

Security Tamper-Evident Bags Testing Protocol: AVS&C STEB/PROT-2008.V1

I. Visual inspection:

Based on the ICAO specifications¹, five bags will be inspected on the following items:

- 1- size of the bags (with and without the handle) and thickness (minimum of 50 microns);
- On the front side:
- 2- red tamper evident high tack pressure sensitive self adhesive tape (minimum 30mm tape with 40mm release liner);
 - 3- side and bottom borders of 15mm width (flat or curved seals²) in red;
 - 4- printed border of 5mm with "DO NOT OPEN", airport name or any other continuous message of design which may bleed over the edge of the bag;
 - 5- security sign (happy face) in green in the middle of the security box (33% of the width²);
 - 6- box in red at the bottom stating "Do not open until final destination – contents may be confiscated if bag is tampered with";
 - 7- State three-letter code, or airline international three-letter code + Manufacturer name;
 - 8- Inventory code and security code on the handle; and
 - 9- Same security code inside the security box².

Any other security sign or device should be noted.

II. Temperature tests on the security tape:

Two bags will be closed and after a delay of one minute exposed to the temperature. One bag will be examined after 5 min and the other bag will be examined after 6 h. Attempts will be taken to open and close the security tape of the bag without causing signs of manipulation. The tests will be done at following temperatures: Room temperature, 60°C, 80°C, 100°C, -5°C, -10°C, -20°C. Additionally one test will be performed with a cooling spray (immediate freezing at about -40°C) at an exposure time of 1 min. Finally, one test will be performed using hair dryer (at about +60°C) directly on the security tape at an exposure time of 1 min to identify heating indicators, if any.

III. Solvent tests on the security tape and the sealing:

Three strips will be cut out of the bag: one strip containing the security tape, one strip containing one side border and one strip containing the bottom border (including the sealing). The security tape will be closed and after a delay of one minute, the three strips will be exposed to the solvent. After storage time of 6 h in the solvent, attempts will be taken to open and close the security tape and/or the sealing of the bag without causing signs of manipulation. The tests will be done with the following solvents: Acetone, Ethanol, Ethyl acetate, n-Hexane, Tetrahydrofuran and Toluene

IV. Cutting test on the borders (Optional):

Attempts will be taken to open the bags by cutting (from the back side or the front side) and then trying to glue or re-seal the bags again without causing signs of manipulation. This will be performed on the bag below the security tape or the top border, on the left and the right border and on the bottom (edge of the sealing). Another attempt will be taken by trying to exchange the handles of the bags by cutting and gluing/sealing if no security information is contained inside the "security box". The manipulation is done by gluing or by sealing with a sealing machine. Two different bags will be used for gluing and two others for resealing. A first visual evaluation of signs of transformation of the bag is performed by the Laboratory. Then, series of security inspections at 10 seconds, 30 seconds and one minutes are performed by airport security staff to identify signs of tampering.

V. Resistance test:


Bags will be loaded with three (water) bottles of 1,25 litres, then closed and suspended on a rack during 24h. Pictures of the bags will be taken after 6h (normal to extensive use) and 24h (maximum use).

Acceptance criteria:

For the visual inspection (I): +/- 1mm tolerance will be considered as acceptable on dimensions. Differences with ICAO specifications will be noted in the report. For the tests II, III and IV, attempts to open the security tape, or tamper with the STEB, should lead to the appearance of a security sign (heat indicator or word such as VOID or STOP) and/or clearly visible signs of manipulation, and/or the irreversible breaking of the security tape and/or the STEB itself. For test V, the 6h test should be successful, results (and pictures) of the 24h test will be added to the report.

Failure of test II, or III, or V (6h) will be considered as failure of the overall testing protocol.

Developed by AVS&C and ISEGA, in April 2008.


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¹ ICAO State Letter AS 8/11-07/26 Confidential dated 30 March 2007

² not clearly stated in the ICAO State Letter, but indicated in the ICAO security website