# CS 31GB.61 Electrostatic discharge

*ED Decision 2011/012/R*

There must be appropriate electrostatic discharge means in the design of each balloon whose liftproducing medium contains a flammable gas to ensure that the effects of electrostatic discharge will not create a hazard.

## AMC 31GB.61 Electrostatic discharge

*ED Decision 2011/012/R*

Appropriate electrostatic discharge means are met when compliance with all of the following requirements is demonstrated.

1. The surface resistance on the inside of the balloon envelope after 24-hour storage at a relative air humidity of less than 50% must be value 109 Ω or lower. The values are to be determined using approved measuring methods.
2. The respective layer of a non-conductive material (surface resistance in excess of $10^9$ Ω) must not be thicker than 0.3 mm unless it is enclosed by conductive layers.
3. The balloon envelope and all other conductive parts of the balloon (surface resistance less than $10^9$ Ω) must be conductively connected to each other (resistance of connection less than $10^6$ Ω). This requirement also applies to the joints between the panels and reinforcements.
4. There must be at least three independent discharge paths for the safe balance of the electrostatic charges from the inside of the envelope running to the bottom end of the basket.
5. The discharge paths should run on the conductive side of the envelope from top to bottom and then further down to the ground. This requirement applies to the case when the balloon is in contact with earth’s surface.
6. Each discharge path under (d) must be of different kind or design to the other.
7. Periodic maintenance checks of the surface resistance and discharge paths should be included in the instructions for continued airworthiness.

Note: More detailed information can be found in:

EN 61340-5-1&2:2007 Protection of electronic devices from electrostatic phenomena – General Requirements & User guide

IEC 60093 Methods of Test for Volume Resistivity and Surface Resistivity of Solid Electrical Insulating Materials

→ CS 31GB.63