

Flammability configuration assessment

- Identify flammable materials used, their amounts, thickness, exposed surface, exposure environment
- Identify propagation paths for exposed materials (including housing)
- If configuration is container, evaluate its capability to contain an internal fire
- If unacceptable configuration through the configuration assessment, there are two options:

Use fire break concepts to reduce flammability hazard by isolating the flammable materials

Conduct a test to show acceptability of configuration

ECSS-Q-70-21A: Flammability testing for the screening of space materials

Purpose :

Determine if a wire insulation system, when exposed to an external ignition source, will self-extinguish and not transfer burning debris, which can ignite adjacent materials

Acceptance criteria

Prior to flame application, while heating wire to maximal operation T, no spontaneous combustion, splitting insulation nor baring conductor

During ignition and combustion no flaming droplets/particles

After burner is extinguished, cease flaming within 10 s and within a total burn length of 150 mm

Sample dimensions : 5 x 1m

Test atmosphere : depend on application (20% O₂ or more...)