

TECHNICAL INSPECTION SHEET - SUPRA SAEINDIA 2011

Registration & Documents Clear Seal	Team Name _____	Vehicle NO # _____ #	Head of the Technical Committee for SUPRA SAEINDIA 2011
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1	College Name
2	a) Name and Signature of 1st Driver for this Car b) Name and Signature of 2nd Driver for this Car
3	Name and signature of the Team leader
4	Name and signature of the faculty advisor

Instructions:
 1) Teams to fill in all the tables with all other information prior to technical inspection .
 2) The National Technical Board will keep this form. This form will be used to certify at anytime that a vehicle has the original components that it went through tech. inspection.

SEF DEVIATIONS?	YES	NO	Tech Inspector Comments if any:
Engine Number			

IMPORTANT

NOTE - IF THERE IS A CONFLICT BETWEEN THIS FORM AND THE RULES, THE RULES PREVAIL

*** Please make sure to inspect your car completely before you bring the car to technical inspection. Make sure the team has inspected the car and checked all of the boxes (team checked column) as passing. Next, the faculty advisor and team captain must sign off that the team has inspected it. Finally, this completed packet needs to be submitted at the technical inspection with the car.***

SECTION	RULES	Actual Measurements as per vehicle (to be filled by the team)	Tick if approved & Mark X if not Approved (Tech Inspector)	Specific Comments if any Major anomaly observed
TYRES & WHEELS				
	Supplied by Organisers			
	145/70/R12, (12.0 in) min. diam.			
3.2.3.1	Wheels with single wheel nut must have positive retainer.			
DRIVER'S EQUIPMENT				
3.4.2.1	HELMETS - ISI, Snell SA2000, SA2005, SA2010 , BS 6658-85 Type A/FR (not Types A or B). SFI 31.2A, SFI 31.1/2005, FIA 8860-2004. Closed Face, no Open Face			
3.4.2.2	DRIVERS' SUITS - Single piece FIA 1986 or 2000 Standard, or SFI 3-2A/5 minimum rating, and LABELED AS SUCH.			
3.4.2.3	GLOVES - Fire resistant material. No holes. Leather allowed only over fire resistant material.			
3.4.2.4	GOGGLES / FACE SHIELDS - made of impact resistant material.			
3.4.2.5	SHOES - Fire resistant material. No holes. Leather allowed only over fire resistant material.			
3.4.2.7	HAIR COVER - Fire resistant (Nomex or equiv.) balaclava of full helmet skirt REQUIRED FOR ALL DRIVERS.			
3.4.10.2	FIRE EXTINGUISHERS - Two (2) hand-held, 0.9 kg (2 lb.) minimum, dry chemical (10BC, 1A10BC, 34B, 5A 34B, 20BE or 1A 10BE), or 1.75litres AFFF, extinguishers; 1 WITH CAR, 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.			
EXTERIOR, GENERAL				
5.11.2	PUSH BAR - With car, detachable, push & pull for 2 people standing erect behind the car.			
3.2.6	JACKING POINT - Must have an exposed tube at the rear perpendicular to the longitudinal axis approx. 30 cm (12 in) long by 2.5-2.9 cm (1-11/8 in) O.D. Painted orange. Visible to person standing 1 metre behind car.			
3.1.1	BODY & STYLING - Open wheeled, open cockpit, formula style body.			

