

Electrical Tests

Electrical inspection consists of three separate tests:

1. Preliminary Electrical Inspection (Max 10 minutes)

The main function of the preliminary inspection is to impress the importance of safe working practices and to ensure electrical safety for following mechanical inspections. It includes:

- Request for electrical safety documentation (Rule 4.10). A team cannot start Electrical Scrutineering until this documentation is received
- Identification of Team Safety Officer (FH 2.1.9)
- A general safety review with the team
- Review of tagout/lockout (FH 3.4.12) and vehicle jack-stand procedures (FH 6.10.6)
- A check for exposed high voltage terminals, etc.
- Proper operation of accumulator contactors (That no HV exits ES containers, or that the vehicle is otherwise de-energized e.g. Anderson plug removed and capped).
- No ungrounded conductive penetrations in the ES containers
- No ungrounded conductive parts or body panels etc., that could become energized
- That the LV system battery (if used) is fused
- A check for other electrical safety issues

2. Safety Equipment and Charging (Max 15 minutes)

This inspection is done by roving inspection teams who check safety equipment and charging equipment in each team's garage bay. These inspection teams will also be looking out for safety issues and safe working practices (safety glasses, lockout/tagout, charger monitoring etc.). Teams may not charge their vehicles until charging equipment has been inspected and marked with a pass sticker.

3. Electrical Scrutineering (Max 40 minutes)

Electrical system documentation (FH 4.10) must be handed to electrical inspectors before this test can begin.

This is the main electrical scrutineering test. All areas of the FH electrical rules are covered including:

- High voltage isolation
- Operation of master safety switches (Big Red Buttons)
- No exposed high voltage connections
- High voltage insulation, wiring and conduit
- Fusing
- Accumulator type and size
- Energy storage container electrical and mechanical requirements
- Low voltage circuit requirements
- Off-board charging equipment

Note that the ability of the Master Switches to shut down an IC engine is performed in the final mechanical test: "Noise, Master Switch, and Brake Test".

Inspection Forms & Stickers

Inspection forms for each of the three tests are filled in by the inspectors as testing progresses. If a team fails a test, the failure is documented on the form, and the team is asked to remedy problems and re-test. Once a test is fully completed, the form is signed off by the inspectors and filed. Upon successful completion of the preliminary and safety-equipment/charger tests, "Pass" stickers are given to the teams by the inspectors. Upon completion of the main scrutineering test, the chief electrical inspector will review all forms and provide signed "Final" electrical sticker to the team.

Location

Preliminary and final electrical Inspection will be located at a tent in the S2 lot on Sunday and at the Central Garage on Monday. Teams will line their vehicles up in one queue for preliminary inspection, and another queue for scrutineering. Safety and charger inspection will be performed in the team garage area.

Time

If a team exceeds the maximum time allotted, they may be asked to resolve outstanding issues and re-queue for the test.