttle, and then unplug the brake system encoder from the Brake System Plausibility Device . Throttle must close and fuel pump must be disabled due to failed BSE. (IC1.16)	<input type="checkbox"/> PASS
Activate the fuel pump, open the throttle, then apply medium brake pedal pressure while throttle is still open. Fuel pump and throttle must automatically become disabled due to brake implausibility. (IC1.16.1)	<input type="checkbox"/> PASS

DRIVER COCKPIT CHECKS

Driver's Name	Helmet Line	Head Rest-Fore & Aft	Head Rest-to Edges	FHR Y or N	Lap Belt	Shoulder Belts	Sub Belts	Egress	Driver's License	Inspector

Helmet Line - Helmet of tallest driver to be 50mm (2.0 in) below lines between top of front and main roll hoops and between top of main hoop to rear attachment point of main hoop bracing.
 Head Restraint - Fore & aft, 25.4mm maximum to back of helmet
 Head Restraint - Helmet contact point 50mm minimum from any edge
 Lap Belt - Over hip bones and tight
 Shoulder Belts - 10 deg. up & 20 deg. down to horizontal and tight Adjusted correctly for FHR
 Sub Belts - Tight
 Egress - Less than 5 seconds to exit to side of vehicle with BOTH feet on ground from fully seated position with all safety equipment. Must include actuation of cockpit master switch. Wings must remain fixed in position. ALL DRIVERS

MECHANICAL TECHNICAL INSPECTION COMPLETE

Approved by: _____ **Date/Time:** _____

ONCE ALL ITEMS ARE PASSED, THE "TECH INSPECTION" STICKER SHOULD BE FITTED TO THE VEHICLE. THE TEAM MAY THEN PROCEED TO THE TILT TABLE TEST.

NON-COMPLIANCES/COMMENTS

TILT TABLE INSPECTION

Lead Scrutineer:		Start Date/Time:
Liquid spillage	No fuel or liquid spill permitted when car is tilted to 45 degrees in the direction most likely to create spillage. The test will be conducted with the vehicle containing the maximum amount of fluids it will carry during any test or event. Fuel tanks must be filled to their sight tube fill line	<input type="checkbox"/> PASS
Vehicle stability	All wheels in contact with tilt table when tilted to 60 degrees to the horizontal. The test will be conducted with the tallest driver in the normal driving position	<input type="checkbox"/> PASS
Fuel type and sticker	Fuel sticker in place adjacent to F/T filler. Ensure fuel type is marked on front page of this form	<input type="checkbox"/> PASS

TILT TABLE INSPECTION COMPLETE

Approved by:	Date/Time:
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ONCE ALL ITEMS ARE PASSED, THE "TILT TABLE" STICKER SHOULD BE FITTED TO THE VEHICLE. THE TEAM MAY THEN PROCEED TO THE NOISE & BRAKE TEST

NON-COMPLIANCES/COMMENTS

NOISE & BRAKE TEST INSPECTION

Lead Scrutineer:		Start Date/Time:	
Noise level	110 dB (C) ("C" scale) maximum during a static test, gearbox in neutral, UP TO a specified rpm (see Rule IC 3.2.4). 103 dBC at idle. Microphone level with the exhaust outlet(s), 0.5 m (19.7") from the outlet(s), at 45 degrees to the outlet. If multiple outlets, all to be checked. If movable tuning or throttling device, see IC 3.2.3	Noise level:	
Primary master switch	Test Primary Master Switch on drivers' right near roll bar (must kill all electrical systems). Perform at end of Noise Test	<input type="checkbox"/> PASS	
Cockpit master switch	Test Cockpit Master Switch alongside and unobstructed by steering wheel (must kill ignition and fuel pumps). Perform at the end of Noise Test	<input type="checkbox"/> PASS	
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	<input type="checkbox"/> PASS	

BRAKE TEST INSPECTION COMPLETE	
Approved by:	Date/Time:
ONCE ALL ITEMS ARE PASSED, THE "NOISE TEST" AND "BRAKE TEST" STICKERS SHOULD BE FITTED TO THE VEHICLE.	

NON-COMPLIANCES/COMMENTS

NOTES