3.1.2	WHEELBASE - Minimum 1524 mm (60 in)			
3.1.3	The smaller track of the vehicle (front or rear) must be no less than 75% of the larger track.			
3.6.1	CAR NUMBERS - On front & both sides of car, minimum 15.24 cm (6") tall, 20 mm (3/4") stroke & spacing, B on W, W on B only, specified background shapes. Must be clearly visible.			
3.6.2	College NAME & OTHER DECALS - School Name, or recognised initials - 5.1 cm (2") tall min. on both sides in Roman letters.			
3.6.3	SAE DECALS - SAEINDIA logo front and/or both sides, prominent location.			
3.6.4	TECH STICKER SPACE - 25cm x 20cm (10"x 8") on centerline of upper front nose of car.			
3.7.1.3	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).			
3.7.1.3	WING EDGES - Leading edges must be 1.5 mm (0.060 in.) min. radius.			
3.7.1.3	AERODYNAMICS - ALL aero devices, wings, u/trays, splitters, no further forward than 76 cms. (30") in front of front tires,			
3.7.1.3	AERODYNAMICS -ALL aero devices, wings, u/trays, splitters no more rearward than 30.5 mm (12") rear of rear tires,			
3.7.1.3	AERODYNAMICS - ALL aero devices, wings, u/trays, splitters, no wider than outside of widest track . No power ground effects.			
3.7.1.3	AERODYNAMICS - ALL aero devices, wings, u/trays, splitters, No power ground effects.			
PRIMARY STRUCTURE				
	ALTERNATIVE FRAME - If alternative tube size/mat'l, app'd SEF req'd. If using Alternative Frame Rules, SRCF req'd. No Magnesium in primary structure.			
3.3.3.2	MAIN HOOP - MUST BE STEEL.40.00 X 2.00 wall. Must be 1 piece & extend to lowest frame member. 380 mm (15 ins) apart (inside dim.) where attaches to the Major Sturcture. Above Major Structure, must be within 10 deg. of vertical. Smooth bends with no wrinkles			
3.3.3.2	MAIN HOOP BRACING - MUST BE STEEL. One brace each side, 1.00" x 0.065" or 25.0 mm x 1.75 mm min., attached within 16 cm (6.3 in.) 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 bottom of main hoop and node of upper side-impact tube thru proper triangulated structure.			
3.3.5	SHOULDER HARNESS MOUNTING BAR/TUBE - 1.00" OD x 0.095" wall or 25.0 mm OD x 2.5 mm wall steel or equiv. Gussets or braces if not straight to main hoop.			
3.3.4.3	FRONT HOOP- Must be closed section metal tube. 1.00" OD x 0.095" wall or 25.0 mm OD x 2.5 mm wall steel, or equiv. Can be multi-piece. Must extend down to lowest frame member. Max. 20 deg. to vertical. No lower than top of steering wheel. Max. 25 cm (9.8 ins) horizontal distance to steering wheel.			
3.3.5.2	FRONT HOOP BRACING - Two forward facing braces, 1.00" OD x 0.065" or 25.0 mm OD x 1.75 mm steel or equivalent, attached within 5 cm. (2 ins) of top. Extra rearward bracing required if Front Hoop leans backwards more than 10 deg.			
3.3.5.4	OTHER SIDE TUBES - Design prevents driver's neck hitting bracing or other side tubes			
3.3.3.2	SIDE IMPACT PROTECTION - Min. of two (2) tubes + diagonal must connect the main and front hoops. Upper tube must be between 300 mm and 350 mm (11.8" and 13.8") 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 25.0 mm OD x 1.75 mm wall steel or equivalent. Monocoques require signed SEF.			
3.3.3.2	FRONT BULKHEAD - 1.0" OD x 0.065" wall, or 25.0 mm x 1.75 mm wall, steel tube or equiv. No non-crushable objects forward of bulkhead.			
3.3.3.2	FRONT BULKHEAD SUPPORT - Support back to front roll hoop; 3 tubes per side, all 1.00" OD x 0.049" wall steel tube or equiv.. 1 bottom, 1 top within 50 mm (2") of top of bulkhead, 1 node-to-node diagonal (must form a triangle with Front BulkH'd and either top or bottom tube). (25.0 mm x 1.5 mm and 26.0 mm x 1.2 mm metric tubes OK)			
3.3.6.4	IMPACT ATTENUATOR - Need Impact Attenuator forward of bulkhead, 200 mm (7.8") long x 200 mm (7.8") wide x 100 mm (3.9") high. No wing supports through the IA.			
3.3.6.4	IMPACT ATTENUATOR MOUNTING - All cars must have 1.5 mm steel, 4 mm Al, or approved equiv IA anti-intrusion plate. Plate must be securely fastened directly to the bulkhead and capable of taking transverse and vertical loads (welded or min. four 8mm (5/16"))			
3.3.9	INSPECTION HOLES - 4.5mm holes be drilled.			
3.4.13	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.			

