

# European Aviation Safety Agency

## European Technical Standard Order

**Subject:** Flight Deck (Sedentary) Crew Member Protective Breathing Equipment

### 1 — Applicability

This ETSO provides the requirements which Flight Deck (Sedentary) Crew Member Protective Breathing Equipment that are designed and manufactured on or after the date of this ETSO must meet in order to be identified with the applicable ETSO marking.

### 2 — Procedures

#### 2.1 — General

Applicable procedures are detailed in CS-ETSO, Subpart A.

#### 2.2 — Specific

None.

### 3 — Technical Conditions

#### 3.1 — Basic

##### 3.1.1 — Minimum Performance Standard

Standards set forth in the SAE AS8031A, Personal Protective Devices for Toxic and Irritating Atmospheres Air Transport Flight Deck (Sedentary) Crew members, dated 3/1/1999 as amended by Appendix 1 to this ETSO.

##### 3.1.2 — Environmental Standard

To be tested in accordance with the procedures in SAE AS8026A, Crewmember Demand Oxygen Mask for Transport Category Aircraft, dated July 1996, paragraph 4.5.

##### 3.1.3 — Computer Software

None.

##### 3.1.4 — Electronic Hardware Qualification

None.

#### 3.2 — Specific

None.

##### 3.2.1 — Failure Condition Classification

See CS-ETSO, Subpart A, paragraph 2.4.

### 4 — Marking

#### 4.1 — General

Marking as detailed in CS-ETSO, Subpart A, paragraph 1.2.

**ETSO-C99a**

#### 4.2 — Specific

In addition to 4.1, the mask assembly shall be marked with the following:

- (1) Size (if more than one size is manufactured),
- (2) Type (as specified in ETSO-C89a, paragraph 3), and
- (3) 'Beards will not seal', if applicable.

#### **5 — Availability of Referenced Document**

See CS-ETSO, Subpart A, paragraph 3.

**APPENDIX 1**

**MPS FOR FLIGHT DECK (SEDENTARY) CREWMEMBER PROTECTIVE BREATHING EQUIPMENT**

The applicable standard is SAE AS8031A, Personal Protective Devices for Toxic and Irritating Atmospheres Air Transport Flight Deck (Sedentary) Crewmembers, dated March 1999. It shall be modified as follows:

<b>AS8031A section:</b>	<b>Action:</b>
Section 1, SCOPE	To be disregarded.
Paragraph 7.1 a. Resistance to Flammability	To be revised:  The device shall be designed, including packaging, (except small parts like knobs, triggers, fasteners, seals, and electrical parts) of materials that don't contribute significantly to the propagation of a fire, and that comply with CS 25.853(a), Appendix F, Part I(a)(1)(iv).
Paragraph 7.1j	To be revised:  'ANSI/ASSE Z87.1-2003, "Occupational and Educational Eye and Face Protection Devices."'
Paragraph 7.1k	To be revised:  'ANSI/ASSE Z87.1-2003, (Table 8) "Optical Quality, Normal Corrective Vision." Clear versus yellow tint and vision distortion testing for thermal protection.'
Paragraph 8.1	To be revised:  'Cleaning and Sterilising: Except for non-reusable or disposable systems, it must be ensured that cleaning and sterilising the device is possible without major disassembly and adverse effects on operation and performance. The cleaning method must be either manufacturer-recommended, or according to SAE ARP 1176, Oxygen System Component Cleaning and Packaging. Cleaning and sterilising procedures shall be included in the CMM.'

**APPENDIX 1**

**MPS FOR FLIGHT DECK (SEDENTARY) CREWMEMBER PROTECTIVE BREATHING EQUIPMENT**  
*(continued)*

<b>AS8031A section:</b>	<b>Action:</b>
Section 8, IDENTIFICATION	To be disregarded except of paragraph 8h
Paragraph 9.1	The following values shall be used:  X=.05, Y=.10 and Z=.05.
Paragraph 10.1 For Flight deck Crewmembers	To be revised:  An integral microphone shall be included in the protective device when it is necessary to allow the user to communicate (speak) through the aircraft's communication system. The microphone must be approved or meet the requirements of ETSO-C139a or later.