STEERING, SUSPENSION, BRAKES				
3.2.2	GROUND CLEARANCE - Sufficient clearance so that no part of the car other than the tires will contact the track surface. A Minimum of 25.40mm static ground clearance under the complete car at all times.			
3.2.1	SUSPENSION - Fully operational with dampers front and rear; 50mm (2.0 in) minimum wheel travel with driver in vehicle.			
3.2.1	SUSPENSION PICK-UP POINTS - Inspected thoroughly for integrity.			
3.2.5	BRAKES - Dual hydr. sys. & 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			
	Brake pedal capable of 2000N (450 lbs-f), no failures if official exerts max force (seated normally in vehicle).			
3.4.6	STEERING WHEEL - Continuous perimeter, near round (no concave sections) with driver operable quick disconnect. 25 cm (9.8 ins) max. from Front Hoop.			
3.2.4	STEERING - On at least two wheels with positive stops to prevent linkage lock up or tires 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			
3.7.2.2	FASTENERS - Steering, braking, harness & suspension sys. use SAE Grade5, Metric Grade M8.8 or higher (AN/MS) w/ visible positive locking mechanisms, no Loctite or lock washers. Min. 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.			
	VISIBLE ACCESS - To ALL components on Tech form.			
INTERIOR				
3.4.1	DRIVER RESTRAINT HARNESS - SFI 16.1, SFI 16.5 or FIA spec 5, 6 or 7 point and be labeled. 50 mm (2") wide shoulder belts OK with HANS. 50 mm (2 in.) 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.			
3.4.1 - F	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 min. Any tabs to be 1.0" x 0.063" thick min. Double shear preferred.			
3.4.1 - E	LAP BELT MOUNTING - Must pass over pelvic area at between 45-65 deg. to horiz for upright driver, 60-80 deg. for reclined. Pivoting mounting with eye bolts or shoulder bolts attached securely to Primary Structure.			
3.4.1 - F	SHOULDER HARNESS MOUNTING - Mounting points 7"- 9" (178-229 mm) 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.			
3.4.10.1	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.			
3.4.5	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).			
3.3.4.1	MAIN HOOP & FRONT HOOP HEIGHTS - Helmet of tallest driver to be 50 mm (2.0 ins) below lines between top of front and main roll hoops and between top of main hoop to rear attachment point of main hoop bracing.			
3.4.4	HEAD RESTRAINT - Near vertical. Must take 890 N (200 lbs.f) load. 38 mm (1.5 in) thick, energy absorbing padding. Max. 25.4 mm (1.0") from helmet. Helmet contact point 50 mm min. from any edge. APPLIES TO ALL DRIVERS. May be changed for different drivers.			
3.4.4	ROLL BAR PADDING - Rollbar or bracing that could be hit by driver's helmet must be covered with 12 mm (0.5 in) thick, SFI or FIA (hard) padding. Pipe insulation and foam not OK.			
3.4.3	VISIBILITY - 100 deg. min. field either side. Head rotation OK or mirrors. If mirrors, must be firmly installed and adjusted.			

3.4.12	VEHICLE CONTROLS - All controls, including shifter, must be inside cockpit. No hands, arms or elbows outside side impact system to actuate.			
3.4.14	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 when touching pedals.			
3.4.14	DRIVER'S LEG PROTECTION - Covers inside cockpit over sharp parts or moving suspension and steering components.			
3-4-7	EGRESS - 5 seconds max. to exit to side of vehicle from fully seated position with all safety equipment; wings must remain fixed in position. ALL DRIVERS.			
ENGINE COMPARTMENT				
	COMPRESSORS - Turbo or super chargers NOT allowed.			
3.5.3.9	AIR INTAKE SYSTEM ROLL OVER 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 tires.			
3.5.3.9	AIR INTAKE SYSTEM - Any portion <350 mm above ground has Side Impact protection (per Rule 3.3.8). Supported if cantilevered (isolated to frame, rigid to engine)			
3.5.4.1	ELECTRONIC THROTTLE CONTROLS - ETC or "drive-by-wire" NOT permitted.			
3.5.4.1	THROTTLE PEDAL - Must have positive stop to prevent overstressing cable.			
3.5.4.1	THROTTLE - Must have minimum of 2 springs at the TB, each capable of closing the throttle independently. TPS not acceptable as a return spring. Cable must have smooth operation with no binding or sticking; min. 50.8 mm (2 in) from any exhaust component.			
3.5.3.8 - C	INTAKE MANIFOLD - Securely attached to block or head with brackets & mechanical fasteners. OEM type rubber bushings not sufficient.			
3.5.3.8 - B	FUEL RAIL - Securely attached to block, head or int. manifold with brackets & mechanical fasteners.			
3.5.1.5	ON-BOARD STARTER - Required.			
3.5.3.6.1	FLUID LEAKS - Oil, coolant, fuel - none permitted.			
3.5.5.2	EXHAUST OUTLET - Outlet 45 cm (17.7") max. behind rear axle centerline and 60 cm (23.6") max. above the ground.			
3.5.5.2	EXHAUST SHIELDING - Exhaust components outside the body forward of main hoop must be shielded from people approaching the car.			
	CATCH TANKS - Coolant overflow, crankcase breather & lube system vents must have separate catch tanks. 1 qt min. each. 100 deg. C mat'l. Behind firewall, below shoulder level. 3 mm min. dia. vent away from driver. PCV OK if routed to intake sys upstream of restrictor. Cannot attach breather to exhaust.			
3.7.4	GAS CYLINDERS - Proprietary manufacture & labeled, nonflammable gas, regulator on tank, securely mounted, axis not pointed at driver, to rear of Main Hoop within the frame envelope, or in structural sidepod, but not in cockpit, insulated from exhaust, appropriate lines & fittings.			
	HIGH PRESSURE HYDRAULICS - Pumps and lines must have 1 mm thick steel or aluminum shields to protect driver and workers.			
	VISIBLE ACCESS - To all items on Tech Sheet			

FUEL SYSTEM				
3.5.3.9	FUEL SYSTEM ROLL OVER PROTECTION - All parts of the fuel storage, supply and fuel control systems, (including fuel rail, throttle body or carburetor), must lie within a surface defined by the top of the roll bar and the outside top edge of the tires			
3.5.3.9	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.			
	BELLYPANS - Must be vented to prevent accumulation of fuel.			
3.5.3.7	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.			
3.5.3.2	FUEL FILLER NECK - Min. 38mm diam. & 125mm vert. height above top of tank. Fuel resistant, transparent sight tube, 6mm min. ID, 75mm min. vert. height, visible to fueler w/ non-moveable fuel level line 12.7-25.4 mm below top of sight tube. Sight tube must NOT run below top of tank. Clear filler tube allowed. Must prevent fuel spillage contacting driver, exhaust or ignition. Fueled w/o manipulating car in any way.			
3.5.3.6	FUEL VENTS - Must exit outside of the bodywork, and have a check valve to prevent leakage if car inverted.			
ELECTRICAL				
3.4.9.1	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.			
3.4.9.2	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.			
3.4.11	BATTERY - Attached securely to frame or chassis; hot terminal insulated; wet-cells in marine box if inside cockpit.			
3.2.5.2	BRAKE LIGHT - Working RED brake light, 15 watts min. or equiv. required, clearly visible from the rear; on veh. centerline line; height between wheel centerline & driver's shoulders.			
SPECIALIZED TESTS				
	MAIN HOOP & FRONT HOOP HEIGHTS - Helmet of 95th percentile male (PERCY) to be 50 mm (2.0 ins) 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.			
	IMPACT ATTENUATOR - Test piece must be presented and be same as IA on car, unless standard attenuator design is used.			
	COCKPIT OPENING - Template passes down from above cockpit to top SIS tube or 350mm above ground if monocoque. Strg wheel & column, seat & padding can be removed. No removing firewall. No fore/aft translation of template.			
	COCKPIT INTERNAL CROSS SECTION - Fig. 9 template to pass from cockpit to 100 mm rear of pedals. Strg wheel and padding removable with no tools & driver-in can be removed.			

Technical Inspector Comments If Any :